



Co-funded by the European Union



2024-1-LT01-KA220-SCH-000244021

SmartEd - AI Integration in Schools

IO 2: Adaptive Learning Modules:
Tailored AI Solutions for Diverse Learners



Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the National Agency. Neither the European Union nor National Agency can be held responsible for them.

Table of Contents

	Partner Organisation	Authors	Page
Module 1: Interactive Learning Adventures	Siauliu Vinco Kudirkos progimnazija, Lithuania	Ausma Šereivienė Vida Šarauskienė	6
Module 2: Adaptive Math Mastery	Popular University, Italy	Angela Franchino	37
Module 3: Customized Language Learning	Educom, Greece	Georgia Karagianni	105
Module 4: Inclusive Science Explorations	Srednja škola Ban Josip Jelačić, Croatia	Ankica Šarić Helga Kraljik	144
Module 5: Accessible Social Studies Studies	Aradippou Lyceum, Cyprus	Vassiliki Koukounidou Michalis Livitziis Constantia Symeou	189
Module 6: Creative Arts Showcase	ASEF, Romania	Mihaela Cojăcaru	237
Module 7: Personal Development Journey	Araxa Edu, Türkiye	Özkan Çam	264

Overview of IO2: Purpose and Goals

Adaptive Learning Modules: Tailored AI Solutions for Diverse Learners

IO2 focuses on the development of adaptive learning modules designed to meet the diverse needs of students, including those with special needs. These modules aim to foster inclusivity in education by ensuring that all students receive personalized support tailored to their individual learning styles and abilities. By leveraging AI, the modules promote engagement and academic achievement, regardless of students' backgrounds or learning capabilities.

Developed in interactive digital formats, IO2 consists of over 70 activities that integrate AI-driven learning strategies. Each module is designed to enhance specific areas of education.

All modules include comprehensive teaching materials and guides, ensuring that educators can effectively implement adaptive learning strategies in their classrooms.

Target Audience

The **SmartEd** project is designed to enhance education through the integration of AI-driven adaptive learning, ensuring that all students, regardless of their abilities or backgrounds, receive personalized support. By fostering inclusivity and innovation, the project targets key educational stakeholders, including students, educators, school leaders, and policymakers. Through tailored learning modules and professional development opportunities, **SmartEd** aims to equip both learners and educators with the tools needed to navigate and thrive in a technology-enhanced educational landscape.

Special Needs Students

The project prioritizes students with diverse learning needs, including those with physical, cognitive, sensory, or developmental disabilities. By leveraging AI technology, it aims to provide tailored support and inclusive educational resources, ensuring equitable access to quality learning. Through adaptive learning modules, these students receive personalized instruction that promotes academic success and fosters their full participation in the learning process.

Regular Students

While primarily designed to support students with specific needs, the project also benefits regular students by integrating AI-driven learning opportunities. Through innovative teaching methodologies and interactive educational tools, it enhances engagement, deepens understanding, and supports diverse learning styles. By incorporating adaptive and technology-enhanced learning approaches, all students can develop essential skills for the future.

Teachers and Educators

A key focus of the project is equipping educators with the knowledge and skills necessary to effectively integrate AI into their teaching practices. By enhancing their digital readiness and pedagogical competencies, the initiative empowers teachers to create more personalized and inclusive learning experiences. Educators in schools, vocational training centers, and adult education institutions will gain practical strategies to improve student engagement and learning outcomes.

School Leaders and Administrators

School leaders and administrators play a crucial role in fostering an environment that supports AI integration and inclusive education. The project engages them in shaping educational policies, allocating resources, and promoting innovation within their institutions. By providing strategic guidance and leadership training, it ensures that AI-driven educational initiatives are effectively implemented to benefit all students.

Policymakers and Stakeholders

At the local, national, and European levels, policymakers and stakeholders influence the direction of education by shaping policies, securing funding, and driving innovation. The project aims to foster collaboration with these key decision-makers to advocate for inclusive education policies, support AI integration initiatives, and encourage knowledge exchange across the education sector. Through this engagement, it seeks to create sustainable improvements in education systems.



How to implement Adaptive Learning Modules: guidance for teachers

The SmartEd - AI Integration in Schools project provides educators with a comprehensive set of resources for incorporating AI-driven adaptive learning into the classroom. The Adaptive Learning Modules (IO2) offer practical tools for creating personalized learning experiences that cater to diverse student needs, including those with special educational requirements. These modules include lesson plans, activity templates, and assessment strategies, allowing educators to integrate AI seamlessly into their teaching practices.

Through collaboration with subject teachers, the project identifies key areas where AI can enhance learning outcomes across different subjects. The modules are designed to support both special needs students and regular learners, providing tailored solutions that promote inclusivity and engagement. Teachers can customize these resources to align with their teaching styles, students' learning needs, and lesson contexts.

The toolkit will be available for download on the Erasmus Project Results Platform, school websites, and other relevant platforms. To ensure effective implementation, training sessions will be offered, allowing teachers and stakeholders to deepen their understanding of AI integration and apply the modules in real educational settings. These sessions aim to empower educators to create more personalized and inclusive learning environments.



MODULE 1

Interactive Learning Adventures To engage students in interactive learning experiences



Authors: Ausma Šereivienė
Vida Šarauskiene

Institution: Šiaulių Vinco Kudirkos progimnazija, Lithuania

1. Module Description

This module is designed to engage Ss in a dynamic and creative storytelling process using Artificial Intelligence (AI) tools. Through a series of interactive and playful activities, Ss explore how stories can be constructed, enhanced, and shared across different formats. By combining narrative elements, collaborative problem-solving, and digital tools, the module encourages imagination, digital fluency, and critical thinking in a supportive, multi-modal learning environment.

2. Content and activities of the module

Content

- AI-Powered Interactive Storytelling
 - Ss create original adventure, mystery, or sci-fi stories supported by AI tools such as ChatGPT and image generators, allowing them to build characters, settings, and branching narratives collaboratively.

- Story-Based Problem Solving
 - Through escape-room style challenges, mystery puzzles, and riddle-based scenarios, learners apply logic, deduction, and creative thinking to resolve conflicts and progress in the story.
- Multi-modal Story Creation
 - Stories are expressed using a variety of media—written texts, comic strips, audio recordings, and digital posters—helping Ss present their narratives in formats that match their strengths and preferences.
- Digital Visual Storytelling
 - Ss generate AI-enhanced visuals for characters, places, and events using tools like Craiyon or Bing Image Creator, and integrate these into comics, slides, or illustrated adventures.
- Collaborative Narrative Design
 - Working in teams, learners brainstorm, co-write, and co-present story elements, combining their ideas through structured planning, AI prompts, and group decision-making.
- Fictional Role Play and Dialogue Building
 - Ss embody original or remixed characters and engage in structured role play, writing or performing short scenes using AI for support in character creation and dialogue suggestions.
- Genre Exploration and Story Remixing
 - Classic tales, fairy tales, and myths are re-imagined through genre shifts—Ss turn fables into sci-fi or detective stories, exploring how setting and voice change narrative meaning.
- Emoji & Symbol-Based Literacy
 - Learners decode, design, and interpret visual storytelling using emojis and symbols, and then expand these into full narratives with the help of AI interpretation tools.
- Future Imagination and Speculative Writing
 - Ss write letters or diary entries from the future, envisioning changes in society, environment, or technology, and visualizing their futuristic ideas with AI-generated content.
- Reflection and Creative Expression
 - At the end of the module, Ss review their work, reflect on AI’s impact on storytelling, and celebrate their creations through sharing, exhibition, and recognition activities.

Activities

- AI Story Dice – Random Adventure Generator
 - Ss roll digital or printed dice to randomly select a character, setting, and object, then use AI (ChatGPT) to develop an imaginative story. This activity fosters spontaneous creativity, story structure awareness, and playful group work.
- Create Your Own AI-Enhanced Adventure Story
 - Working in teams, Ss build a branching story with a main character and mission, using AI to create visuals, text suggestions, and possible decision paths. They present their story using illustrations and recordings.
- Solve the Mystery – An AI Adventure Puzzle
 - Ss receive a mysterious narrative scenario and use AI tools to analyze clues, create and solve riddles, and uncover the ending of the story. This activity blends logical thinking with story-building and group problem-solving.
- Emoji to Story – Decoding Visual Narratives
 - Ss decode emoji sequences and turn them into full stories using AI tools like ChatGPT. They also create their own emoji-based stories, learning how visuals and symbols can carry narrative meaning.
- The Comic Twist – Building AI-Enhanced Story Strips
 - Using AI-generated visuals and dialogue support, Ss create comic strips that include characters, conflict, and resolution. They use platforms like Canva or Storyboard to assemble and present their work.
- Virtual Travel Quest – Explore & Imagine with AI
 - Ss explore real or fictional locations via Google Earth or 360° videos, then use AI to create a traveller’s log or story based on what they observed. They generate visuals and audio entries to bring their narrative to life.
- Letters from the Future – AI Time Capsule
 - Ss imagine life in the year 2125 and write letters, diary entries, or news reports from the future. They enhance their stories with AI-generated images and present their vision of the future creatively.
- Escape the Story – AI-Powered Narrative Challenge
 - In this interactive storytelling escape room, Ss work in teams to solve AI-generated riddles and puzzles that move the story forward. Each correct solution reveals a new twist or narrative direction.

- AI Story Remix – Rewriting the Classics
 - Ss take classic stories and use AI to remix them by changing the genre, setting, or ending. They enhance their version with visuals, audio, or digital book pages.
- AI-Enhanced Role Play – Character in Context
 - Ss create unique characters with the help of AI and participate in structured role play. They write or perform scenes, develop dialogue, and reflect on character goals and challenges in different scenarios.

3. Module Objectives

- a. To develop Ss' creativity and storytelling skills through diverse narrative formats and tools
- b. To enhance critical thinking and collaborative problem-solving through interactive and scenario-based tasks
- c. To introduce AI as a creative partner in storytelling, visual design, and writing support
- d. To foster communication and cooperation through group-based narrative creation
- e. To support inclusive, multi-modal learning by offering varied ways to express stories (text, audio, visuals, role play)

4. Module Learning Outcomes

- a. Ss will be able to co-create and share original stories using AI support for characters, settings, and plot ideas
- b. Ss will demonstrate their ability to plan, structure, and express stories through different formats (e.g., audio, comic, letter, role play)
- c. Ss will apply creative and critical thinking to solve story-based challenges and decisions
- d. Ss will collaborate in small groups to build narratives, solve problems, and give feedback
- e. Ss will reflect on how AI tools supported their creativity, writing, and communication throughout the module

5. Key Words

artificial Intelligence, storytelling, digital creativity, interactive narrative, problem-solving, collaboration, multi-modal learning, voice recording, visual communication, critical thinking

6. Methodology

Project-Based Learning (PBL), Collaborative Learning, Inquiry-Based Learning, Gamification, Differentiated Instruction, Scaffolded Learning, Technology-Enhanced Learning, Multi-modal Learning, Creative Writing Workshops, Role-Based Learning

Adaptive Learning Scenario

Warm-up & Energisers:

Description:

In this energizing starter activity called Plot Twist Generator, Ss use AI to create surprising story elements and explore how unexpected twists can make narratives more engaging. This prepares them for building branching story adventures later in the lesson.

Instructions:

1. We are storytellers—but with a twist (15 minutes)

- T introduces the activity:
 - *Today, we'll become storytellers—but with a twist. Let's ask AI to help us create something unpredictable!*
- In pairs, Ss go to [ChatGPT](#), [You.com/chat](#), or [HuggingChat](#) and use a prompt like:
 - *Give us a surprising plot twist for a story that starts with a robot lost in a forest.*
- Ss record their favourite result in their notebook or on [Padlet](#).
- Groups vote for the most exciting or funny twist shared.

2. Short reflection:

- *Why do unexpected events make a story more interesting?*

Teaching Materials:

- Internet-connected devices.
- [ChatGPT](#), [You.com/chat](#), or [HuggingChat](#).
- Example AI prompts.
- [Padlet](#) (optional).

Duration:

15 minutes

The main part:

Activity 1: Create Your Own AI-Enhanced Adventure Story

Description:

In this activity, Ss work in small groups to create a short adventure story using AI tools for inspiration, illustration, and storytelling support. They will develop a main character, define a mission, and build a simple interactive story with two decision paths. AI will be used to generate character images, setting visuals, plot elements, and text enhancements. This supports creativity, problem-solving, and multi-modal expression.

Instructions:

1. Story Planning – Build the Adventure Frame (10 minutes)

- T introduces the concept of adventure stories and asks guiding questions like:
 - *Who is the main character?*
 - *Where does the adventure take place?*
 - *What is their mission?*

Adaptation for special needs students:

T provides [a visual template and a word bank](#) with characters and places.

2. AI Character and Setting Creation (10 minutes)

- T briefly explains how AI can help turn imagination into images.
- T demonstrates an example by entering a prompt into [Craiyon](#) or [Bing Image Creator](#):
 - *A brave robot with a red scarf in a snowy mountain village.*
- T shows the generated image to Ss.
- T hands out 2 example prompts or displays them on the screen.
- In pairs or small groups, Ss choose or invent their main character (*e.g., flying cat, time traveller, shy dragon*).
- Ss choose or invent their setting (*e.g., magical cave, underwater city, haunted library*).
 - Ss write a simple prompt using this formula: “A [character adjective + character type] in a [setting adjective + place]”. Example: “*A friendly fox with a magic map in a glowing forest*”
 - Ss enter the prompt into one of the free AI image generators:
 - [Craiyon](#) (no login)
 - [Bing Image Creator](#) (needs Microsoft login)
 - [DALL·E via ChatGPT](#) (for schools that use ChatGPT)

- Each group of Ss generates and downloads or screenshots:
 - 1 image of their main character
 - 1 image of the setting

Adaptation for special needs students:

T provides [pre-written prompts](#) or helps type; voice-to-text can be used.

3. Story Start + Two Choices (10 minutes)

- Ss use AI tools such as [ChatGPT](#) or [Mistral.ai](#) to help write the opening paragraph of their adventure story.
- Ss describe:
 - What the main character is doing
 - Where the story takes place
 - What unexpected situation begins the adventure
- After setting the scene, Ss create two branching choices for what the character could do next:
 - e.g., *Follow the noise* or *Hide behind a tree*
- These choices will lead to different story paths in the next step.
- Ss may work:
 - Individually
 - In pairs or groups
 - Or use AI-generated suggestions to assist with writing

Adaptation for special needs students:

T provides [sentence starters or AI-generated suggestions](#); [text-to-speech support](#) available.

4. Expand the Branches (10 minutes)

- Ss take the two choices created in step 3 (e.g., *A: Follow the tunnel, B: Climb the mountain*).
- For each option, Ss write 1 short paragraph (3–5 sentences) explaining what happens next.
- Ss use [ChatGPT](#) with prompts like:
 - *What could happen next if the fox follows a mysterious tunnel in the forest?*
 - *Write a short story continuation for a robot that opens a locked door and finds a map.*
- If preferred, Ss use [Vocaroo](#) or other recording tools to narrate the story aloud.

Example

- *Choice A: The fox enters the dark tunnel. The tunnel was cold and damp. Suddenly, the ground beneath the fox cracked, and she slid down into a glowing cavern full of crystals. She heard whispers echoing from deep inside. Unsure whether they were friendly or not, she took a deep breath and followed the sound.*

- *Choice B: The fox climbs the mountain. The mountain path was steep, but the sky was clear. Near the top, she found an old telescope aimed at the stars. When she looked through it, she saw a message written in the sky: Find the Tree of Light. The message faded quickly, and she had to decide whether to keep climbing or go back down.*

Adaptation for special needs students:

T provides [sentence templates](#), lets Ss dictate to AI, or use simplified tools.

5. Share the Adventure (5 minutes)

- Ss present their finished story branches together with AI-generated visuals or audio recordings.
- Ss may:
 - Read their stories aloud to the class
 - Play [Vocaroo](#) recordings they created
 - Show character and setting images made with AI tools
- Optionally, Ss can upload their work to:
 - A [Padlet](#) wall
 - Microsoft Sway
 - Or present it in a classroom gallery walk
- This step encourages:
 - Peer feedback
 - Pride in creation
 - Development of digital communication and sharing skills

Adaptation for special needs students:

T assists with reading or uses [Natural Readers/Vocaroo](#) for audio versions.

Teaching Materials:

- Devices with internet access.
- AI tools:
 - [ChatGPT](#)
 - [Craiyon](#)
 - [Bing Image Creator](#)
 - [Padlet](#) (optional)
 - MS Sway (optional)
 - Text-to-speech: [Natural Readers](#), [Vocaroo](#)

Duration:

45 minutes

Activity 2: Solve the Mystery – An AI Adventure Puzzle

Description:

In this activity, Ss work in teams to solve an interactive mystery using clues created and enhanced by AI. Each team receives a short story scenario with a problem or conflict. They must analyze images, decode AI-generated messages, and ask AI tools for logical suggestions to figure out what happened or how to continue the story. This combines storytelling, critical thinking, and creative digital exploration.

Instructions:

1. Warm-up Context: Set the Scene (5 minutes)

- T introduces a short, mysterious story setup.
Example: *A backpack with glowing symbols is found in the forest. No one knows who it belongs to or how it got there. The forest path is blocked, and a riddle appears on a stone nearby.*
- T asks:
 - *What could the symbols mean?*
 - *Who might have left the backpack?*
 - *What would you do first?*

Adaptation for special needs students:

T provides visual [version of the scene](#) and 2–3 simple interpretation options (e.g., *It's from a robot / a traveler / an alien*).

2. AI Puzzle Building (15 minutes)

- Ss in groups:
 - Use [OpenArt.ai](#) or [Bing Image Creator](#) to generate images that *could belong* to the mystery (e.g., strange objects, environments, characters)
 - Use [ChatGPT](#) to ask questions like:
 - *What could glowing symbols mean in a fantasy story?*
 - *Give me a riddle with a magical answer*
- Teams either:
 - Choose a riddle generated by [ChatGPT](#) and solve it
 - Or create their own AI-enhanced riddle or message

- **Tools used:**
 - [OpenArt.ai](#) / [Craiyon](#) / [Bing Image Creator](#)
 - [ChatGPT](#)
 - [Padlet](#) or [Google Slides](#) for presenting clues

Adaptation for special needs students:

T offers:

- A [pre-written](#) riddle to solve
- [Sentence prompts](#) like: *We think it means...* / *The object looks like...*
- Option to draw or voice-record ideas instead of writing

3. Solving and Presenting the Mystery (20 minutes)

- Ss:
 - Organize their ideas into a mini mystery resolution (e.g., who left the backpack, what it's for, what happens next)
 - Present their findings using:
 - AI-generated images (e.g., map, object, character)
 - [ChatGPT](#)-created text: ending or twist
 - Optional: voice-over using [Vocaroo](#)
 - Post results to [Padlet](#), or present to class as a detective team

Example

- *The backpack belonged to an inventor who disappeared 50 years ago. The riddle led us to create a new map. We believe it shows the path to a secret lab under the mountain.*

Adaptation for special needs students:

- T assists in summarizing answers
- Ss present with simplified slides, recorded messages, or illustrations instead of live speaking

4. Create the Ending (10 minutes)

- Ss use AI tools to imagine and present a possible ending or twist to the story. They can write it, narrate it, or generate visuals/audio to express what happens next.
- Ss:
 - Discuss what the ending of the story could be
 - Use [ChatGPT](#) with prompts like:
 - “Suggest an ending to a story about a lost inventor’s backpack.”
 - “What could be the final challenge before the secret is revealed?”
 - Choose how to present:
 - Write a short paragraph (5–6 sentences)
 - Record an audio version on [Vocaroo](#)
 - Generate a final image using [Bing Image Creator](#) / [Craiyon](#) / [OpenArt](#)
 - Create a title slide or digital book cover with [Canva AI](#) (optional)

Adaptation for special needs students:

- T offers [AI-generated endings for selection](#)
- Ss fill-in sentence frames: “In the end, the _____ was _____ and the hero _____.”
- Ss may draw or use emojis/stickers to express the ending visually
- Audio narration instead of writing is encouraged

5. Share the Solution (5 minutes)

- Ss share their version of the solved mystery and final story ending with the class or online. They present their clues, visuals, and ending in a short “mission briefing” format.
- Ss present:
 - What the mystery was
 - What clues they followed or created
 - Their ending (read aloud or played via recording)
- Format options:
 - Gallery walk (printed slides or QR codes to audio/images)
 - [Padlet](#) wall
 - [Google Slides](#) / MS Sway
 - Live mini-presentations per group

Adaptation for special needs students:

- T [helps with summarizing key points](#)
- Ss may present using audio recording or short slide
- [Visual supports](#) (storyboard or sequencing cards) can be used to support retelling

Teaching Materials:

- Devices with internet.
- AI tools:
 - [ChatGPT](#)
 - [Bing Image Creator](#) / [Craiyon](#) / [OpenArt](#)
 - [Padlet](#) / [Google Slides](#) / MS Sway
 - [Vocaroo](#) / [Natural Readers](#)
 - [Pre-written riddle prompts or visual clue sets](#) (optional)

Duration:

55 minutes

Activity 3: Emoji to Story – Decoding Visual Narratives with AI

Description:

In this activity, Ss explore how stories can be told using emoji sequences and how artificial intelligence can help translate symbols into creative text. Ss collaboratively decode, re-imagine, and retell stories made from emojis with the support of AI tools. This promotes visual literacy, imaginative thinking, and story reconstruction, integrating both playfulness and critical analysis.

Instructions:

1. Warm-up: Emoji Puzzle (5 minutes)

- T displays a short sequence of emojis on the board (e.g., 🔄🔥🏠🔪👑) and asks:
 - *What might this story be about?*
 - *Who is the hero? What is the conflict?*
- Ss guess aloud and briefly justify their interpretation.

Adaptation for special needs students:

T presents 2–3 [possible interpretations with visuals](#) and reads them aloud. Ss choose or point to one they like.

2. Emoji Story Creation (10 minutes)

- In pairs, Ss:
 - Choose or generate an emoji sequence (5–7 emojis) using [Emoji Generator](#) or select from T’s printed cards
 - Imagine what story the emoji sequence could represent
 - Give the story a title

Adaptation for special needs students:

T provides [sample emoji sequences with sentence starters](#) like: “*This is about a ___ who goes to ___ and finds ___.*”

3. Storytelling with AI (15 minutes)

- Ss use [ChatGPT](#) to transform their emoji sequence into a story by entering prompts like:
 - “*Write a story based on these emojis: 🐱🌧️🏠👑👩⚡*”
 - “*Make a short adventure story using these emojis.*”
- Ss can edit or build on the AI’s result.
- Advanced groups may ask [ChatGPT](#) for a plot twist.

Adaptation for special needs students:

T helps dictate the prompt, or uses [pre-written AI results](#) for Ss to choose from.
Ss can use [Natural Readers](#) to listen to the story.

4. Visual or Audio Enhancement (15 minutes)

- Ss enhance their story using one or more of the following:
 - Create a comic scene with [Canva](#), [Pixton](#), or drawn by hand
 - Record the story aloud using [Vocaroo](#)
 - Generate an illustration using [Craiyon](#) or [Bing Image Creator](#)

Adaptation for special needs students:

- Ss [choose images or emojis](#) to match each part of the story
- Ss may record their story instead of writing

5. Sharing and Emoji Reflection (10 minutes)

- Groups present:
 - Their emoji sequence
 - Their AI-enhanced story (read aloud or played)
 - One thing they changed or liked in the AI version
- T facilitates short feedback or voting (e.g., most imaginative, funniest, most surprising).

Adaptation for special needs students:

- T or peer assists in presentation
- [Visual support via printed emoji cards or storyboard template](#)

Teaching Materials:

- Devices with internet access.
- AI tools:
 - [ChatGPT](#)
 - [Vocaroo](#)
 - [Craiyon](#) / [Bing Image Creator](#)
 - [Canva](#) / [Pixton](#)
- [Printable emoji cards](#)
- [Natural Readers](#) (text-to-speech)

Duration:

55 minutes

Activity 4: The Comic Twist – Building AI-Enhanced Story Strips

Description:

In this activity, Ss create short comic stories where visuals, characters, and dialogues are co-developed with the help of AI tools. Starting from a basic plot or theme, Ss generate illustrations and text using [ChatGPT](#), [Craiyon](#), and design platforms like [Canva](#). This activity emphasizes multi-modal storytelling, creative decision-making, and collaboration through visual narratives.

Instructions:

1. Warm-up: Comic Elements Brainstorm (5 minutes)

- T shows [1–2 comic strip](#) examples (printed or digital) and asks:
 - *What makes this story interesting or funny?*
 - *What do we see in each frame (character, action, speech)?*
- T lists key elements on the board: characters, setting, problem, solution, dialogue.

Adaptation for special needs students:

- T uses [illustrated posters or symbols](#) to explain elements.
- Ss may point instead of speaking.

2. Planning the Storyboard (10 minutes)

- In small groups (2–3 Ss), Ss:
 - Choose one of the comic themes (e.g., *Lost in a dream*, *Robot in school*, *Magical object gone wrong*)
 - Fill out [a simple 4-frame storyboard template](#):
 - Introduction
 - Conflict
 - Climax / Twist
 - Ending
- T may offer [printed templates](#) or digital Google Slides.

Adaptation for special needs students:

T provides [pre-filled comic prompts or visual templates with blanks](#) for key ideas.

3. Create Visuals with AI (15 minutes)

- Ss generate illustrations for each frame using:
 - [Craiyon](#) or [Bing Image Creator](#) (e.g., *A robot chasing a flying lunchbox*)
 - Optionally, use [Canva](#) templates or draw by hand
- Each group saves or prints their images.

Adaptation for special needs students:

- T provides [ready-made image choices or supports prompt writing](#).
- Ss may draw with support or use [stickers/symbol cards](#) to build scenes.

4. Write Dialogues and Narration (15 minutes)

- Ss use [ChatGPT](#) to help write short captions or speech bubbles:
 - “Write a funny conversation between a time traveller and a cat.”
 - “Suggest one-sentence narration for a comic strip about a dragon in school.”
- They add the text into their comic using [Canva](#), [Storyboard That](#) or [printable speech bubbles](#).

Adaptation for special needs students:

- T offers sentence starters like:
 - “I need your help!”
 - “What is THAT?”
 - “Let’s run!”
- Ss can dictate lines for T to write or record lines orally.

5. Present and Reflect (15 minutes)

- Groups present their comic strips:
 - Briefly explain the story (or just read it aloud)
 - Say what twist or creative idea they liked most

Adaptation for special needs students:

T or peer assists in presenting; comics can be shared silently or as recordings. Icons/emojis can be used to show favorite parts.

Teaching Materials:

- Devices with internet.
- AI tools:
 - [ChatGPT](#)
 - [Craiyon](#) / [Bing Image Creator](#)
 - [Canva](#) / [Storyboard That](#)
 - [Padlet](#) (optional)
- Printable: [storyboard templates](#), [speech bubbles](#), [comic examples](#).
- Text-to-speech tools ([Natural Readers](#), [Vocaroo](#)).

Duration:

60 minutes

Activity 5: Virtual Travel Quest – Explore & Imagine with AI

Description:

In this activity, Ss go on a virtual adventure to a real or imagined destination. Using tools like [Google Earth](#), [YouTube 360° videos](#), and AI-powered storytelling, they explore environments, invent narratives, and co-create travel logs or missions. The goal is to connect observation, imagination, and storytelling, supported by visuals and AI prompts.

Instructions:

1. Warm-up: Where in the World? (5 minutes)

- T shows a blurred or zoomed-in image of a real-world location using [Google Earth](#) or a photo. Ss guess:
 - *Where could this be?*
 - *What do you notice?*
 - *What kind of story could take place here?*
- T introduces the theme: “*You are AI-powered explorers. Today, you’ll travel and create a story inspired by what you find.*”

Adaptation for special needs students:

- T provides [multiple-choice answers or uses visual support](#) (e.g., maps, icons).
- Ss point or select an answer.

2. Virtual Exploration (15 minutes)

- In small groups, Ss:
 - Explore a virtual destination using [Google Earth](#), [YouTube 360° travel videos](#), or a curated [Padlet](#) with locations
 - Observe and note 3–4 things they see (e.g., mountains, temples, rivers, animals)
- T prompts Ss to answer:
 - *Who might live here?*
 - *What mystery or adventure could begin here?*

Adaptation for special needs students:

- Ss work with peers or use [printed picture clues](#) to describe features.
- T can pause and explain videos step-by-step.

3. Story Prompting with AI (15 minutes)

- Ss use [ChatGPT](#) to turn their destination into a short story:
 - “Write a story about a girl who finds a glowing stone in the Amazon rainforest.”
 - “Give me an adventure story based on a desert with hidden caves.”
- They may generate a beginning or ask for a problem to solve during their journey.

Adaptation for special needs students:

- T provides [pre-written prompts](#) or uses [speech-to-text](#).
- Ss may choose from [2–3 AI-generated openings](#) and continue from there.

4. Add Visuals or Audio (15 minutes)

- Ss enhance their stories using:
 - [Vocaroo](#) to record a narrated travel diary
 - [Craiyon](#), [Bing Image Creator](#), or [Canva](#) to illustrate the landscape or main event
 - Optional: build a slide with text + image + recording

Adaptation for special needs students:

- Ss may describe their scene orally, draw it, or use stickers/pictures instead of writing.
- T can help record voice-over.

5. Sharing the Journey (15 minutes)

- Groups present:
 - Where they “travelled.”
 - What their adventure was about
 - One AI-generated detail they liked
- Stories can be shared:
 - On a virtual travel wall ([Padlet](#))
 - As short presentations
 - Via printed slides in a classroom “exhibit.”

Adaptation for special needs students:

- Ss present using voice recording, simplified visuals, or with peer support.
- T assists with narration or summarizing.

Teaching Materials:

- Devices with internet.
- AI tools:
 - [Google Earth](#)
 - [YouTube 360° videos](#)
 - [ChatGPT](#)
 - [Craiyon / Bing Image Creator](#)
 - [Canva](#)
 - [Vocaroo](#)
 - [Padlet](#) (optional)
- [Printable maps, sentence starters, and visual icons.](#)

Duration:

65 minutes

Activity 6: AI Story Dice – Random Adventure Generator

Description:

In this activity, Ss roll AI-powered story dice to receive randomized prompts: characters, locations, and objects. They collaborate to build unpredictable and fun stories based on the random combinations. With the help of [ChatGPT](#), AI image generators, and creative tools, Ss develop branching narratives and surprising twists. The process strengthens story-building logic, decision-making, and team creativity.

Instructions:

1. Warm-up: Roll and Guess (5 minutes)

- T rolls (or shows) a sample combination:
 - 🦱 Superhero | 🏜️ Desert | 🎒 Backpack
- Ss guess what story could be built from these. T explains that today’s stories will be completely random—and that’s the fun.

Adaptation for special needs students:

T uses [printed dice cards or simplified picture sets](#). Ss pick cards instead of rolling.

2. Story Dice Generator (10 minutes)

- Ss work in teams and roll digital dice (e.g., from [RandomWordGenerator.com](#), custom Google Slides, or [T’s printable cards](#)) to get:
 - 1 character (e.g., detective, fox, alien)
 - 1 setting (e.g., haunted house, underwater city)
 - 1 object (e.g., ancient key, exploding cookie)
- Ss record the combo and give their story a working title.

Adaptation for special needs students:

- T offers 2–3 [pre-selected options for each category with visual icons](#).
- Ss may choose from symbols, pictures, or images.

3. Story Development with AI (15 minutes)

- Ss use [ChatGPT](#) to begin shaping their story based on the dice results:
 - Prompt example: *“Write a short story about a time-travelling dog who finds a crystal in the jungle.”*
 - Groups can ask [ChatGPT](#) to generate the first paragraph or suggest a twist.
- Teams read the AI’s suggestion and either build on it or remix it.

Adaptation for special needs students:

- T provides [prompt templates](#) and helps enter ideas into AI.
- Ss can draw instead of write, or dictate orally.

4. Create Twist Ending or Visuals (15 minutes)

- Teams use:
 - [ChatGPT](#) to invent a final twist
 - [Craiyon](#) or [Bing Image Creator](#) to illustrate their most important scene
 - Optional: record audio with [Vocaroo](#)
- Examples:
 - *“In the end, the fox was not a fox at all—it was a secret agent robot!”*
 - *“The haunted castle was actually a theme park for dragons.”*

Adaptation for special needs students:

- T assists with visual creation or provides [AI-generated images to choose from](#).
- Ss may explain the twist verbally or using icons.

5. Present Your Random Tale (10 minutes)

- Each team presents:
 - Their 3 rolled elements
 - Their AI-enhanced story
 - What was the weirdest or funniest part?
- Stories can be posted to a class [Padlet](#) or displayed in a visual “story grid.”

Adaptation for special needs students:

- Presentations can be done with visuals only, or played as audio.
- T or peer summarizes the story aloud if needed.

Teaching Materials:

- Devices with internet.
- AI tools:
 - [ChatGPT](#)
 - [Craiyon](#) / [Bing Image Creator](#)
 - [Vocaroo](#)
 - [Padlet](#) (optional)
- [Printable story dice](#) (character, setting, object).

Duration:

55 minutes

Activity 7: Letters from the Future – AI Time Capsule

Description:

In this activity, Ss imagine themselves in the year 2125 and create letters, diary entries, or news reports from the future. Using AI tools for idea generation, world-building, and visual illustration, they explore how technology, environment, or society might change. The activity supports narrative writing, future thinking, and creative speculation, enhanced by multi-modal expression.

Instructions:

1. Warm-up: Future Brainstorm (5 minutes)

- T asks:
 - *What do you think life will be like in 100 years?*
 - *How might people live, learn, travel, or communicate?*
- Ss give ideas. T writes them on the board and shows [1-2 AI-generated images of futuristic cities](#) (from [Bing](#) or [Craiyon](#)).

Adaptation for special needs students:

T shows images and gives options: *“Do you think people will live... in floating cities / underground / on Mars?”*

2. Build a Future World (15 minutes)

- Ss work in pairs or groups to describe their imagined future place using:
 - [ChatGPT](#):
 - *“Describe a city in the year 2125.”*
 - *“What will schools be like in the future?”*
 - [Bing Image Creator](#) / [Craiyon](#) to generate visuals of their world (e.g., *a sky train city with holograms*)
- Each group saves 1-2 images and writes key facts (e.g., climate, buildings, inventions).

Adaptation for special needs students:

- T supports prompt writing or [provides printed future world prompts to choose from](#).
- Ss may select [images](#) and match them to simple descriptions.

3. Write or Dictate a Future Letter (15 minutes)

- Ss imagine they are living in 2125 and write:
 - A letter to their past self
 - A diary entry about one day in the future
 - A breaking news story (e.g., *“Robot president bans homework!”*)
- They use [ChatGPT](#) to help write, edit, or expand their text.

Adaptation for special needs students:

- Ss use fill-in-the-blank templates: "Dear 2025 me, today I ___ in my flying ___ and ate ___ for lunch."
- Ss may record the message using [Vocaroo](#).

4. Time Capsule Assembly (15 minutes)

- Ss combine their story and visuals in:
 - A slide ([Google Slides](#) / [Canva](#))
 - A [Padlet](#) entry
 - [A printable Time Capsule page with sections: Image / Letter / Headline](#)
- Optional: create an audio-narrated version using [Natural Readers](#) or [Vocaroo](#).

Adaptation for special needs students:

Ss may work on visual-only entries (image + one sentence), or combine stickers/icons to complete their capsule.

5. Sharing the Time Capsule (10 minutes)

- Ss share their capsule in one of these ways:
 - Present aloud or via recording
 - Add to a class "Time Capsule Wall"
 - Reflect: "What part of your future world would you actually want to happen?"

Adaptation for special needs students:

Ss present with visuals or audio only. T or peer can read written parts aloud.

Teaching Materials:

- Devices with internet.
- AI tools:
 - [ChatGPT](#)
 - [Craiyon](#) / [Bing Image Creator](#)
 - [Vocaroo](#) / [Natural Readers](#)
 - [Padlet](#) / [Google Slides](#) / [Canva](#)
- [Printable letter templates / Time Capsule sheets](#)

Duration:

60 minutes

Activity 8: Escape the Story – AI-Powered Narrative Challenge

Description:

In this activity, Ss participate in a story-based escape scenario where they must solve riddles, decode clues, and make choices to “escape” a mysterious situation. Each decision affects the story's path, with help from AI tools to guide thinking, generate hints, and enrich the narrative. This activity blends interactive storytelling, critical thinking, and collaborative problem solving.

Instructions:

1. Warm-up: Trapped in a Tale (5 minutes)

- T presents a dramatic scenario to the whole class: *“You wake up in an old, locked library. The books whisper clues, but the exit is hidden behind a secret passage.”*
- T asks:
 - *What’s the first thing you’d do?*
 - *What clues might be hidden in the room?*

Adaptation for special needs students:

T uses [a visual map of the room](#). Ss choose from image cards: “Check the bookshelf / Open the window / Talk to the owl.”

2. Group Puzzle Intro (10 minutes)

- Ss work in teams of 3–4. Each group is given:
 - [A setting \(e.g., underwater base, jungle temple, moon station\)](#)
 - [A mystery object or riddle to solve \(e.g., coded message, strange map\)](#)
- T provides the first riddle or problem (can be AI-generated using [ChatGPT](#)):
 - “I have hands but no arms, a face but no eyes. What am I?” (Answer: a clock)

Adaptation for special needs students:

- T provides [multiple-choice answers or physical clue cards](#).
- Ss may point or explain orally with support.

3. Navigate the AI-Enhanced Story (15 minutes)

- Once the puzzle is solved, T reveals the next story part (e.g., *“The clock slides open to reveal a glowing key”*).

- Ss then:
 - Ask [ChatGPT](#) for a next-step challenge or event
 - Generate a twist with prompts like:
 - “What obstacle might appear in a hidden lab?”
 - “Give me a riddle to unlock a magical door.”
- Groups continue through 2–3 steps, supported by AI-generated clues and plot branches.

Adaptation for special needs students:

- T offers [pre-written choices](#). Ss may act out actions or draw decisions.
- Peer support or guided AI use provided.

4. Create a Group “Escape Log” (15 minutes)

- Ss create a short log of their story path:
 - What was their scenario?
 - What clues or riddles did they solve?
 - How did they escape?
- They can present it as:
 - A visual map
 - A comic strip
 - An audio log (using [Vocaroo](#))
 - A story card sequence (with images + captions)

Adaptation for special needs students:

- Ss use icons or sentence starters: “First we found... Then we used... In the end...”
- T can write the log based on Ss’ oral explanation.

5. Share and Reflect (15 minutes)

- Groups present how they escaped:
 - What clues were tricky?
 - What role did AI play?
 - Would they change any part of their path?
- T highlights creative decisions and collaboration.

Adaptation for special needs students:

Ss present with peer help, audio recording, or simplified visual board.

Teaching Materials:

- Devices with internet.
- AI tools:
 - [ChatGPT](#) (for generating riddles/clues)
 - [Vocaroo](#)
 - [Canva](#) (for visual logs)
 - [Google Slides](#) / [Padlet](#) (optional)
- [Printable maps, riddles, and clue cards.](#)
- [Picture-based step trackers.](#)

Duration:

60 minutes

Activity 9: AI Story Remix – Rewriting the Classics

Description:

In this activity, Ss take a familiar story (fairy tale, myth, or fable) and creatively remix it using AI tools. By changing the setting, genre, character traits, or ending, Ss explore how narratives can shift. This activity builds narrative flexibility, creative rewriting skills, and introduces genre transformation, supported by AI-generated text and visuals.

Instructions:

1. Warm-up: What If...? (5 minutes)

- T presents a classic story (e.g., *Little Red Riding Hood*) and asks:
 - What if this took place in space?
 - What if the wolf were a misunderstood robot?
- Ss brainstorm alternate versions of well-known tales.

Adaptation for special needs students:

- [T shows images representing alternative settings \(castle / spaceship / jungle\).](#)
- Ss choose using visuals.

2. Choose a Story and Remix Focus (10 minutes)

- Ss work in pairs/groups. They:
 - Choose [a known tale](#)
 - Select what to change:
 - Setting (e.g., desert instead of forest)
 - Genre (e.g., turn a fable into sci-fi)
 - Character twist (hero becomes villain)
 - Ending

Adaptation for special needs students:

- T provides simplified story summaries (use [Diffit](#)) and icons.
- Ss choose change options via cards or tablet interface.

3. Rewrite the Story with AI (15 minutes)

- Ss use [ChatGPT](#) to:
 - Re-tell the story with their chosen changes
 - Generate a new scene or ending
 - Add unexpected elements (e.g., “*Rewrite The Three Little Pigs as a detective story.*”)

Adaptation for special needs students:

- T provides [sentence starters or partial AI outputs](#).
- Ss may dictate the story or select from multiple AI-generated variants.

4. Create Visual or Audio Version (15 minutes)

- Ss use:
 - [Craiyon](#) / [Bing Image Creator](#) to visualize their remixed world
 - [Canva](#) or Google Slides to design a story cover or scene
 - [Vocaroo](#) to record their new version as a short radio play

Adaptation for special needs students:

- T offers AI-generated visuals and audio support.
- Ss can combine images with symbols or stickers.

5. Share the Remix (15 minutes)

- Ss present:
 - What original story they remixed
 - What they changed and why
 - One image or line from their new story
- Stories can be shared in a “Remix Gallery” (virtual or printed).

Adaptation for special needs students:

- T or peer presents on behalf of Ss if needed.
- Ss point to story visuals or play recordings.

Teaching Materials:

- Devices with internet.
- AI tools:
 - [ChatGPT](#)
 - [Craiyon](#) / [Bing Image Creator](#)
 - [Canva](#) / [Google Slides](#)
 - [Vocaroo](#)
 - [Diffit](#)
- [Printable classic story cards](#).
- [Remix option cards](#).
- Text-to-speech ([Natural Readers](#)).

Duration:

60 minutes

Activity 10: AI-Enhanced Role Play – Character in Context

Description:

In this activity, Ss step into a fictional character’s shoes and develop their identity, voice, and choices using AI tools. AI helps them shape character backstories, dialogue examples, and decisions. This strengthens empathy, narrative thinking, and interactive storytelling.

Instructions:

1. Warm-up: Who Would You Be? (5 minutes)

- T asks:
 - *If you could be a character in any story or movie, who would you be?*
 - *What would you say or do differently?*
- T introduces the idea: *Today you’ll become a story character and act in a scene you shape!*

Adaptation for special needs students:

T uses illustrated character cards. Ss choose by pointing.

2. Generate a Character with AI (10 minutes)

- Ss use [ChatGPT](#) to create a fictional character:
 - Prompt: *“Create a shy dragon who wants to be a singer.”*
 - AI gives: name, personality, goal, obstacle
- Ss may also use [Character.ai](#) or character cards for inspiration.

Adaptation for special needs students:

- T provides [printed characters with brief AI-generated bios](#).
- Ss match traits with pictures.

3. Create a Role-Play Scenario (15 minutes)

- Groups choose or create a story scenario:
 - A mission (e.g., *rescue the map, win the race, break the curse*)
 - Ss write 3–5 lines of dialogue per character using AI for support
 - Practice acting out the scene

Adaptation for special needs students:

- T offers [pre-written dialogue choices or sentence frames](#).
- Ss may act using emotion cards or sound recordings.

4. Perform or Record the Scene (20 minutes)

- Ss perform live or record their scene using:
 - [Vocaroo](#) (audio drama)
 - [Canva](#) (comic format)
 - [Google Slides](#) (story slides with dialogue)

Adaptation for special needs students:

- Ss may record one line each.
- T or peer can voice characters if needed.

5. Character Reflection (10 minutes)

- T asks:
 - *What did your character learn or change?*
 - *What would they do next?*
- Ss write 2–3 sentence reflections or use emojis to show feelings.

Adaptation for special needs students:

T provides [visual prompts](#) (happy / sad / brave / afraid) and [short sentence starters](#).

Teaching Materials:

- Devices with internet
- AI tools:
 - [ChatGPT](#) / [Character.ai](#)
 - [Canva](#) / [Google Slides](#)
 - [Vocaroo](#)
- [Character trait cards](#)
- [Dialogue frames](#)
- [Audio or emotion icons](#)

Duration:

60 minutes

Closure: The Grand Finale: Show, Reflect & Celebrate

Description:

In this final stage of the module, Ss reflect on their learning experience across the 10 AI-powered storytelling activities. They revisit their favourite creations, discuss what skills they developed, and express how AI supported their creativity and thinking. Closure promotes metacognition, self-evaluation, and positive reinforcement of digital storytelling as a meaningful tool.

Instructions:

1. AI Story Gallery & Sharing (20 minutes)

- T sets up a virtual or physical gallery ([Padlet](#) wall, printed comics, shared slides).
- Ss walk around or browse peers' creations and choose 1 they admire.
- T asks:
 - *What stood out to you in someone else's story?*
 - *What kind of story did you most enjoy making?*

2. Reflection – Me as a Storyteller (20 minutes)

- Ss complete a short self-reflection form (on [paper](#) or [digitally](#)), answering:
 - *One thing I learned*
 - *One tool I liked*
 - *One story I'm proud of*
- Optional: Ss record a voice message using [Vocaroo](#) or add a sticker to a feedback wall.

3. Recognition & Farewell (10 minutes)

- T awards [certificates](#) or [digital badges](#) (e.g., “Creative Thinker”, “AI Explorer”, “Story Wizard”).
- Short group feedback or “high five” celebration.
- Optional class photo or creation of a class “Storyteller Wall” to commemorate their AI journey

Teaching Materials:

- Devices with internet.
- [Padlet](#) / Slides / Printed visuals.
- Self-reflection [forms](#) or [checklists](#).
- [Vocaroo](#) / [Natural Readers](#).
- [Certificates](#) or [badges](#).
- [Optional: stickers, emoji charts](#).

Duration:

50 minutes

MODULE 2

Adaptive Math Mastery To support students in mastering mathematical concepts through adaptive learning techniques



Authors: Angela Franchino

Institution: Università Popolare delle Gravine Ioniche, Italy

1. Module Description

In this innovative module, students will engage with mathematics in a dynamic, real-world context. From exploring ratios in cooking and currency conversion in travel to applying geometry in architecture and finance in digital safety, learners will uncover how math shapes the world around them. Blending adaptive learning technologies, personalized problem-solving tasks, and creative thinking, students will strengthen their math identity while developing practical numeracy skills. Through role-play, simulations, and collaborative design, students will connect core mathematical concepts to fields like medicine, technology, architecture, meteorology, and web design. All activities support inclusive practices, ensuring that every learner can access, explore, and thrive in their mathematical journey

2. Content and activities of the module

Content

- Adaptive Math Tools & AI Learning Platforms
 - Students (Ss) use AI-guided learning platforms to receive individualized math support and interactive problem-solving pathways tailored to their level and pace.
- Real-World Math Simulations
 - Ss take on roles such as web designers, meteorologists, medtech engineers, or self-driving car programmers to explore practical math applications.
- Multimodal Math Representations
 - Learners engage with visual, textual, and interactive formats—graphs, blueprints, financial dashboards, and digital design tools—to grasp abstract concepts concretely.
- Math and Identity Building
 - Activities like “If I Were a Math Concept...” encourage Ss to link personal strengths to mathematical thinking, reinforcing confidence and math self-concept.
- Interdisciplinary Math Applications
 - From travel planning to medical diagnostics, Ss apply math to interdisciplinary domains, understanding its universal value.

Activities

- Warm-Up: “If I Were a Math Concept...”
 - Ss create identity posters linking personal traits to a math concept (e.g., “I am a Circle because I’m constant and balanced”), using AI tools to visualize their poster.
- Ratio Rangers
 - Ss solve real-world ratio-based missions involving cooking, fashion design, budgeting, or map scaling, with AI tools supporting adaptive challenge levels.
- Equation Expedition
 - Ss step into the shoes of historical mathematicians to solve algebraic problems in sports, robotics, or app development through problem-solving adventures.
- AI Autopilots
 - Using geometry and algebra, Ss simulate a self-driving car’s navigation and obstacle avoidance tasks via interactive coordinate plane challenges.

- **Blueprint Builders**
 - Ss explore architecture and engineering challenges by creating scale blueprints of dream rooms, using digital tools to explore area, perimeter, and proportion.
- **MedTech Mavericks**
 - Learners explore math in medical contexts—calculating medication doses, interpreting diagnostic percentages, and exploring wearable health tech through data analysis.
- **Forecast Force**
 - Ss act as junior meteorologists, using data sets and radar charts to analyze temperature trends, probabilities of weather events, and make predictions.
- **Cyber Savers**
 - Ss tackle digital finance scenarios by using percentages, fractions, and encryption logic to protect digital accounts and build financial literacy.
- **Web Builders**
 - Ss apply proportions, geometry, and percentages to plan a website layout, organizing data and optimizing design with real-world constraints.
- **AI Across Borders**
 - Ss plan educational trips across Europe, converting currencies, calculating distances, and creating detailed travel budgets, simulating real-world international logistics.

3. Module Objectives

- a. Engage students in real-world, adaptive mathematics learning experiences through the integration of artificial intelligence, personalized approaches, and interdisciplinary applications.
- b. Support diverse learners by providing inclusive, differentiated mathematics instruction tailored to individual strengths and learning styles.
- c. Foster critical problem-solving skills by simulating real-life roles in fields such as medicine, design, finance, and technology, utilizing mathematical reasoning.
- d. Cultivate a strong mathematical identity and appreciation for mathematics as a creative, practical, and global problem-solving tool.
- e. Encourage collaboration, reflection, and communication through digital projects, discussions, and opportunities for peer-to-peer feedback.

4. Module Learning Outcomes

- a. Demonstrate mathematical understanding by applying ratios, algebra, geometry, and percentages to authentic, real-world problems.
- b. Create digital representations of math concepts, such as architectural blueprints, travel budgets, or identity posters, using adaptive technology tools.
- c. Analyze data, evaluate outcomes, and make informed decisions using mathematical reasoning across diverse domains such as medicine, weather, and finance.
- d. Reflect on and articulate their personal relationship with math, strengthening their math confidence and engagement.
- e. Collaborate with peers to build, critique, and improve mathematical solutions in project-based and inquiry-driven activities.

5. Key Words

mathematics, adaptive learning, algebra, geometry, finance, ratios, percentages, web design, data analysis, inclusion, AI tools, creative math, interdisciplinary learning, digital literacy, personalization, collaboration, real-world math

6. Methodology

Inquiry-Based Learning, Adaptive and Differentiated Instruction, Project-Based Learning (PBL), Role-Based Simulation, Technology-Enhanced Learning, Visual and Kinesthetic Learning, Gamified Learning Paths, Student Voice and Choice

Adaptive Learning Scenario

Warm-up & Energizers:

Description

This is an introduction to the module. It is an engaging and interactive classroom energizer activity to help students (Ss) discover how math is everywhere and to explore the lives and contributions of famous mathematicians – both historical and modern – with a focus on real-world relevance.

Ss will work in pairs or small groups to ask and answer questions about famous mathematicians and their mathematical ideas, especially those that are still used in everyday life today. Ss will explore how historical and modern mathematicians shaped the world we live in, connecting mathematical concepts to real-world uses and modern technology, including AI.

Instructions:

1. Famous Mathematicians (60 minutes)

- T introduces the “Famous Mathematicians” activity and prepares cards or slips with the names of famous mathematicians.
 - On the back of each card, T writes a summary of their major idea or contribution and an example of how it’s still used today.

1.Pythagoras	He's known for the Pythagorean Theorem ($a^2 + b^2 = c^2$), which is used in construction, architecture, and navigation. For example, when building a ramp, this theorem helps calculate the correct angle and length.
2.Ada Lovelace	She is considered the first computer programmer. She wrote the first algorithm intended for a machine. Her ideas are the foundation for modern computer programming, which we use in apps, phones, and digital systems.
3.Euclid	He's known as the Father of Geometry. His book Elements organized geometry into a system still taught today. Geometry is crucial in engineering, architecture, design, and even video game graphics.
4.Leonhard Euler	Euler contributed to graph theory and introduced the Euler circuit, which helps solve problems like efficient delivery routes or utility connections.
5.Hypatia of Alexandria	She was one of the first known female mathematicians and taught about algebra and geometry. She inspired generations of women in science and her work influenced philosophy and math education.
6.Srinivasa Ramanujan	He discovered complex patterns in numbers and contributed to number theory, which is important in cryptography and internet security.
7.Katherine Johnson	She calculated flight paths for NASA missions, including Apollo 11, using advanced math. Her calculations helped land a man on the Moon!
8.Alan Turing	He helped crack the Enigma code during WWII and is a pioneer of modern computing. His work saved millions of lives and laid the groundwork for AI and cybersecurity.

- Ss work in pairs.
- One student takes a card and holds it so that only the partner can see the mathematician's name.
- The student with the card asks questions (e.g., "Is he/she famous for geometry?" "Is it connected to numbers?").
- The partner answers and tries to guess what the mathematician is famous for.
- When the guess is correct, read the short description and example on the back of the card together.
- If needed, T can go over the list of possible questions with the Ss:
 - Do you know what [name] discovered or invented?
 - How do you think [concept] is used in real life?
 - What is ... famous for, and how is his/her work still used today?
 - What did ... discover, and why is it important today?
 - What did ... contribute to mathematics and technology?
 - What's one of ...'s main contributions?
 - Why is ... important in the history of mathematics?
 - What was ... known for?
 - What real-life problems did ... solve?
- **Class Sharing (20 minutes)**
 - Groups share the most surprising or interesting discovery they learned about.
 - Ss reflect on how these ideas are still present in our lives.

Teaching Materials

- <https://youtu.be/5Q1kAR1EJ10>
- 🌐 Alan Turing: The Father of Modern Computing
- <https://youtu.be/zyLqrWrM5uA>
- 🌐 Meet Ada Lovelace: The Inspiring Journey of the First Computer Programmer

Assessment:

Formative assessment: Ss give stars and write comments

Duration:

80 minutes

The main part:

Activity 1: "If I Were a Math Concept..."

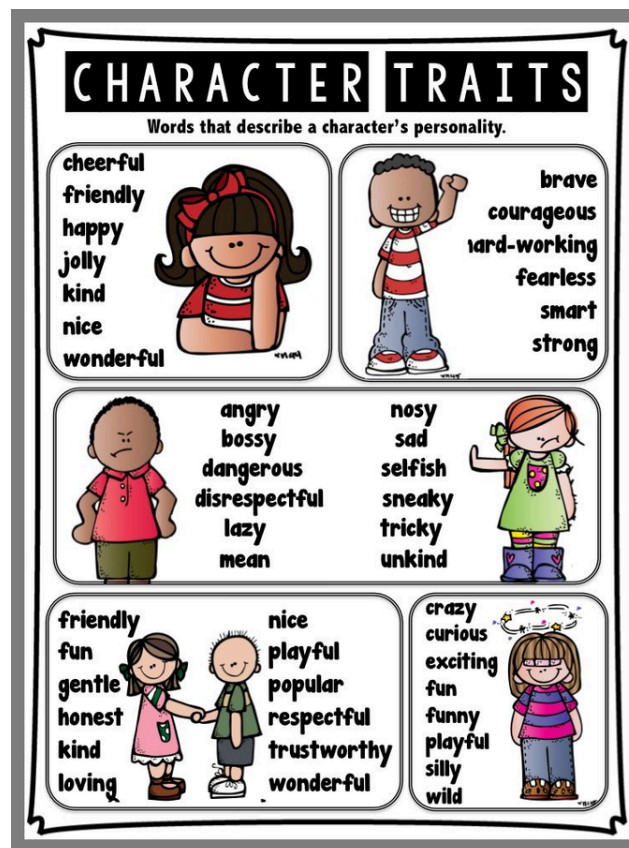
Description:

Students will imagine themselves as a math concept, shape, or symbol that reflects their personality, strengths, or problem-solving style. They will use AI tools and adaptive platforms to create a "Math Identity" poster, linking personal traits to mathematical thinking.

Instructions:

1. More than numbers (20 minutes)

- T leads a discussion:
 - *Math is more than numbers – it's a way of thinking, creating, solving, and exploring!*
- T introduces different math elements: shapes (triangle, fractal, spiral), symbols (π , infinity, =), concepts (patterns, symmetry, balance, logic). **⊕ Symbols in Geometry**
- Show visuals using a digital slideshow.
- Ss brainstorm:
 - What math ideas represent their personality or thinking style?
 - Example traits and matches:
 - Curious? Fractals or puzzles
 - Logical? Equations or balance
 - Creative? Patterns or spirals
 - Resilient? Infinity or recurring decimals



$+$ plus	$-$ minus	\times times	\div division	$=$ equal to	\neq not equal to	\approx approximately equal	\sim approximately equal
\cong congruent to	$>$ greater than	$<$ less than	\pm plus or minus	∞ infinity	\geq greater than or equal to	\leq less than or equal to	\Leftrightarrow equivalent
\Rightarrow implies	\emptyset empty set	\triangle triangle	\forall for all	π pi	$\{ \}$ braces	$[]$ brackets	$()$ parentheses
Σ sum of	\int integral	$\sqrt{\quad}$ square root	\perp perpendicular	\parallel parallel	Φ golden ratio	$\&$ ampersand	$\%$ percent

Adaptation for special needs students:

- T shows images and symbols with traits:
 - e.g., “Infinity = Endless curiosity”
“Triangle = Strong and balanced”
- Ss choose traits from a list:
"I feel like: [Creative] [Organized] [Precise] [Curious]"

2. Describe Personal Identity Through Math (30 minutes)

- Ss connect personal traits with mathematical symbols/concepts [Khan Academy](#)
- Ss reflect using [ChatGPT](#) or similar tools with prompts: [Mathletics](#)
 - “If I were a math concept, what could I be? I’m very [insert trait].
 - “I love the color [blue], and I’m very [thoughtful]. What math idea fits me?”
 - “Can you explain how [spirals] match someone who is [curious]?”

Adaptation for special needs students:

- T provides sentence starters:
 - *I am like a _____ because I am _____.*
 - *My favorite number/shape is _____ because it feels like me.*
- Ss may speak instead of writing, using voice typing or TTS.

3. Design Math Identity Poster (60 minutes)

- Ss generate AI images of their chosen math object (e.g., a swirling golden spiral, a bold pi symbol with a galaxy background).
- Ss write a short acrostic poem or description using their concept word (e.g., "PI", "LOGIC", "CIRCLE").
 - Use [ChatGPT](#) for poetry prompts or descriptive support.
 - Example acrostic for "PI":
Perfectly endless, no start or end
In every circle, a constant friend
- Ss record their poem using [Vocaroo](#) or [Luvvoice](#) and upload it or generate a QR code.
- Ss add favorite numbers, colors, and traits in creative designs.
- Posters are uploaded to [Padlet](#).

Adaptation for special needs students:

- T provides visual prompts, sentence frames, and audio feedback.
- Ss use shapes, emojis, or diagrams to represent themselves.
- TTS tools read directions aloud.

4. Reflection and Peer Feedback (10 minutes)

- Ss leave a short written/audio comment on the Padlet wall:
 - *I learned that I'm like a _____ in math because I _____.*
- Ss rate each other's posters with a 1–5 star checklist based on creativity, math connection, and clarity.

Teaching Materials:

- Digital Tools:
 - [ChatGPT](#): brainstorming, acrostic/poetry help
 - [Canva AI](#) / [DALL·E](#): poster design and image generation
 - [Vocaroo](#) / [Luvvoice](#): audio recordings / TTS support
 - [Padlet](#): display and feedback
- Adaptive Math Platform (e.g., [Khan Academy](#), [Mathletics](#)): optional prep/practice for traits/concepts

Formative assessment

- Checklist
 - Students (or peers) can just give stars (1–5) for each:
★ Creativity ★ Math Connection ★ Clarity of Writing/Expression ★ Effort

Duration:

120 minutes

Activity 2: Ratio Rangers: Mastering Ratios in the Real World

Description:

Students embark on a real-world problem-solving mission as “Ratio Rangers,” using ratios and proportions to tackle adaptive challenges in areas like cooking, design, travel, and budgeting. The lesson includes personalized activities, accommodations for diverse learners, and AI-powered learning tools for adaptive support.

Instructions:

1. Welcome to Ratio Rangers HQ! (30 minutes)

- T introduces Ss to the concept of ratios and proportions through an interactive storytelling video: <https://youtu.be/3sVi2JhHvWM>
- Ss form “Ranger Teams” in pairs or small groups.
- Math Integration:
 - <https://youtu.be/SRE-Q8nhG3A>
 - <https://create.kahoot.it/details/ratios-proportions-solving-proportions-math/67abf811-dfac-44f2-b6ca-9be06af78007>
 - <https://youtu.be/bIKmw0aTmYc>
 - https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-ratio-proportion/cc-7th-write-and-solve-proportions/e/proportions_1

Adaptation for special needs students:

Ss work in peer-supported teams.

2. Ratios in the Real World: Food Edition (20 minutes)

- Scenario: “You’re running a pop-up pizza stand at a school fair!”
 - Ss receive a Pizza Recipe Card (with amounts for 2 people). https://drive.google.com/file/d/1h_23ufOdt06iow1IfyiO82xP_CfwYKig/view?usp=drive_link
 - Task: Scale the ingredients for 6, 10, or 25 servings using proportional reasoning.
 - Bonus: Create your own pizza topping ratio using “Pizza Fraction Tiles.”

Math Focus:

- Solve adaptive proportion problems using multiplication or cross-products.
- Calculate cost per serving using unit rates.

Adaptation for special needs students:

T provides pre-filled ratio tables.

<https://15worksheets.com/wp-content/uploads/2024/10/6-16.png>

3. Design Challenge: Ratio in Fashion (30 minutes)

- Design a new school uniform using ratio-based color patterns.
 - Example: 3:2:1 ratio of red, white, and navy.
 - Use [Canva](#) to sketch the design.
 - Upload to Padlet with a description of the color ratios used.
- **Math Integration:**
 - Convert part-to-part ratios to percentages.
 - Interpret and create circle graphs to represent ratio-based design.

Adaptation for special needs students:

- T provides color templates and ratio guides.
- T uses MyMapAI, [The Easiest Way to Create Diagrams | MyMap AI](#) to group and visualize parts of the design.
- T practices creating ratios with hands-on color strips or drag-and-drop blocks.

4. Travel Budget Challenge: Real-World Proportions (40 minutes)

- Scenario: *You're planning a class trip to another city.*
 - Each group receives a travel scenario (destination, budget, group size).
- Tasks:
 - Calculate travel costs per student using unit pricing.
 - Adjust meal budgets using 3:2:1 breakfast:lunch: dinner cost ratios.
 - Convert distances using map scale ratios.
- Use a budgeting app or Google Sheets to organize costs.

Adaptation for special needs students:

- T uses AI tools (e.g., [MathGPT](#) or Google AI Tutor) to break down calculations step-by-step and works in peer-supported teams.
- T uses simplified data sets and pre-set budget templates.

Teaching Materials:

- Laptops/tablets with internet access
- Ratio Recipe Cards, Design Templates
- Budget Scenario Handouts
- Tools:
 - [Canva](#), [Gamma](#) (for video and design)
 - [Padlet](#) (for project uploads)
 - [Khan Academy](#), [IXL](#), [Buzzmath](#)
 - [Kahoot!](#), [Blooket](#)

Ratio Rangers Quiz – Real-World Ratios

Part A: Quick Check (Multiple Choice)

1. A pizza recipe calls for **2 cups of flour for 2 people**. How many cups of flour are needed for **10 people**?
 - a) 5 cups
 - b) 8 cups
 - c) 10 cups
 - d) 20 cups
2. The ratio of red to blue in a uniform design is **3:2**. What percentage of the design is blue?
 - a) 20%
 - b) 30%
 - c) 40%
 - d) 60%
3. If a class trip budget allows **Euro 120 for 4 students**, what is the cost **per student**?
 - a) euro 20
 - b) euro 25
 - c) euro 30
 - d) euro 40

Part B: Short Answer

1. A smoothie recipe uses **2 bananas for every 3 cups of milk**.
 - How many bananas are needed for **9 cups of milk**?
2. You are designing a shirt with a ratio of **2:1:1 (green: white: black)**.
 - Write the ratio as percentages.

Part C: Real-World Ranger Mission

1. You're planning snacks for a group trip. One pack of granola bars feeds **2 students**.
 - If you have **18 students**, how many packs do you need?
2. A map shows that **1 cm = 5 km**. If the distance between two cities is **8 cm on the map**, what is the real distance?

✓ Scoring Guide (10 points)

- Q1–3 = 1 point each (3 total)
- Q4–5 = 2 points each (4 total)
- Q6–7 = 1.5 points each (3 total)

Answer Key & Solutions

Part A: Multiple Choice

1. **2 cups for 2 people → 10 people = $2 \times 5 = 10$ cups → c) 10 cups**
2. Ratio red:blue = 3:2 → total parts = 3 + 2 = 5 → blue = $2/5 = 40\%$ → **c) 40%**
3. euro $120 \div 4 =$ **euro 30 per a student → c) euro 30**

Part B: Short Answer

1. Ratio = 2 bananas : 3 cups of milk.
 - For 9 cups of milk → ($9 \div 3 = 3$).
 - Multiply bananas by 3 → ($2 \times 3 = 6$).**Answer: 6 bananas.**
2. Ratio = 2:1:1 → total parts = 2 + 1 + 1 = 4.
 - Green = $2/4 = 50\%$
 - White = $1/4 = 25\%$
 - Black = $1/4 = 25\%$**Answer: 50% green, 25% white, 25% black.**

Part C: Real-World Ranger Mission

1. 1 pack feeds 2 students. For 18 students: ($18 \div 2 = 9$).
Answer: 9 packs needed.
2. Scale = 1 cm = 5 km. Distance = 8 cm.
($8 \times 5 = 40$) km.
Answer: 40 km.

Scoring Guide

- Q1-3 = 1 pt each
 - Q4-5 = 2 pts each
 - Q6-7 = 1.5 pts each
- Total = 10 pts**

Duration:

120 minutes

Activity 3: Equation Expedition – Solve Like a Genius!

Description:

Students dive into a dynamic, real-world algebra mission where they become legendary mathematicians (like Ada Lovelace, Srinivasa Ramanujan, or Katherine Johnson) and use algebraic equations to solve real-life problems in fields such as architecture, robotics, sports analytics, and app development. Through personalized, adaptive tasks and AI tools, Ss experience how algebra unlocks the world’s logic.

Instructions:

1. Welcome to Genius HQ! (30 minutes)

- T introduces the concept of linear equations and expressions through an animated video: <https://youtu.be/z-39mxlg94A>
- Ss select a “Genius Avatar” based on famous mathematicians (cards or AI quiz).
⊕ AI Avatar Generator - Create Videos with 50+ and Custom AI Avatars
- Group up in teams of 2–3 as “Equation Expeditions.”
- **Math Integration:**
<https://youtu.be/wArrEhGbmQ0>

Adaptation for special needs students:

- T uses AI avatars that read instructions aloud.
- Offer equation templates with visual equation models.

2. Sports Strategy Challenge: Algebra on the Field (30 minutes)

- Ss imagine to be sports analysts calculating player salaries, performance ratios, and game scores using equations.”
- They must create and solve salary cap problems:
 - *If a team can spend 10 million Euros on 4 players, and 3 players earn 2 million Euros each, how much for player 4?*
- Calculate shooting averages and project future performance using patterns.

Adaptation for special needs students:

T uses drag-and-drop equation matching and sentence frames to build equations.

3. Algebra in Architecture: Build the Future (30 minutes)

- Ss are helping design a skate park. They must calculate
 - ramp slopes
 - material quantities
 - layout dimensions using algebraic equations.
- Ss use given dimensions to create an equation for ramp height vs. length.
- Solve for unknowns:
 - *If the base is 12 m, how tall must the ramp be to meet code?*
- They may sketch your design on [GeoGebra](#) or [Desmos](#) and include equations in the annotations.

Math Focus:

- Formulate and solve one-step and two-step linear equations.
- Understand variables in a geometric context.

Adaptation for special needs students:

- T utilizes scaffolded steps and equation-solving tiles for visual learners.
- GeoGebra app guided mode with built-in hints.

4. Algebra in App Design: Code the Future (30 minutes)

- Ss have been hired to model a fitness app that tracks running distance over time.
- Ss must create an equation like
 - $d = 8t$ (distance = 8 km/hour \times time)
 - Use a spreadsheet to input different times and graph the results.

Math Focus:

- Use equations to model real-world relationships.
- Interpret variables and units of measure.

Adaptation for special needs students:

- T provides pre-filled tables for Ss and offer equation-to-graph matching games for reinforcement

Teaching Materials:

- Devices with internet access
- Genius Avatar Cards
- Handouts (Skatepark, App, Sports)
- Tools:
 - GeoGebra, [Canva](#), Desmos, Google Sheets
 - Padlet (for showcase)
- Khan Academy, Buzzmath, MathGPT, AI Tutors

Assessment

“Equation Expedition Checkpoint”

Type: Formative & Performance-Based Assessment

Part 1 – Quick Quiz (10 minutes)

Format: Multiple choice + short answer

#	Question	Skills Assessed	Points
1	What is the variable in the equation ($5x + 3 = 18$)?	Identify variables	1
2	Solve for (x): ($3x = 9$)	One-step equation	1
3	Solve for (x): ($2x + 4 = 10$)	Two-step equation	1
4	If ($d = 8t$), how far can you run in 3 hours?	Substitute & compute	1
5	If a team has €10M and 3 players earn €2M each, how much can player 4 earn?	Real-world problem solving	2

Total: 6 points

Adaptation for special needs students:

- T uses read-aloud or digital quiz with drag-and-drop answers.

Part 2 – Mission Log (20 minutes)

Format: Group task reflection sheet

Each team completes a short reflection with visuals or notes:

1. Which real-world challenge did you enjoy most?
2. Show one equation you created and solved.
3. What does your variable represent?
4. How does algebra help solve real-life problems (sports, design, or apps)?

Scoring (out of 4 points):

| Criteria | 0 | 1 | 2 | 3 | 4 |

| :-- | :-- | :-- | :-- | :-- |

| Equation accuracy | - | - | correct | | |

| Real-world connection | - | - | clear example | | |

| Explanation | - | - | understandable | | |

| Creativity/presentation | - | - | neat/engaging | | |

Adaptation for special needs students:

- T allows oral responses, voice recording, or AI-avatar presentation.

Part 3 – Showcase (Optional Extension)

Platform: Padlet or Google Slides

Students post:

- Screenshot of their graph/equation (GeoGebra, Desmos, or Sheets)
- 1-2 sentences explaining what their equation models

Teacher checks for:

- Correct use of variables
- Equation fits the context
- Basic interpretation of results

Adaptation for special needs students:

- T provides a template slide or checklist with visuals.

Total Score: 10 points

- Quiz: 6 points
- Mission Log: 4 points
- (Showcase optional bonus +1 creativity point)

Teacher Note

- Use this as an exit ticket or checkpoint assessment after Activity 3.
- Keep the focus on understanding what equations mean, not just solving mechanically.
- Celebrate “Genius of the Day” for effort, creativity, or teamwork.

Quick Quiz – Answers (6 points)

1. What is the variable in the equation ($5x + 3 = 18$)?
Answer: (x). (1 pt)
2. Solve for (x): ($3x = 9$)
Work: divide both sides by 3 \rightarrow ($x = 9/3 = 3$).
Answer: (x = 3). (1 pt)
3. Solve for (x): ($2x + 4 = 10$)
Work: subtract 4 \rightarrow ($2x = 6$). Divide by 2 \rightarrow ($x = 3$).
Answer: (x = 3). (1 pt)
4. If ($d = 8t$), how far can you run in 3 hours?
Substitute ($t=3$): ($d = 8 \times 3 = 24$).
Answer: 24 km. (1 pt)
5. If a team has €10M and 3 players earn €2M each, how much can player 4 earn?
Work: total paid to first 3 = ($3 \times 2 = 6$)M. Remaining for player 4 = ($10 - 6 = 4$)M.
Answer: €4,000,000 (4M). (2 pts)

Mission Log – Model / Sample Responses (useful for scoring/exemplars)

Below are short sample answers students could give for each theme (one equation + short explanation). Use these as model responses.

Sports Strategy (sample)

- Equation created: ($S = 10 - 3 \cdot 2$) (S = salary left for player 4, in millions).
- Solution: ($S = 10 - 6 = 4$) \rightarrow player 4 earns €4M.
- Variable meaning: (S) = salary for player 4 in millions of euros.
- Why algebra helps: It quickly computes the remaining budget when some salaries are known.

Architecture – Skatepark (sample)

- Context & equation: For a ramp with run (base) (r) and rise (height) (h) with a fixed slope ratio ($h:r = 1:4$), the equation is ($h = \frac{1}{4}r$).
- Given: base ($r = 12$) m \rightarrow substitute: ($h = \frac{1}{4} \times 12 = 3$) m.
Answer (example): ($h = 3$) m.
- Variable meaning: (h) is the ramp height (meters).
- Note for teacher: If your local code uses a different slope (e.g., 1:6), plug that ratio in. For slope 1:6, ($h = \frac{1}{6} \times 12 = 2$) m.

App Design – Fitness App (sample)

- Equation: ($d = 8t$) (distance in km, (t) in hours).
- Table (example):
 - ($t=0.5$) \rightarrow ($d=4$) km
 - ($t=1$) \rightarrow ($d=8$) km
 - ($t=1.5$) \rightarrow ($d=12$) km
 - ($t=2$) \rightarrow ($d=16$) km
- Graph interpretation: The graph is a straight line through the origin; slope = 8 km/hr (speed).
- Variable meaning: (t) = time (hours), (d) = distance (km).

Rubric / Scoring guide – how to award Mission Log points (4 points total)

Use the rubric you set – here’s a concrete mapping teachers can use to grade each team’s Mission Log (total 4 points):

- 4 pts (Excellent): Equation is correct and solved correctly; variable clearly defined; explanation ties algebra to the real context; presentation neat/evidence of work (graph/table) included.
- 3 pts (Good): Equation correct and solved; variable defined; explanation OK but brief; minor presentation issues.
- 2 pts (Partial): Equation attempted but small mistake; partial explanation of variables or context.
- 1 pt (Minimal): Equation incorrect or unsolved; little/no explanation.
- 0 pts (No evidence): No equation or explanation provided.

(You can adapt to allow oral presentation/voice recording as evidence for special needs learners.)

Optional Showcase – teacher checklist

When viewing the Padlet/slide, check for:

- Equation present and matches the context (yes/no).
- Calculation/solution correct (yes/no).
- Brief interpretation of result (1–2 sentences).
- Visual evidence (graph, GeoGebra screenshot, spreadsheet) included.

Duration:

150 minutes

Activity 4: AI Autopilots: Driving with Distance, Speed & Geometry

Description:

Ss take on the role of AI Autopilots, where they simulate the thinking process of a self-driving car. Using key math concepts like distance-time-speed relationships, angles, and coordinates, they solve adaptive, real-world challenges involving navigation, obstacle detection, and route optimization. Activities are hands-on, tech-integrated, and scaffolded for diverse learners with personalized pathways and AI learning support.

Instructions:

1. Welcome to Autopilot HQ! (20 minutes)

- T introduces Ss to real-world math used in AI and autonomous vehicles through a short animated explainer:
 - [Video: How Math Powers Self-Driving Cars](#)
- Ss form “Autopilot Teams” in pairs or small groups.
- Engage with introductory math integrations:
 - [Khan Academy – Distance, Speed, Time](#)
 - [Desmos Activity – Driving on a Grid](#)
 - [🌐 If self-driving cars are the answer, what's the question? - Kahoot! Quiz](#)

Adaptation for special needs students:

- T uses graphing calculators with audio support. and provide line-matching games to reinforce linear concepts.

2. Distance-Time Challenge: Traffic Test Track (30minutes)

- Ss are programming an autonomous car to complete a city route with stoplights and speed zones.”
- Ss receive a city route map with:
 - Distances between checkpoints
 - Speed limits for each zone
- Use the formula **speed = distance ÷ time** to calculate travel time per zone
- Create a distance-time graph showing the full journey
- Identify areas where the car must accelerate or decelerate

Math Focus:

- Speed-distance-time calculations
- Reading and plotting graphs
- Unit conversions (km/h to m/s, optional)

Adaptation for special needs students:

- T provides fill-in-the-blank tables
- Audio read-aloud of instructions
- Ss use colored blocks or car cut-outs to model the route

3. Route Mapping: Coordinate Navigation (30 minutes)

- Ss have to help their self-driving car navigate a 2D map using coordinate points.
- Plot car movements on a grid using ordered pairs (e.g., A(3,4) to B(7,8))
- Use directional movement: up/down/left/right and diagonals
- Calculate distances between two points using the distance formula (basic: count units; advanced: Pythagorean Theorem for challenge groups)

Math Integration:

- Coordinate geometry
- Straight-line distance between points
- Introduction to vectors (extension)

Adaptation for special needs students:

- T uses labelled coordinate planes
- Provide movement cards with arrows
- Allow tactile movement with physical pieces on a printed grid

4. Sensor Angle Simulation: Obstacle Avoidance (30 minutes)

- Ss receive the instructions: “Your car detects obstacles using sensors that rotate in a circular pattern.”
- They have to:
 - Calculate detection angle ranges (e.g., 90°, 180°, 360° sweeps)
 - Identify blind spots and safe zones using basic geometry
 - Simulate path redirection using reflection angles and turning degrees

- **Math Focus:**
 - Angle measurement
 - Rotation and reflection in geometry
 - Estimating paths using degrees and direction

Adaptation for special needs students:

- T provides protractors and printable wheels for hands-on learning
- Use sensor simulation games/apps
- Step-by-step guides with icons

5. Wrap-Up and Reflection: Autopilot Awards (10 minutes)

Peer Feedback Session:

- Teams upload their journey maps and graphs to Padlet
- Leave star ratings for creativity, accuracy, and problem-solving
- Ask one math-based question per post (e.g., “How did you calculate the car’s turn angle?”)
- Teams respond with short video or audio reflections explaining their mathematical thinking

Teaching Materials:

- Laptops/tablets with internet
- Printed grid maps, calculators, and graph paper
- Tools:
 - Desmos, GeoGebra
 - [Canva](#), Padlet
 - Scratch (optional animation)
 - Kahoot!, [Blooket](#)

Assessment

AI Autopilots: Driving with Distance, Speed & Geometry – Assessment Sheet

Student Name: _____

Team Name: _____

Date: _____

1. Distance-Time Challenge: Traffic Test Track

Task: Calculate travel times and plot distance-time graph.

Task	Met <input checked="" type="checkbox"/> / Partially <input type="checkbox"/> / Not <input checked="" type="checkbox"/>	Notes
Correctly calculated travel times for all zones		
Distance-time graph is accurate		
Identified zones to accelerate/decelerate		

Quick Reflection:

What part of the travel calculation was easiest? _____

What part was hardest? _____

2. Route Mapping: Coordinate Navigation

Task: Plot your car on a 2D map and calculate distances.

Task	Met <input checked="" type="checkbox"/> / Partially <input type="checkbox"/> / Not <input checked="" type="checkbox"/>	Notes
Correctly plotted all coordinate points		
Calculated distances accurately (units)		
Used directional movement correctly		

Quick Reflection:

Which route segment was tricky and why? _____

3. Sensor Angle Simulation: Obstacle Avoidance

Task: Calculate angles, detect blind spots, and redirect the path.

Task	Met <input checked="" type="checkbox"/> / Partially <input type="checkbox"/> / Not <input type="checkbox"/>	Notes
Calculated sensor detection angles correctly		
Identified blind spots & safe zones		
Simulated path redirection accurately		

Quick Reflection:

How did you decide the car's turning angles? _____

4. Participation & Teamwork

Task	Met <input checked="" type="checkbox"/> / Partially <input type="checkbox"/> / Not <input type="checkbox"/>	Notes
Contributed ideas to team		
Helped teammates understand math steps		
Engaged in peer feedback (Padlet)		

Overall Reflection

One sentence: My favorite math skill I used today was _____

One sentence: One thing I would improve next time is _____

Teacher Comments: _____

AI Autopilots: – Model Solutions & Answer Key

Below are ready-to-use *model* answers, worked calculations, and a simple rubric; you may replace the numbers with the values your class actually used.

1) Distance–Time Challenge: Traffic Test Track – Example scenario & solutions

Scenario used (example):

- Zone 1 (clear road): distance = 12 km, speed = 60 km/h.
- Zone 2 (slow traffic): distance = 6 km, speed = 30 km/h.
- Zone 3 (open highway): distance = 12 km, speed = 80 km/h.

Calculations (step-by-step)

Time = distance ÷ speed.

- Zone 1:
($t_1 = \frac{12}{60} = 0.2$) hours.
Convert to minutes: ($0.2 \times 60 = 12$) minutes.
- Zone 2:
($t_2 = \frac{6}{30} = 0.2$) hours.
($0.2 \times 60 = 12$) minutes.
- Zone 3:
($t_3 = \frac{12}{80} = 0.15$) hours.
($0.15 \times 60 = 9$) minutes.
- Total time: ($12 + 12 + 9 = 33$) minutes.
(Or in hours: ($0.2 + 0.2 + 0.15 = 0.55$) hours = ($0.55 \times 60 = 33$) minutes.)

Distance–time graph (how to check)

Plot cumulative distance (y) vs elapsed time (x). Using the example:

- At (t=0) min → (d=0) km.
- After Zone1: (t=12) min → (d=12) km.
- After Zone2: (t=24) min → (d=18) km.
- After Zone3 (end): (t=33) min → (d=30) km.

Graph should be piecewise linear: slope = speed on each segment (steeper slope = higher speed).

Identified zones to accelerate/decelerate

- Decelerate at zone 2 (60→30 km/h).
- Accelerate leaving zone 2 into zone 3 (30→80 km/h).

2) Route Mapping: Coordinate Navigation — Example & solutions

Example coordinates (student may use different):

- Point A (start) = ((0,0))
- Point B = ((8,6))
- Point C (destination) = ((14,6))

Distance calculations (step-by-step)

Use distance formula ($\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$).

- AB: $((8-0)^2 + (6-0)^2 = 8^2 + 6^2 = 64 + 36 = 100)$.
($\sqrt{100} = 10$) units.
- BC: $((14-8)^2 + (6-6)^2 = 6^2 + 0^2 = 36)$.
($\sqrt{36} = 6$) units.
- Total path distance: $(10 + 6 = 16)$ units.

Units: state whether units are meters, km, etc. (Example assumes abstract units — convert to meters if given.)

Directional movement

- AB direction: vector ((8,6)). Angle from +x = ($\arctan2(6,8) \approx 36.87^\circ$).
- BC direction: vector ((6,0)) → due east (0°).

(Students who used Manhattan/axis moves should show sum of horizontal and vertical steps and label units.)

3) Sensor Angle Simulation: Obstacle Avoidance — Example & solutions

Example vehicle state:

- Car at point (C=(14,6)), heading east (0°).
- Obstacle at (O=(16,8)).

Determine angle to obstacle (step-by-step)

Vector from car to obstacle: ($\vec{v} = O - C = (16-14,;8-6) = (2,;2)$).

Angle relative to heading (east):

- ($\theta = \arctan2(2,2) = \arctan(1) = 45^\circ$.)

Interpretation: If the front sensor detection cone is $\pm 30^\circ$ from heading, an object at (45°) is outside the front detection cone → in a blind-spot.

Identified blind spots & safe zones

- Blind spot example: region between the front sensor limit (30°) and side sensors (if side sensors only cover $\pm 90^\circ$ but with gaps). The obstacle at 45° is in that blind region.
- Safe zone: anything inside $\pm 30^\circ$ in front and within sensor range.

Simulated path redirection (example)


Because the obstacle is at 45° (right-front), the autopilot should:


1. Slow down (reduce speed).
2. Turn heading toward 30° (reduce angle from 45° to within front sensor) or plan a lateral avoidance: compute a turning angle of $+60^\circ$ briefly, then straighten – a sample plan:
 - New heading = $(0^\circ + 60^\circ = 60^\circ)$ to swing wider around the obstacle, then return to east (0°) after clearing.
3. Compute avoidance clearance: choose lateral offset sufficient for obstacle radius + safety margin (e.g., $1.5 \times$ obstacle width). (Teachers can require numeric radius calculations if students had obstacle size.)

Simple geometric check

If steering radius (R) and turn angle (ϕ) are given, arc length ($s = R\phi$) (in radians). Students can compute the required (R) to make the maneuver smooth.

4) Participation & Teamwork – Model marks & examples

Suggested marking examples for a strong team (tick = Met 

- Contributed ideas to team – Met  (notes: suggested sensor angles and drawing).
- Helped teammates understand math steps – Met  (notes: explained distance formula).
- Engaged in peer feedback (Padlet) – Met  (notes: posted screenshot + comment).

Quick Reflection – Example student answers




- What part was easiest? Converting hours to minutes ($0.2 \text{ h} \rightarrow 12 \text{ min}$).
- What part was hardest? Interpreting the angle from the sensor cone and choosing a safe turning radius.
- Which route segment was tricky? The diagonal AB is required because it is required $\sqrt{(8^2+6^2)}$.
- How did you decide turning angles? I calculated the angle to the obstacle (45°), then chose a 60° avoidance turn so we could clear the obstacle with a safety margin.
- Favorite skill used: Using the distance formula to calculate exact route distances.
- One thing to improve next time: Label my graph axes and units more clearly.

Teacher Comments – Example

Clear calculations and correct graphs. Next time, ask students to show sensor ranges numerically (e.g., sensor reach = 5 m) so that turning radii can be computed. Good teamwork and Padlet engagement.

Marking rubric (quick)

For each Task row (Met / Partially / Not):

- Met  = correct method + correct result + units + clear reasoning.
- Partially  = correct approach but arithmetic error or missing units/labels.
- Not  = incorrect method or no evidence of work.

Suggested point weighting (per task):

- Distance–Time Challenge: 6 points (calculations 4, graph 1, zone id 1)
- Route Mapping: 5 points (plotting 2, distances 2, directions 1)
- Sensor Angle Simulation: 5 points (angle calc 2, blind spot id 1, redirection plan 2)
- Participation & Teamwork: 4 points (peer help 2, ideas 1, Padlet 1)
- Total: 20 points (adjustable to your scale).

Duration:

150 minutes



Activity 5: Blueprint Builders: Designing with Scale & Geometry


Description:

Ss step into the role of young architects and engineers in "Blueprint Builders," where they explore the real-world applications of geometry, measurement, and scale in construction and engineering. Through adaptive math challenges, collaborative design tasks, and interactive tools like Canva, Ss gain hands-on experience in solving practical building problems using mathematics.

Instructions:

1. Welcome to Blueprint HQ! (20 minutes)

- T introduces Ss to the concept of geometry and measurement in engineering using a dynamic video tour of famous structures.
 -  Watch:  Architecture and Maths
- Ss form “Build Teams” of 3–4 members.
- Kick-off [Kahoot](#):

 Architecture Math and Measurement - Kahoot! Quiz

- Additional Math Integration:
 - [Khan Academy – Area, Volume, & Surface Area](#)
 - [IXL – Real-world Area & Volume Problems](#)

Adaptation for special needs students:

- Teacher provides a visual glossary of key geometric terms.
- Uses hands-on 3D shapes for tactile learners. ...

2. Measure It to Build It: Foundation Challenge (30 minutes)

- Ss are building the foundation of a tiny house.”
- Use a scale drawing (1cm:1m) to design a tiny home layout.
- Calculate the area and perimeter of each room (e.g., bedroom, kitchen, bathroom).
- Use [Canva](#) to create a labeled blueprint.
 - Math Focus:
- Apply area and perimeter formulas (rectangles, triangles).
- Convert between units using scale.

Adaptation for special needs students:

T provides pre-drawn room shapes to calculate area and offers a scale converter tool or visual aids.

3. Volume Challenge: Materials Calculator (30 minutes)

- Students are estimating the materials needed for building concrete columns and beams.”
- Calculate **volume** of 3D shapes (cylinders, rectangular prisms).
- Use formulas to estimate how much concrete is needed for beams, pillars, and walls.
- Compare different options for materials (eco-friendly vs. traditional).

Math Focus:

- Volume of rectangular prisms and cylinders.
- Unit conversions (cm^3 to m^3).

Adaptation for special needs students:

T provides formula charts and labeled diagrams and uses interactive 3D modeling tools or drag-and-drop manipulatives.

4. Roof Pitch & Slope Design (30 minutes)

- Students design a pitched roof that meets building code angles.”
- Calculate roof pitch using rise/run ratio and angle.
- Use a digital protractor and [Canva](#) to sketch and label a roof diagram.
- Discuss the structural impact of steep vs. flat slopes.

Math Focus:

- Apply the **slope formula** in geometric design.
- Convert slope to angles using trigonometry basics (optional extension)

Adaptation for special needs students:

T offers visual slope cards and angle sliders.

T allows physical models using cardboard or straws for hands-on learners.

5. Showcase & Feedback: Build Expo (10 minutes)

- Ss upload blueprints, calculations, and material summaries to Padlet.
- Ss leave comments and ratings based on:
 - Accuracy of calculations
 - Creativity of design
 - Realism of construction ideas

6. Reflection:

- Each team records a 1-minute explanation (audio/video) of their key math decisions (e.g., “Why did you choose this roof pitch?”).

Adaptation for special needs students:

T monitors work in peer-supported teams.

Teaching Materials:

- Laptops/tablets with internet access
- Graph paper, rulers, calculators
- Sample scale drawings
- Tools:
 - [Canva](#) (for digital blueprints)
 - Padlet (project uploads)
 - Khan Academy, IXL, GeoGebra
 - [Kahoot!](#), MyMapAI (visualization)

Assessment

- the Student Version: Blueprint Builders – Designing with Scale & Geometry (Worksheet).
- Blueprint Builders: Teacher Answer Sheet

Blueprint Builders: Designing with Scale & Geometry

Student Worksheet

Name: _____ Team Name: _____

Date: _____

- **Activity 1: Welcome to Blueprint HQ (20 min)**
 - Watch: [Engineering Wonders Video](#)
Play Kahoot: [Architecture, Math & Measurement Quiz](#)
 - Reflection:
 - Write one thing you learned about how engineers use geometry

● **Activity 2: Measure It to Build It – Foundation Challenge (30 min)**

- You are designing a tiny home layout. Use the scale 1 cm : 1 m.
- Draw your design on graph paper or Canva and complete the table below.

Room	Drawing Size (cm)	Real Size (m)	Formula	Area (m ²)	Perimeter (m)
Bedroom	___ × ___	___ × ___	$A = l \times w$	_____	_____
Kitchen	___ × ___	___ × ___	$A = l \times w$	_____	_____
Bathroom	___ × ___	___ × ___	$A = l \times w$	_____	_____

Scale reminder: 1 cm on drawing = 1 m in real life.

Challenge Questions:

1. Which room uses the most space? _____
2. What is the total floor area of your house? _____ m²

● **Activity 3: Volume Challenge – Materials Calculator (30 min)**

- You are calculating how much concrete is needed for the columns and beams.

Structure	Dimensions	Formula	Calculation	Volume (m ³)
Beam	L = ___ m, W = ___ m, H = ___ m	$V = l \times w \times h$	_____	_____
Column	r = ___ m, h = ___ m	$V = \pi r^2 h$	_____	_____
Wall	L = ___ m, H = ___ m, T = ___ m	$V = l \times w \times h$	_____	_____

- Extension: Add your three volumes for the total concrete needed:
Total = _____ m³
- Eco-Materials Comparison

Option	Pros	Cons
Traditional Concrete		
Eco-Friendly Concrete		

● **Activity 4: Roof Pitch & Slope Design (30 min)**

- Design your roof slope. Use a rise/run ratio and sketch it in Canva.

Measurement	Formula	Calculation	Answer
Rise = ___ m, Run = ___ m	Slope = Rise ÷ Run	_____	_____
Angle	$\theta = \arctan(\text{rise/run})$	_____	_____ °
Rafter Length	$\sqrt{(\text{rise}^2 + \text{run}^2)}$	_____	_____ m

● **Discussion:**

Why did you choose this roof pitch?

● **Activity 5: Build Expo (10 min)**

- Upload your group's blueprint, material calculations, and notes to Padlet.
- View at least two other teams' designs and leave a positive + helpful comment.

● Peer Feedback :

- Something I liked: _____
- Something to improve: _____

● **Activity 6: Reflection (1 min recording)**

- Record a short audio or video reflection as a team.
- Answer at least two of these questions:

● Reflection Prompts:

- Why did you choose your roof pitch or layout?
- How did you use math to make your design realistic?
- What did you learn about using area, volume, or scale?

● Formula Reference Sheet

Concept	Formula	Example
Rectangle Area	$A = l \times w$	$4 \times 3 = 12 \text{ m}^2$
Perimeter	$P = 2(l + w)$	$2(4 + 3) = 14 \text{ m}$
Volume (Rectangular Prism)	$V = l \times w \times h$	$4 \times 0.3 \times 0.5 = 0.6 \text{ m}^3$
Volume (Cylinder)	$V = \pi r^2 h$	$3.14 \times (0.2^2) \times 3 = 0.38 \text{ m}^3$
Slope	Rise \div Run	$1.5 \div 3 = 0.5$
Roof Angle	$\theta = \arctan(\text{rise/run})$	$\arctan(0.5) = 26.6^\circ$

- Self-Check Rubric (Student)

Criteria	1	2	3	4	5
Correct formulas used					
All units labeled correctly					
Blueprint accurate to scale					
Creativity of design					
Reflection completed					

Total: /25

Blueprint Builders: Teacher Answer Sheet

- Subject: Mathematics (Geometry & Measurement)
- Focus: Scale, Area, Perimeter, Volume, and Slope
- Grade Level: Middle School / Lower Secondary
- Tools:
 - Canva, Padlet,
 - Khan Academy,
 - IXL,
 - GeoGebra

Activity 1: Welcome to Blueprint HQ

- Expected outcomes:
 - Students can identify examples of geometry in real-world structures.
 - Form Build Teams (3–4 members).
 - Complete Kahoot warm-up.
 - No calculation answers required.

Activity 2: Measure It to Build It – Foundation Challenge

Scale: 1 cm: 1 m

Task: Create a scale drawing and calculate the area & perimeter of each room.

Room	Drawing (cm)	Real Size (m)	Formula	Area (m ²)	Perimeter (m)
Bedroom	4 × 3	4 m × 3 m	$A = l \times w$	12.0	14.0
Kitchen	3 × 2.5	3 m × 2.5 m	$A = l \times w$	7.5	11.0
Bathroom	2 × 1.5	2 m × 1.5 m	$A = l \times w$	3.0	7.0

- Scale conversions:
 - 1 cm = 1 m
 - 2 cm = 2 m
 - 10 cm = 10 m
- Expected Student Outputs in Canva:
 - Labeled blueprint (each room with real size, area, and perimeter).
 - Use color-coding for clarity.
 - Teacher tip: Award 1 point for correct formula use, 1 for correct substitution, 1 for correct units.
- **Activity 3: Volume Challenge – Materials Calculator**

Shape	Dimensions	Formula	Calculation	Volume (m ³)	Notes
Rectangular Beam	4.0 m × 0.3 m × 0.5 m	$V = l \times w \times h$	$4 \times 0.3 \times 0.5$	0.60 m ³	≈ 600 L concrete
Cylindrical Column	r = 0.20 m, h = 3.0 m	$V = \pi r^2 h$	$\pi \times (0.20^2) \times 3$	0.377 m ³	≈ 377,000 cm ³
Wall Panel	2.5 m × 2.4 m × 0.15 m	$V = l \times w \times h$	$2.5 \times 2.4 \times 0.15$	0.90 m ³	

- Expected Discussion Points:
 - Compare eco-friendly vs. traditional concrete (carbon footprint, cost, weight).
 - Round to 2–3 decimal places.
 - Add ~5–10% material waste factor.

Activity 4: Roof Pitch & Slope Design

Given	Formula	Calculation	Result
Rise = 1.5 m, Run = 3.0 m	Slope = Rise ÷ Run	1.5 ÷ 3.0	0.5 (50%)
Angle	$\theta = \arctan(0.5)$	= 26.57°	≈ 26.6°
Rafter Length	$\sqrt{(\text{rise}^2 + \text{run}^2)}$	$\sqrt{(1.5^2 + 3^2)} = \sqrt{11.25}$	3.35 m

- Expected Student Outputs:
 - Canva sketch labeled with rise, run, slope, and angle.
 - Short written explanation of why they chose that roof pitch.
- Key Learning:
 - Steep slope = better drainage, more material; flat slope = less material, needs waterproofing.

Activity 5: Build Expo (Padlet Showcase)

- Teacher Checklist:

Criteria	Points (0–5)	Notes
Accuracy of math (area, perimeter, volume, slope)		✓ Correct formulas & units
Creativity of design		Innovative layout
Realism of construction		Reasonable proportions/materials
Presentation (clarity, labels, visuals)		Canva blueprint neatness
Reflection video clarity		1-min summary of math reasoning

Total = 25 points

Activity 6: Reflection

- Expected answers include:
 - Why chosen roof pitch: “To prevent rain pooling – 26° is common for lightweight roofs.”
 - Which room had most area: Bedroom (12 m²) – needs more space for furniture.
 - Concrete total: Beam + column + wall = 0.60 + 0.377 + 0.90 = 1.877 m³ (~1.9 m³) total.
- Special Needs Adaptations (Teacher Quick Guide)

Adaptation	Implementation
Visual Glossary	Provide laminated sheet of formulas with pictures.
Pre-drawn Templates	Students fill in only dimensions & numbers.
Hands-on 3D Shapes	Use foam blocks for prism/column modeling.
Scale Converter Chart	Quick lookup (cm ↔ m).
Team Role Assignments	Measurement, Calculator, Designer, Presenter.

Teacher Quick Answers Summary (for marking)

Task	Correct Answer
Bedroom Area	12.0 m²
Bedroom Perimeter	14.0 m
Kitchen Area	7.5 m²
Kitchen Perimeter	11.0 m
Bathroom Area	3.0 m²
Bathroom Perimeter	7.0 m
Beam Volume	0.60 m³
Column Volume	0.377 m³
Wall Volume	0.90 m³
Roof Slope	0.5 (50%)
Roof Angle	26.57°
Rafter Length	3.35 m
Total Concrete	1.877 m³ (~1.9 m³)

Duration:

180 minutes

Activity 6: Math Mission – MedTech Mavericks: Exploring Math in Medical Technology

Description:

Students become "MedTech Mavericks," solving real-world problems through the lens of medical technology. They explore how mathematical concepts like percentages, ratios, and data analysis power innovations in areas such as diagnostics, dosage calculations, imaging, and wearable health tech. Activities are personalized using AI-based tools and inclusive design to support learners of all levels.

Instructions:

1. Welcome to the MedTech Lab! (20 minutes)

- Teacher (T) introduces the role of mathematics in the medical field through an interactive storytelling video:
 - [Math and Medicine: Intro to Calculating Dosages](#)
- Students form "Maverick Teams" of 2–4.
- **Math Integration:**
 - [Dosage & Proportions in Medicine - Khan Academy](#)
 - [Mathematics in Medicine: Introduction & Exercise Calculation – Calculus Course | ...](#)
 - [AEMT Medical Math Practice 1 - Kahoot! Quiz](#)

Adaptation for special needs students:

- T includes subtitles and simplified visual summaries and offers AI-generated summaries (e.g., with NoteGPT) for key concepts

2. Dosage Decisions: Safe Medicine Math (30 minutes)

- Students are junior pharmacists calculating medication doses for patients of different ages and weights.”
- Each team receives a Patient Card with age, weight, and condition.
- They use proportion and ratio reasoning to calculate accurate doses from given dosage formulas (e.g., mg/kg).
- **Bonus Challenge:** Convert milligrams to grams and create a visual chart using [Canva](#).
- **Math Focus:**
 - Apply ratio, proportion, and unit conversion in a real-life medical scenario
 - Use tables or cross-multiplication to solve for unknown quantities

Adaptation for special needs students:

- Teacher provides scaffolded dosage examples and a dosage calculator tool
- allows hands-on simulation with colored cubes representing milligrams

3. Imaging Insights: Math in Medical Scans (30 minutes)

- Students decode and analyze pixel density, scale, and measurement in medical images (e.g., X-rays or MRIs).
- Use AI software (e.g., MyMapAI or [Canva](#)) to annotate dimensions and calculate image scales
- **Challenge:**
 - Calculate the real size of a bone/tumor based on image scaling ratios
 - Upload to Padlet with explanation and diagnosis estimate
- **Math Integration:**
 - Calculate scale ratios and real-world measurements from digital image data
 - Analyze area and proportion in anatomical structures

Adaptation for special needs students:

- T offers printed image overlays with visual cues and uses AI zoom tools for enhanced clarity.
- Peer pairing with “med buddies” for collaborative learning

4. Wearable Tech & Vital Stats Challenge (40 minutes)

- Students design a prototype for a wearable health device that monitors vitals (heart rate, temperature, oxygen levels).”
 - Each team gets a data set (simulated heart rate, oxygen % readings over time).
 - Analyze data to detect anomalies
 - Convert data into graphs and calculate averages and percentages
 - Propose a solution (e.g., an alert system) based on thresholds
 - Use Google Sheets or [Canva](#) to visualize health data

Math Focus:

- Work with percentages, averages, graphing, and thresholds
- Interpret data variability and pattern recognition

Adaptation for special needs students:

- T uses templates for graphing
 - Pre-loaded sample data with step-by-step AI breakdown (Buzzmath, Khan Academy)
 - Audio feedback from MathGPT for clarification

5. Wrap-Up and Reflection: MedTech Showcase (10 minutes)

- **Peer Feedback:**

- View team projects and prototypes on Padlet
- Rate creativity, math application, and real-world feasibility
- Ask reflection questions like: “How did proportions help keep the patient safe?”
- Each team responds with a short recorded explanation or infographic

Adaptation for special needs students:

T provides step-by-step worksheet with example already done.

Hands-on support from a peer or assistant as needed

Teaching Materials:

- Laptops/tablets with internet access
- Patient Cards, Data Printouts, Imaging Templates
- Design Tools:
 - [Canva](#), Gamma, Padlet
 - Khan Academy, Buzzmath
 - Google Sheets, NoteGPT, MyMapAI

Assessment

MedTech Mavericks: Math Quiz

Name: _____

Team: _____

1. Dosage Calculation (Ratios & Proportions)

A patient weighs **20 kg**. The doctor prescribes **10 mg of medicine per kg of body weight**. How many milligrams of medicine should the patient receive?

- a) 100 mg
- b) 200 mg
- c) 300 mg
- d) 400 mg

2. Unit Conversion

The medicine dose from Question 1 is **200 mg**. Convert this to grams.

- a) 0.2 g
- b) 2 g
- c) 20 g
- d) 200 g

3. Imaging Insights (Scale & Measurement)

A bone in an X-ray image measures **5 cm** on the screen. The scale ratio of the image is **1:4** (1 cm on screen = 4 cm in real life).

What is the real size of the bone?

- a) 9 cm
- b) 15 cm
- c) 20 cm
- d) 25 cm

4. Vital Stats (Percentages & Averages)

A wearable device records a patient's oxygen levels over 5 minutes: **96%, 97%, 95%, 98%, 96%**.

What is the average oxygen level?

- a) 95%
- b) 96%
- c) 97%
- d) 98%

5. Safe Medicine Math (Problem Solving)

A junior pharmacist notices that the prescribed dose for a 10 kg child is **120 mg**, but the correct formula is **8 mg per kg**.

Did the pharmacist prescribe too much or too little? How much should the correct dose be?

- a) Too much, 80 mg
- b) Too little, 80 mg
- c) Too much, 100 mg
- d) Too little, 100 mg

✔ Answer Key:

- b) 200 mg
- a) 0.2 g
- c) 20 cm
- b) 96%
- a) Too much, 80 mg

Duration:

120 minutes

Activity 7: Forecast Force: Predicting Weather with Math

Description:

Students take on the role of junior meteorologists in the “Forecast Force,” using mathematics to decode weather data, predict temperatures, and interpret radar graphs. They’ll apply percentages, probability, graph reading, and adaptive analysis to solve real-world weather forecasting challenges. The lesson integrates AI tools, differentiated instruction, and real meteorological data to support diverse learners.

Instructions:

1. Welcome to Forecast HQ! (20 minutes)

- The teacher introduces the concept of weather forecasting and its reliance on mathematical modeling through an animated video:
 - 🌐 [The Mathematics of Meteorology | How Math Predicts the Weather](#)
- Students form “Forecast Teams” of 2–3 members.
- Math Integration Tools:
 - [Khan Academy – Probability Models](#)
 - [Weather Graph Quiz – Blooket Game](#)
 - [Interactive Climate Data Explorer](#)

Adaptation for special needs students:

- T uses simplified weather symbols and color-coded maps
- Provides physical printouts of charts and visuals
- Offers digital read-aloud support

2. Forecasting with Percentages: Rain or Shine? (30 minutes)

- Students are responsible for creating tomorrow’s forecast for your local news station!
- Their tasks:
 - Analyze 3-day weather data, including temperature, humidity, and chance of rain
 - Convert humidity and precipitation likelihood into percentages
 - Determine and explain the probability of rain, storms, or sun
 - Plot findings on a bar graph showing precipitation trends
- **Math Focus:**
 - Converting fractions and decimals into percentages
 - Reading and creating bar graphs
 - Interpreting probability in weather predictions

Adaptation for special needs students:

- T uses graphic organizers with pre-filled values
- Provide “probability word banks” (e.g., likely, unlikely, certain)
- Use tactile weather symbols or digital drag-and-drop tools

3. Temperature Trends: Graph It! (30 minutes)

- Ss track the temperature patterns of two cities over a week to decide which location has more stable weather.”
- Their tasks:
 - Use the provided weather logs to calculate the mean, median, mode, and range of daily temperatures
 - Create a line graph for each city showing temperature variation
 - Compare trends and justify which location is more weather-consistent
- **Math Integration:**
 - Measures of central tendency (mean, median, mode, range)
 - Line graph creation and analysis
 - Comparative reasoning using visual data

Adaptation for special needs students:

- T provides templates for calculating mean, mode, etc.
- Use digital graphing tools with built-in scaffolds (e.g., Desmos Classroom)
- Offer structured sentence frames for data interpretation

4. Build Your Own Weather Station Budget (40 minutes)

- T to Ss: Your school is building a small weather station—you must plan and budget the tools you’ll need!”
- Tasks:
 - Choose equipment from a catalogue (thermometer, anemometer, radar sensor, etc.)
 - Stay within a budget (e.g., Euro 800)
 - Calculate total cost using unit pricing
 - Create a pie chart representing the percentage of the budget spent on each tool
- **Math Focus:**
 - Unit cost and budgeting
 - Percentages and pie charts
 - Financial literacy

Adaptation for special needs students:

- T uses simplified price lists with visuals
- Pre-fill total costs for selected items
- Allow Ss to work in guided small groups with peer mentors

5. Wrap-Up and Reflection: Meteorologist Missions (10 minutes)

- Students upload team forecasts and graphs to Padlet or present live
- Peer Feedback:
 - View forecasts and graphs
 - Leave stars for accuracy and presentation
 - Post one math-based question (e.g., “Why did you say the chance of rain was 80%?”)
 - Teams respond via short video or written explanation

Adaptation for special needs students:

T involves all the Ss.

Teaching Materials:

- Laptops or tablets with internet access
- Weather data handouts (custom or from NASA/NOAA)
- Graph paper, rulers, pie chart templates
- Tools:
 - [Canva](#), Gamma (for video/design)
 - Padlet (project uploads)
 - Khan Academy, Desmos, Buzzmath
 - [Kahoot!](#), [Blooket](#)
 - Google Sheets or Excel

Forecast Force: Junior Meteorologist Quiz (20 min.)

Name: _____

Team: _____

1. Rain or Shine? (Percentages & Probability)

The weather report says:

- Chance of rain: 3/10
- Chance of sun: 7/10

Question: Convert these to percentages.

- Rain: _____%
- Sun: _____%

2. Temperature Trends (Mean, Median, Range)

City A temperatures over 5 days: 22°C, 24°C, 23°C, 25°C, 24°C

Question:

- Mean (average) temperature: _____°C
- Median temperature: _____°C
- Range (highest – lowest): _____°C

3. Graph Interpretation

A bar graph shows precipitation over 3 days:

- Monday: 10 mm
- Tuesday: 20 mm
- Wednesday: 15 mm

Question: Which day had the highest rainfall? _____

Question: How much more rain fell on Tuesday than on Monday? _____ mm

4. Weather Station Budget (Percentages & Addition)

You have €800 to buy:

- Thermometer: €200
- Anemometer: €300
- Rain gauge: €100
- Wind vane: €100

Question:

- Total spent: €_____
- Percentage of budget for thermometer: _____%
- Percentage of budget for anemometer: _____%

5. Prediction Challenge (Problem Solving)

Your 3-day forecast predicts:

- Day 1: 70% chance of rain
- Day 2: 40% chance of rain
- Day 3: 20% chance of rain

Question: Which day is most likely to be sunny? _____

- **Answer Key**

1. Rain: 30%, Sun: 70%
2. Mean: 23.6°C, Median: 24°C, Range: 25-22=3°C
3. Highest rainfall: Tuesday, Difference: 20-10=10 mm
4. Total: 200+300+100+100=€700
Thermometre: $200/800 \times 100 = 25\%$
Anemometre: $300/800 \times 100 = 37.5\%$
5. Day 3 (20% chance of rain → most sunny)

Duration:

120 minutes

Activity 8: Cyber Savers: Cracking the Code of Finance & Fractions

Description:

Students become “Cyber Savers” on a mission to protect their digital bank accounts from fraud, scams, and overspending. Through adaptive challenges involving percentages, interest rates, encryption patterns, budgeting, and probability, Ss apply mathematical concepts in real-world digital finance scenarios. The activity includes differentiated tasks, AI-guided learning, and hands-on decision-making to reinforce core math concepts through personalized learning paths.

Instructions:

1. Welcome to Cyber Savers HQ! (20 minutes)

- T introduces the mission: Protect your digital bank account while learning how online banking works.
 - Interactive kickoff video on how online banking and cybersecurity intersect with math:
🌐 [Do You Need Math In Cybersecurity? - 2022](#)
- Students are placed in small “Cyber Teams” of 2–4.
- **Math Integration:**
 - 🌐 [Percentages for Beginners – Step-by-Step Guide](#)
 - 🌐 [Simple vs Compound Two Paths For Your Money](#)
 - 🌐 [MIND-BLOWING USES OF AI IN FINANCE](#)

Adaptation for special needs students:

- T guides navigation with visuals and AI narration (via NoteGPT).
- Team assignments that allow peer-assisted work and scaffolded prompts.

2. Interest Infiltration: Online Savings Smarts (30 minutes)

- Students are setting up a savings account and choosing between two banks with different interest options.
- Each team receives digital bank offers (one with simple interest, one with compound interest).
- Their task is to use formulas to calculate interest earned over 1, 3, and 5 years with different principal amounts.
- **Math Focus:**
 - Apply formulas for simple and compound interest.
 - Interpret tables and graphs to compare growth over time.

Adaptation for special needs students:

- T uses interactive graphs with auto-fill calculations.
- Offers simplified step-by-step formula cards.

3. Cyber Defense Challenge: Password Probability (30 minutes)

- Teacher to Ss: Hackers are trying to crack your password! How secure is your math-generated password?
- Task:
 - Use probability and combinations to determine how many possible passwords can be formed with different character sets.
 - Create a strong password and test it against simulated attack speeds.
- **Math Focus:**
 - Basic combinatorics: Calculate total possibilities for character strings.
 - Analyze exponential growth related to password length and security.

Adaptation for special needs students:

- T uses drag-and-drop password builders.
- visualize combinations with interactive charts.

4. Online Budget Breakdown: Safe Spending in a Digital World (30 minutes)

- Students receive a digital allowance of Euros 150 per month.
- They have to budget their monthly spending (food delivery, mobile games, subscriptions, and savings).
- Convert expenses to percentages and visualize spending using pie charts.
- Identify phishing scams and “hidden fees” using guided problem cards.

- **Math Focus:**
 - Apply percent-based calculations to real budgets.
 - Interpret pie charts and analyze proportional data.
 - Use logical reasoning and risk assessment with mathematical support
- **Tools:**
 - Google Sheets, [Canva](#) Charts, CyberMath App

Adaptation for special needs students:

- T prepares pre-made budget templates and simplified visuals.
- Uses AI-based question breakdowns (e.g., MathGPT or Buzzmath).
- Optional verbal response option for budget justification.

5. Wrap-Up and Reflection: Cyber Savers Leaderboard (5 minutes)

- Peer Sharing:
 - Upload group projects to Padlet.
 - Leave comments and math-based questions on other groups' savings strategies or password logic.
- Self-reflection prompt:
 - "What math skill helped you most in protecting your digital money? Why?"

Adaptation for special needs students:

T involves all Ss who support each other.

Teaching Materials:

- Laptops/tablets with internet
- Digital bank offers handouts, password challenge cards
- Interactive budgeting templates
- Tools:
 - Khan Academy, [Canva](#), [Kahoot!](#), Google Sheets
 - Padlet, NoteGPT, CyberMath App, Buzzmath

Cyber Savers: Cracking the Code of Finance & Fractions

Mission Assessment

Name: _____ | Team: _____

Part A: Interest Infiltration

1. Bank A offers **simple interest** at 5% per year. If you deposit €200, how much will you have after 3 years?

Answer: _____

2. Bank B offers **compound interest** at 5% per year. If you deposit €200, how much will you have after 3 years?

Answer: _____

👉 Circle the better deal: **Bank A / Bank B**

Part B: Cyber Defense

1. If a password has **4 digits (0–9)**, how many possible passwords are there?

Answer: _____

2. If you add **one extra digit** (making it 5 digits), how many possible passwords are there now?

Answer: _____

👉 What do you notice about how the number of possibilities changes?

Part C: Online Budgeting

1. You receive €150 per month. You spend:

- €30 on games
- €60 on food
- €20 on subscriptions
- The rest you save.

a) What percentage of your money goes to **games**? _____%

b) How much money (in €) do you **save**? _____

c) Which category is the **largest expense**? _____

Part D: Reflection

1. What **math skill** (interest, probability, budgeting, percentages) helped you most to protect your digital account today? Why?

✔ Scoring Guide (20 pts total):

- Part A: 4 pts (2 each)
- Part B: 4 pts (2 each)
- Part C: 6 pts (2 per question)
- Part D: 6 pts (explanation quality)

Cyber Savers Assessment – Answer Key

Part A: Interest Infiltration

1. Simple Interest: €230
2. Compound Interest: €231.53
👉 Better deal: Bank B

Part B: Cyber Defense

1. 10,000 possibilities
2. 100,000 possibilities
👉 Observation: Each extra digit multiplies by 10

Part C: Online Budgeting

- a) Games = 20%
- b) Savings = €40
- c) Largest expense = Food (€60)

Part D: Reflection

(Answers will vary; credit if the student explains a math skill with reasoning.)

Duration:

120 minutes

Activity 9: Web Builders: Applying Math to Build a Website

Description:

Students step into the role of digital architects to plan and design a functional website while applying core math concepts like measurement, proportions, percentages, layout geometry, and data organization. The activity includes adaptive learning paths, AI tutoring tools, and accommodations for special needs learners to ensure full accessibility and personalization.

Instructions:

1. Welcome to Web Builders Studio! (40 minutes)

- T introduces Ss to the activity with a storytelling animation: “*Designing the Perfect Website*”
 - [🌐 How Kids Can Make Their Own Website \(Easy Step-by-Step Guide\)](#)
- Students join "Web Teams" in groups of 3–4.
- Launch interactive exploration:
 - [🌐 How To Build A Website From Start To Finish \(FULL PROCESS\)](#)
 - [🌐 How to Create a Website: Step-by-Step Guide for Beginners 2025](#)
 - [🌐 Build a FREE Website with Google Sites](#)
- Watch a video on Maths
 - [🌐 Transformations Quiz | Rotation, Reflection, and Translation of Shapes | Math Quiz](#)
- Use of adaptive AI tutor: [MathGPT Web Geometry Module]
- **Math Focus:**
 - Proportions and screen layout
 - Percentage allocation of space
 - Grids and coordinate planning

Adaptation for special needs students:

- T provides video transcripts and simplified diagrams and uses visual layout boards and drag-and-drop UI blocks.
- T assigns peer mentors for group support.

2. Pixel Precision: Proportions in Web Layout (15 minutes)

- Teacher to Ss “*You’re designing a homepage layout for a school club.*”
- Task: Divide a 1200px-wide webpage into sections (e.g., header, menu, content, sidebar, footer) using given ratios like 4:1:6:2:1.
- Adjust for mobile layout using responsive ratios.
- **Math Focus:**
 - Apply part-to-whole ratios and convert to pixels
 - Use proportions to resize for multiple screen sizes

Adaptation for special needs students:

- T provides ratio strips and section cards
- Uses Canva or Figma templates with fixed layout guides

3. Color Coding: Math in Website Design (15 minutes)

- Teacher tells Ss to choose a color palette using color ratios (e.g., 60% background, 30% primary text, 10% accent)
- Use [Canva](#) or Colors to create a color scheme
- Upload the palette to a shared class Padlet and explain the math
- **Math Integration:**
 - Convert percentages to proportions
 - Visualize data using pie charts or bar graphs

Adaptation for special needs students:

- T offers color selection scaffolds
- Use color wheel spinners for random selection
- Provide pre-made palettes for editing

4. Content Math: Organizing Web Data (40 minutes)

- T to Ss: "You're creating a page to display survey data about favorite school clubs."
- Students receive a dataset (e.g., number of Ss in each club)
- Create tables or pie charts using percentages
- Use grid systems to align content
- Calculate image size ratios to fit design constraints
- **Math Focus:**
 - Data visualization
 - Percentages and fractions
 - Measurement and alignment

Adaptation for special needs students:

- T uses Google Sheets with formulas pre-inserted
- Visual templates for table and chart creation
- Offer simplified data sets and calculator tools

5. Publish & Pitch: Presenting the Website Plan (40 minutes)

- Each team presents its website design plan: layout, proportions, color scheme, and content structure
- Use Google Slides or Canva for mock-up presentations
- Class votes on best design using a rubric including math application, clarity, and creativity
- **Math Integration:**
 - Tallying class votes and calculating percentages
 - Comparing designs using layout-to-content ratios
 - Reflecting on how math-guided decisions

Adaptation for special needs students:

- T uses visual pitch templates
- Allows audio or video presentations
- Supports from AI tools to auto-generate visuals

Teaching Materials:

- Digital Tools & Apps
- [Canva](#) or Figma
- Colors.co
- Google Sheets
- Google Slides
- Padlet or Jamboard
- [Kahoot](#)
- AI Math Tutor (e.g., Khan Academy, MathGPT, IXL)

Assessment

Web Builders - Applying Math to Build a Website (10 min.)

Part 1 – Quick Exit test

(Students answer 1–2 short questions at the end of each stage. Can be oral, written, or digital.)

Layout (Pixel Ratios)

The page is 1200px wide. Divide it into sections with a ratio of 4:1:6:2:1.

Q: How many pixels is the sidebar (ratio = 2)?

Colors (Percentages)

A color palette is 60% background, 30% text, 10% accent.

Q: What fraction of the palette is the accent color?

Data (Survey Results)

40 students voted for their favorite clubs: 12 chose Sports.

Q: What percentage is that?

Voting (Class Choice)

If Team A gets 8 votes out of 20 total...

Q: What percent of the class voted for them?

Solutions (For Teacher Reference)

Layout:

Total ratio = $4 + 1 + 6 + 2 + 1 = 14$

1 part = $1200 \div 14 = 85.7 \text{ px}$ ($\approx 86 \text{ px}$)

Sidebar (2 parts) = $2 \times 85.7 = \approx \mathbf{172 \text{ px}}$

Colors:

$10\% = 10/100 = \mathbf{1/10}$

Data:

$12 \div 40 = 0.3 \rightarrow \mathbf{30\%}$

Voting:

$8 \div 20 = 0.4 \rightarrow \mathbf{40\%}$

Part 2 – Final Presentation Rubric (Team Work)

Criteria	1 = Needs Work	2 = Good	3 = Excellent
Math Application	Some math missing or incorrect	Math mostly correct	Clear, correct, creative use of math
Clarity & Design	Hard to follow	Understandable	Very clear and well-structured
Creativity & Teamwork	Minimal effort	Solid attempt	Innovative, engaging, strong teamwork

👉 Total = /9 points

Part 3 – Reflection Questions (Self/Peer)

(Choose 1-2 to answer in 1-2 sentences OR verbally)

- What math skill did your team use best?
- One thing I learned about math in web design is...
- What would I improve if I built another site?

Duration:

170 minutes

Activity 10: AI Across Borders – Math for the Modern Explorer

Description:

Students take on the role of “Erasmus Ambassadors,” planning international educational meetings on the topic of AI in Education in the cities of Massafra (Italy), Karditsa (Greece), Bacau (Romania), Aradippou (Cyprus), Zaprešić (Croatia), Šiauliai (Lithuania), and Eskişehir (Turkey). This travel-themed math activity allows Ss to explore real distances, transportation logistics, accommodation costs, and budgeting while applying mathematical concepts like ratios, percentages, unit pricing, and currency exchange rates.

The activity uses adaptive tools to personalize the learning experience, and includes accessible formats for Ss with diverse needs.

Instructions:

1. Welcome to AI Ambassadors HQ! (40 minutes)

- Teacher (T) **Intro Video:** Overview of AI in education and short travel videos about the destinations:
 - [Massafra, Italy](#) 🌐 Massafra Puglia Italy
 - [Karditsa, Greece](#)
🌐 [Karditsa, Central Greece, Official Video \(from Ecotourism-Greece.com\)](#)
 - [Bacau, Romania](#) 🌐 [Visit Romania : A Day in Bacău](#)
 - [Aradippou, Cyprus](#) 🌐 [Car Drive Tour of Aradippou Village](#)
 - [Zaprešić, Croatia](#) 🌐 [21.03.25. - Dan narcisa u Zaprešiću](#)
 - [Šiauliai, Lithuania](#) 🌐 [Visiting Beautiful Šiauliai: Lithuania's 4th Largest City!](#)
 - [Eskişehir, Turkey](#)
🌐 [Eskişehir Türkiye Walking Tour 4K - One of the Most Livable Cities in the World](#)
- Students form “Ambassador Teams” in pairs or small groups.
- T introduces proportional reasoning and budgeting concepts using:
 - [Proportions Explained – YouTube](#)
 - [Khan Academy – Solving Proportions](#)
 - https://www.mathinaction.org/uploads/1/9/5/3/19539617/mc_5_trips_and_vacations.pdf
 - 🌐 Adventure Travel - Kahoot! Quiz

Adaptation for special needs students:

- T provides City “profile cards” with symbols, flags, currencies, and basic info
- Captions and transcript options for all videos
- Peer buddy support during group work

2. Route Reality Check: Distance & Duration (30 minutes)

- T “Your team is organizing meetings across the 7 Erasmus cities. Choose 3 cities and find the fastest, cheapest, and most eco-friendly travel routes.”

Tasks:

- Use Google Maps and Rome2Rio to compare distances (km) and travel times (hrs)
- Calculate speed = distance ÷ time for each route
- Analyze and represent data in tables and bar charts
- **Math focus**
 - Speed-distance-time calculations
 - Comparing ratios of time and cost between transport modes (train:bus:flight)
 - Interpreting scale maps

Adaptation for special needs students:

- T . prepares pre-filled route maps and travel data sets
- Drag-and-drop route builder with visual aids
- Digital timers and calculators built into the worksheet

3. Budgeting for Borders: The Erasmus Challenge (30 minutes)

- T: “Each group is given a €4,000 budget to organize a 5-day AI meeting in one of the chosen cities.”
- **Tasks:**
 - Distribute the budget across categories: Travel, Accommodation, Food, Venue Hire, AI Guest Speakers
 - Use a ratio of 4:3:2:1:2 for expense planning
 - Use current exchange rates to convert costs in local currencies (TRY, RON, HRK, etc.)
 - Create a budget plan in Google Sheets with formulas for unit costs and totals
- **Math Focus:**
 - Speed-distance-time calculations
 - Comparing ratios of time and cost between transport modes (train:bus:flight)
 - Interpreting scale maps

Adaptation for special needs students:

- T prepares pre-filled route maps and travel data sets
- Drag-and-drop route builder with visual aids
- Digital timers and calculators built into the worksheet

4. Budgeting for Borders: The Erasmus Challenge (30 minutes)

- Students are divided into groups. Each group is given a €4,000 budget to organize a 5-day AI meeting in one of the chosen cities.”
- They distribute the budget across categories:
 - Travel, Accommodation, Food, Venue Hire, AI Guest Speakers
 - Use a ratio of 4:3:2:1:2 for expense planning
- Use current exchange rates to convert costs in local currencies (TRY, RON, HRK, etc.)
- Create a budget plan in Google Sheets with formulas for unit costs and totals
- **Math Focus:**
 - Currency conversion using real-time rates
 - Ratio-based budget allocation
 - Calculating unit pricing per student

Adaptation for special needs students:

- T adapts budgeting template with drop-down menus and visual icons
- Audio instructions for formulas and conversions
- Built-in calculator and text-to-speech AI tool

5. Cultural Cuisine Ratios: Adaptive Menu Math (30 minutes)

- Students are hosting a multicultural dinner for their guests in the chosen Erasmus city.”
- Research a traditional dish from the city
- Scale recipe from 4 servings to 12 and 20
- Calculate the cost per dish using supermarket price data

- **Math Focus:**
 - Ratios and scaling
 - Cost comparison
 - Unit conversions (e.g., grams to ounces)

Adaptation for special needs students:

- T prepares visual ingredient cards
- Pre-scaled recipe options
- Hands-on measurement tools for kinesthetic learners

Teaching Materials:

- Devices with internet access
- Erasmus City Cards, Budget Templates, Recipe Handouts
- Tools & Platforms:
 - Google Maps, Sheets, Padlet, [Canva](#)
 - Khan Academy, [Kahoot!](#), Buzzmath
 - Rome2Rio, NoteGPT, MyMapAI
 - Currency Converter Widget

Assessment

AI Ambassadors Erasmus Math Challenge – Quiz

Theme: Planning international AI meetings in

 Massafra (Italy) •  Karditsa (Greece) •  Bacau (Romania) •  Aradippou (Cyprus) •  Zaprešić (Croatia) •  Šiauliai (Lithuania) •  Eskişehir (Turkey)

Time: 30 minutes

Tools allowed: Calculator, Google Maps, currency converter

Part A: Travel & Distance

1. Your team travels from **Massafra (Italy)** to **Zaprešić (Croatia)** — a distance of **850 km**. If the train takes **10 hours**, what is the average speed?
a) 75 km/h b) 85 km/h c) 90 km/h d) 95 km/h
2. A flight from **Karditsa (Greece)** to **Eskişehir (Turkey)** covers **620 km** in **1.5 hours**. What is the average speed?
a) 310 km/h b) 413 km/h c) 450 km/h d) 520 km/h
3. The road distance from **Bacau (Romania)** to **Aradippou (Cyprus)** is **1,350 km**. If the bus travels for **27 hours**, what is the average speed?
a) 40 km/h b) 45 km/h c) 50 km/h d) 55 km/h
4. From **Šiauliai (Lithuania)** to **Karditsa (Greece)** is **1,900 km** by air. If the flight takes **3.8 hours**, what is the average speed?
a) 400 km/h b) 450 km/h c) 500 km/h d) 550 km/h

5. Compare two trips:

- Trip A: **Massafra → Bacau**, 1,200 km in 12 hours
- Trip B: **Aradippou → Eskişehir**, 800 km in 8 hours

Which trip is faster and by how much?

- a) Trip A, by 10 km/h b) Trip B, by 10 km/h c) Same speed d) Trip A, by 5 km/h

Part B: Budgeting for Borders

6. Your total budget for the AI meeting is **€4,000**.

Use the ratio **4:3:2:1:2** (Travel : Accommodation : Food : Venue : Speakers).

How much is allocated for **Accommodation**?

- a) €1,000 b) €1,200 c) €1,333 d) €1,500

7. If the **Food** budget (2 parts) is for **10 students**, how much food money per student?

- a) €100 b) €150 c) €200 d) €250

8. In **Aradippou (Cyprus)**, a guesthouse costs **€80 per night** for a room.

How much will **4 rooms for 5 nights** cost?

- a) €1,400 b) €1,500 c) €1,600 d) €1,800

9. In **Šiauliai (Lithuania)**, lunch costs **€8**.

If each student buys lunch for **5 days**, what is the total per student?

- a) €30 b) €35 c) €40 d) €45

10. The Lithuanian team earns a **10% sponsor discount** on their €4,000 budget.

What is their new total?

- a) €3,600 b) €3,700 c) €3,800 d) €3,900

Part C: Currency Exchange

11. In **Cyprus**, €1 = **£0.86 (GBP)**.

If the AI speaker charges **£258**, how many euros is that?

a) €290 b) €300 c) €305 d) €320

12. In **Turkey**, €1 = **33.5 TRY**.

If the group spends **₺2,010**, how many euros is that?

a) €55 b) €58 c) €60 d) €62

13. In **Romania**, €1 = **4.95 RON**.

If accommodation costs **1,485 RON**, what is the cost in euros?

a) €280 b) €290 c) €300 d) €310

Part D: Cultural Cuisine Ratios

14. In **Greece**, a *moussaka* recipe for **4 people** uses **600 g of eggplant**.

How much is needed for **20 people**?

a) 2,000 g b) 2,500 g c) 3,000 g d) 3,500 g

15. In **Italy**, the cost of ingredients for 6 servings of *pasta al forno* is **€18**.

What will it cost for **15 servings** (the same unit rate)?

a) €40 b) €42 c) €45 d) €48

Answer Key (for teachers)

#	Correct	Explanation
1	b) 85 km/h	$850 \div 10$
2	b) 413 km/h	$620 \div 1.5$
3	b) 50 km/h	$1350 \div 27$
4	c) 500 km/h	$1900 \div 3.8$
5	c) Same speed	Both 100 km/h
6	b) €1,000	$(3/12) \times 4000$
7	b) €150	$(2/12 \times 4000) / 10 = 150$
8	c) €1,600	$80 \times 4 \times 5$
9	c) €40	8×5
10	c) €3,600	4000×0.9
11	b) €300	$258 \div 0.86$
12	c) €60	$2010 \div 33.5$
13	c) €300	$1485 \div 4.95$
14	c) 3,000 g	600×5
15	b) €45	$18 \div 6 \times 15$

Duration:

185 minutes

Closure: Math Mastery Gallery Walk

Description:

Students participate in a “Gallery Walk” to showcase their projects and engage with their peers’ work. From budget breakdowns and blueprint designs to weather predictions and identity posters, Ss share how math came to life in their world. This collaborative closure invites dialogue, appreciation, and metacognitive reflection, celebrating the variety and creativity in mathematical thinking.

Instructions:

1. Setup (20 minutes)

Students display selected projects from the module (e.g., math identity posters, blueprint blueprints, Cyber Saver financial simulations, travel cost plans, website wireframes) in a physical or virtual space.

2. Gallery Walk (30 minutes)

- Students circulate through the room or digital platform, reviewing peer projects.
- They leave sticky notes or digital comments using prompts such as:
 - *“Your approach to solving this reminded me of...”*
 - *“I loved how you applied math to...”*
 - *“This made me rethink how I use...”*

3. Reflection and Discussion (30 minutes)

Whole-Class Discussion

- Students share one project that inspired them and explain why.
- Discussion prompts:
 - *What was one creative way math was applied in your peer's work?*
 - *How did this module change the way you see math?*

Individual Reflection

- Students respond to reflection questions in a math journal or digital form:
 - *What did you learn about yourself as a math learner?*
 - *What challenged you most? How did you overcome it?*
 - *How do you see yourself using math in the real world now?*

Teaching Materials:

- Computers/tablets or printed materials
- Digital Gallery Wall (e.g., Padlet, Linoit, Google Slides)
- Reflection Sheets or Google Forms

Assessment

- Formative: Peer feedback, reflection journals, participation in discussions
- Summative: Evaluation of final project presentations based on application of math concepts, creativity, and clarity

Duration:

80 minutes

MODULE 3

Customized Language Learning To enhance students' language skills via personalized learning activities



Authors: Georgia Karagianni **Institution:** Educom+, The community for the "plus" in education, Greece

1. Module Description

This module supports lower-to-upper secondary learners in strengthening integrated language skills (listening, speaking, reading, writing) through personalised, AI-assisted tasks and multimodal creation. Learners use adaptive prompts, visual and audio tools and short cycles of feedback to co-create stories, dialogues, memes, comics, audio pieces and mini-projects. The design follows the Universal Design for Learning and task-based learning principles, ensuring multiple means of engagement, representation and expression. Activities are flexible for mixed-ability classes and provide scaffolds for Ss with special educational needs. The module culminates in sharing products on a class wall (e.g., [Padlet](#)) and brief self/peer reflection using simple rubrics.

2. Content and activities of the module

Content: Adaptive language exercises, interactive vocabulary builders and immersive language experiences (e.g., co-writing with AI, avatar-based dialogues, meme/visual vocabulary, audio challenges and comic remixes).

Activities: Language games, storytelling sessions

3. Module Objectives

- a. Personalise language practices according to learners' levels, interests and modalities using AI-assisted tools and scaffolded prompts.
- b. Develop integrated communicative skills and vocabulary depth through short, task-based, multimodal activities.
- c. Foster collaboration, inclusive participation and the responsible, reflective use of AI in language learning.

4. Module Learning Outcomes

- a. Generate, revise and present short texts (stories, dialogues, captions) with AI support appropriate to their proficiency.
- b. Use and consolidate vocabulary in context through visual, audio and game-like tasks.
- c. Interact orally and in writing in pairs/groups and publish multimodal products on a shared platform with basic digital literacy.
- d. Self-assess and give peer feedback using concise criteria/rubrics and reflect on how AI supported their learning

5. Key Words

Adaptive learning; AI-assisted language learning; UDL; differentiation; task-based learning; multimodal literacy; vocabulary building; storytelling; dialogue; avatars; meme literacy; audio narration; formative assessment; [Padlet](#); Canva; ChatGPT; MagicSchool.ai.

6. Methodology

- UDL-informed, task-based approach: brief input → guided practice → creation → share/feedback → reflection.
- Adaptive scaffolding: levelled prompts, sentence starters, visual supports, TTS/STT, choice of output (text, audio, image).
- Collaborative learning: pair and small-group production with structured peer feedback.
- Formative assessment: checklists/rubrics, emoji ratings, and short reflections embedded in each activity.

Adaptive Learning Scenario

Warm-up & Energisers:

Title: Beat-the-Bot Word Dash

Description:

This energiser is quick and level-aware, allowing students to either generate or receive a mini, personalised word set before completing fast micro-tasks (such as matching, using, or performing) and then creatively "beating the bot". It promotes vocabulary, fluency and playfulness while mirroring the module's adaptive, AI-assisted spirit.

Instructions:

Set up (1-2'): T projects a timer and models one micro-task (e.g., "Use 2 words in one humorous sentence").

Personalise (2-3'):

- Ss quickly get 4-6 words via AI (teacher-prompted on a single device) or from a levelled word bank.
- For Ss with special educational needs (SEN), provide illustrated word cards or sentence starters.

Dash (3-4'): In pairs, learners complete any two of these micro-tasks:

- Match & explain: pair each word with a simple definition or emoji.
- Say & show: one sentence aloud + a quick gesture/emoji that fits the word.
- Mini-caption: write a 6-8 word caption using at least two target words.

Beat the Bot (1-2'): Pairs nominate their best output; the class votes quickly (hands/emojis).

Quick reflection (1'): "Which word will you try to use today?" (verbal or emoji card).

Teaching Materials:

Timer/board; projector (optional); small word banks/illustrated cards; one T device for AI prompts; optional emoji cards; sentence-starter slips; TTS/STT accessibility.

Duration:

8-12 minutes.

The main part:

Activity 1: AI-Powered StoryBuilder

Description:

Ss engage in an inclusive, AI-assisted storytelling activity where they co-create a digital story with the help of AI tools. The activity promotes vocabulary development, narrative structure and self-expression while adjusting to individual levels and interests. Learners generate custom story prompts, build narratives in dialogue with AI and illustrate or narrate their stories using multimodal tools. The final stories are shared on [Padlet](#), encouraging creativity, collaboration, and peer feedback.

Instructions:

1. Warm-Up: “If Your Favourite Word Were a Person...” (10 minutes)

- T invites Ss to choose a favourite English word (e.g., *mystery, sunshine, imagine*) and imagine it as a person.
- Ss complete a quick creative writing starter:
 - *My favourite word is _____. If it were a person, it would be _____ because _____.*
- Ss share in pairs or groups.

Adaptation for special needs students:

T provides a list of words with images and pre-written sentence starters. Ss may respond with drawings or use speech-to-text.

2. AI Story Prompt Generation (10 minutes)

- Ss open [ChatGPT](#) or [MagicSchool.ai](#) and input a prompt like:
 - *I am a 14-year-old learning English. I like animals and fantasy. Give me a simple story starter with five key words.*
- AI generates customised story starters and vocabulary lists.

Adaptation for special needs students:

T supports Ss with oral dictation or typed prompts. Ss may use visual prompts or receive printed vocabulary banks.

3. Co-Writing with AI (20 minutes)

- Ss write their stories in short segments, while AI provides suggestions, grammar assistance, or vocabulary as needed.
- Ss can ask for synonyms, endings, or dialogue suggestions.

Adaptation for special needs students:

T encourages use of text-to-speech tools and simpler sentence scaffolds. Ss can record their ideas via voice and get AI-generated text.

4. Visual or Audio Enhancement (10 minutes)

- Ss choose to:
 - Create a book cover or main character using [Canva AI Design Assistant](#)
 - Record narration using [Vocaroo](#) and generate a QR code to embed
 - Add AI-generated images from [DALL-E](#) or [OpenArt](#)

Adaptation for special needs students:

T offers ready-made templates or visual selections. Ss may work in pairs to co-create content.

5. Story Showcase and Peer Feedback (10 minutes)

- Ss upload their story (text, audio, or image-enhanced) on [Padlet](#).
- Peers leave emoji ratings (★-★-★-★-★) and answer:
 - *What part did you like most?*
 - *Which new word was interesting?*

Adaptation for special needs students:

T provides sentence stems for feedback and/or uses peer buddies. Ss can use symbols or stickers for feedback.

Teaching Materials:

Digital Tools

- [ChatGPT](#) / [MagicSchool.ai](#) – AI story writing support
- [Canva](#) – visual story creation
- [DALL·E](#), [OpenArt – image generation](#)
- [Padlet](#) – digital story wall
- [Vocaroo](#) – audio narration
- Text-to-Speech tools (e.g. [NaturalReader](#))

Other Materials:

- Worksheet templates (story planner, feedback checklist)
- Printed visuals or icons for scaffolding

6. Assessment:

Formative Assessment:

- Story checklist (creativity, vocabulary use, clarity)
- Peer feedback ([Padlet](#) comments or star rating)

Self-Reflection Prompts:

- What new words did you use?
- What was easy or challenging when writing with AI?
- What would you do differently next time?

Duration:

60 minutes

Activity 2: AI-Avatar Dialogues—Speak Your Story!

Description:

Ss create a digital avatar using AI tools and give it a personality, background and voice. They then engage in short AI-assisted dialogues by writing or recording conversations between themselves and their avatar. The activity supports speaking and writing skills while introducing Ss to avatar-based storytelling and responsible use of AI-generated personas.

Instructions:

1. Create Your AI Avatar (10 minutes)

- Ss use an avatar generator like [Ready Player Me](#), [Bitmoji](#), or [HeyGen](#) to create a virtual character.
- They give their avatar a name, age, personality, and favourite word or expression in English.
Optional: Add an AI-generated background image using [DALL·E](#) or [Canva AI](#).
- Example prompt: “Create a fantasy-themed avatar who loves books and uses the phrase, ‘Let’s dream big!’”

Adaptation for special needs students:

T provides avatar-building templates with visual supports and sample descriptions. Ss may select from a menu of options or work with a peer.

2. Write or Record a Dialogue with Your Avatar (10–15 minutes)

- Ss use [ChatGPT](#) or [MagicSchool.ai](#) to write a short, fun dialogue between themselves and their avatar (4–6 lines each). Alternatively, Ss can record the dialogue using Vocaroo (e.g., narrate both parts or collaborate in pairs).
 - Example prompt: *Write a short conversation between me and an avatar called Max who is always optimistic and loves to rhyme.*

Adaptation for special needs students:

T provides sentence starters or a fill-in-the-blank dialogue template. Ss can record lines instead of writing them.

3. Share & Reflect (5 minutes)

- Ss upload their dialogues (text or audio) to a shared [Padlet wall](#) under the title “Meet My Avatar.”
- They choose one other student’s avatar and leave a comment: “What would you ask this avatar if you met them?”

Adaptation for special needs students:

T provides emojis or a list of simple sentence stems (e.g., “I like your avatar because...”).

4. Assessment:

Formative Assessment:

- Peer comment on [Padlet](#)
- T checks: completion, creativity, language use

Self-Reflection Prompt:

- “How did it feel to talk to a character you created with AI?”
“What could your avatar teach others about you?”





Adaptation for special needs students:

Ss can:

- Use text-to-speech or speech-to-text tools (e.g. [Natural Reader](#), dictation).
- Respond through oral recordings instead of written feedback or reflections.
- Use pre-filled templates, visual aids, or sentence starters for peer reviews or reflections.
- Work in flexible pairs or guided groups for co-creating stories or avatars.
- Be assessed primarily on effort, engagement and communication, rather than grammatical accuracy.

5. Assessment Rubric: AI in Language Learning Activities

Criteria	Excellent (3 points)	Good (2 points)	Emerging (1 point)
Creativity and Originality	Highly imaginative story or avatar; shows clear personal voice and flair.	Some originality; ideas are clear and relevant.	Basic or predictable; limited imagination.
Use of English Language	Accurate grammar and varied vocabulary; ideas are clearly expressed.	Mostly clear with some errors; vocabulary is appropriate.	Frequent errors; limited vocabulary or unclear ideas.
Use of AI Tools	Independently used AI (e.g. ChatGPT, Canva) with confidence and creativity.	Used AI tools with some support; task completed.	Needed frequent help; basic or incomplete AI use.
Multimodal Elements <i>(visuals/audio)</i>	Well-designed visuals or audio narration clearly support the story.	Some visuals or audio included with moderate quality.	Missing or unclear multimodal elements.
Peer Interaction and Feedback	Active participation in peer review; gave helpful and respectful feedback.	Gave basic comments or interacted with one peer.	Minimal peer interaction or feedback.
Reflection and Self-Awareness <i>(optional)</i>	Deep reflection on learning experience, tool use, and personal progress.	Some reflection is shown using prompts or short comments.	Little or no reflection; unclear or unrelated answers.

Total Points	Description
15–18	 Excellent – Strong creativity, language use, and independent AI engagement.
11–14	 Very Good – Ss engaged with tools and peers appropriately; task completed successfully.
6–10	 Developing – Basic participation; support needed for language, creativity, or tools.
0–5	 Needs Support – Task incomplete or misunderstood; intensive support required.

Adaptation for special needs students:

Ss can:

- Use emoji stickers instead of written scores 🎉👍😐
- Record their reflections using [Vocaroo](#) 🗣️
- Work in pairs for peer feedback 👧👦
- Use sentence starters like:
 - “I liked my story because...”
 - “Next time I will...”
 - “The AI helped me by...”

Teaching Materials:

Digital Tools:

- [Ready Player Me](#) / [Bitmoji](#) / [HeyGen](#) – avatar creation
- [ChatGPT](#) / [MagicSchool.ai](#) – dialogue co-writing
- [Vocaroo](#) – voice recording
- [Padlet](#) – sharing and feedback
- [Canva AI](#) or [DALL·E](#) – optional background visuals

Printable Materials:

- Dialogue scaffolding sheet
- Visual guide for avatar building

Duration:

25–30 minutes

Activity 3: Meme My Word! – Visual Vocabulary with AI

Description:

In this playful activity, Ss select or are assigned target vocabulary (either from a previous lesson or generated via AI), then use an AI-powered image generator (e.g., [Canva's Magic Media](#), [DALL·E](#), or [Craiyon](#)) to create a humorous or creative meme that demonstrates the meaning of the word. This boosts vocabulary retention, supports multimodal thinking, and empowers learners to express themselves visually and linguistically. Final memes are shared in a virtual gallery (e.g. [Padlet](#)).

Instructions:

1. Warm-Up: Word of the Day Brainstorm (5 minutes)

- T shares a silly or intriguing word using AI (e.g., “bamboozled”, “whirlwind”, “awkward”). Ss guess its meaning and use it in a funny sentence.
- Optional: Use [ChatGPT](#) to generate a “crazy sentence of the day” using 3 of the Ss’ new words.

Adaptation for special needs students:

T provides definitions with images or videos; Ss choose a word from a visual list and match it with a meaning or emoji.

2. Generate or Choose Vocabulary (5–10 minutes)

Ss:

- Select 1–2 words they want to reinforce. They may:
- Choose from a teacher-curated list of target vocabulary
- Ask [ChatGPT](#) to suggest 3 interesting words with definitions and examples based on their level or story
- Prompt: “I’m 14 and learning English. Give me 3 funny or weird words with meanings and an example sentence.”

Adaptation for special needs students:

T offers 3 pre-selected, illustrated words and asks Ss to choose one. Ss with cognitive differences may use symbols or simplified language cards.

3. Create an AI-Powered Meme (10–15 minutes)

- Ss use an AI visual tool like:
 - [Canva](#) Magic Media (type a word and generate an image)
 - [DALL·E](#) / [Craiyon](#) (AI image generator)
 - or draw their own meme with a caption
- They add a funny or creative caption that includes the word, using proper context.
 - Example: Word: “chaotic”, Caption: “*Me trying to do homework with 5 tabs open and a cat on my keyboard = CHAOTIC energy.*”

Adaptation for special needs students:

Ss may dictate their caption and choose from pre-made image options. T can help scribe or support with sentence scaffolds.

4. Meme Gallery & Comment (5–10 minutes)

- Ss upload their meme to [Padlet](#), a shared slide deck, or a printed classroom wall. They comment on 2 other memes:
 - “This made me laugh because...”
 - “I learned that ___ means...”

Adaptation for special needs students:

T offers emoji reactions, sticker comments or sentence starters. Ss with speech difficulties may point, type or record their comment.

5. Assessment:

Criteria	✅ Excellent (3)	😊 Very Good (2)	⚠️ Developing (1)
Vocabulary use	Word is used correctly and creatively	Word is mostly clear	Word is unclear or incorrect
AI tool use	AI used effectively to create a fitting or fun image	AI used with some help	Little use of AI or unclear image
Visual creativity	Image and caption work together in a fun or smart way	Image and text are clear	Visual is confusing or missing
Peer interaction	S commented thoughtfully on others’ memes	Commented on at least one	No comment given

Adaptation for special needs students:

- Focus on effort and participation over precision
- Allow for oral, drawn, or sticker-based responses
- Simplify rubric with emojis 👍 😊 🙄 or scaffolded reflection

Teaching Materials:

AI & Digital Tools:

- [ChatGPT](#) / [MagicSchool.ai](#) – vocabulary suggestion
- [Canva AI](#) / [DALL·E](#) / Craiyon – image generation
- [Padlet](#) – digital meme wall
- Visual dictionary or flashcards

Printable Resources:

- Vocabulary choice list with icons
- Meme template (image + caption box)
- Comment sentence starters

Duration:

30 minutes (flexible; can be done in one session or extended over two).

Activity 4: Chatbot Challenge – Build a Character That Talks!

Description:

Ss design their own chatbot character (e.g., a historical figure, fictional persona, or invented character) using AI prompts and dialogue examples. They program or simulate their chatbot's responses using tools like [ChatGPT](#), [Character.ai](#), or structured templates. Peers interact with each other's chatbots by asking questions and evaluating how well the chatbot stays in character, uses correct English, and expresses a clear personality. The activity boosts language skills, logic, and digital creativity while promoting responsible and creative AI use.

Instructions:

1. Warm-Up: "What Would They Say?" (5–7 minutes)

- T: Show a picture of a well-known character or historical person (e.g., a pirate, Cleopatra, a robot, or Albert Einstein). Ask:
- "If this person were a chatbot, what would they say to you?"
- Ss silly or curious responses and share aloud.

Adaptation for special needs students:

T Use images and speech bubbles for visual brainstorming. Allow Ss to draw or choose from options.

2. Create a Chatbot Persona (10–15 minutes)

- In pairs, Ss choose or invent a chatbot character. They use [ChatGPT](#) or a scaffolded template to create:
- Name
- Personality traits (e.g., funny, serious, helpful)
- Topic of expertise (e.g., animals, fashion, space)
- Favourite phrases (e.g., "Let's blast off!")
- Sample prompt to [ChatGPT](#): "Help me create a chatbot character who is a talkative dog that loves pizza and gives life advice."

Adaptation for special needs students:

T: Use a character profile sheet with icons and simple options. Allow for voice input instead of typing.

3. Simulate or Script a Dialogue (10–15 minutes)

- Ss write or simulate a short Q&A between themselves and their chatbot (4–5 exchanges).
- They can manually write both parts OR
- Use [ChatGPT](#) to simulate the responses by describing the chatbot and asking real questions
- Example prompt: “Pretend you are a 10,000-year-old dragon who gives career advice. I will ask you questions.”

Adaptation for special needs students:

T: Provide sentence starters, alternative formats (e.g., audio) or scaffolded templates (e.g., fill-in-the-blanks dialogue).

4. Chatbot Interaction & Voting (5–10 minutes)

- Ss rotate (or swap screens) and “interview” another group’s chatbot.
- They vote or comment on:
 - 🧠 “Most Creative Character”
 - 🗣️ “Best Language Use”
 - 🤖 “Most Realistic Chatbot Responses”

Adaptation for special needs students:

T: Encourage the use of emoji voting cards, yes/no stickers or audio recordings for feedback.

5. Assessment:

Criteria	✅ Excellent (3)	😊 Good (2)	⚠️ Needs Work (1)
Character Profile	Clear, creative personality; fits chatbot format well	Some traits shown; idea is clear	Character unclear or not developed
Dialogue Quality	Natural, correct language with creative ideas	Mostly clear, some errors	Hard to follow or repetitive
AI Engagement	AI used to build character or simulate answers meaningfully	AI used but not fully explored	Little or no use of AI tool
Collaboration	Pair worked together equally and helped each other	Mostly balanced teamwork	One student did most of the work

Adaptation for special needs students:

- Simplify chatbot idea (e.g., use animals, emojis, single-topic bots)
- Use oral interaction or short sentence strips
- Emphasize effort, participation, and collaboration over accuracy

Teaching Materials:

AI & Digital Tools:

- [ChatGPT](#) / [MagicSchool.ai](#) – to simulate chatbot responses
- [Character.ai](#) – (optional) to build persistent bots
- [Canva](#) / [Google Slides](#) – to present chatbot profiles
- [Padlet](#) – for sharing chat transcripts or summaries

Printable Resources:

- Chatbot profile sheet (name, traits, catchphrases)
- Dialogue template
- My AI Chatbot Character [Sheet: template link](#)
- Peer voting sheet with symbols/emojis

MY AI CHATBOT CHARACTER SHEET

1. 🎀 My Chatbot's Identity

- Name: _____
- Age: Young Middle-aged Ancient Non-human
- Type: Person Animal Robot Other: _____
- My chatbot lives in: _____
- My chatbot is good at: _____

2. 🦋 Personality Traits (tick 2-3)

- Funny
- Friendly
- Serious
- Smart
- Silly
- Mysterious
- Helpful
- Grumpy
- Brave
- Wise



3. 🗣️ Favourite Phrases or Expressions

- " _____ "
- " _____ "
- " _____ "

(Use phrases your chatbot might say often!)

4. 🗨️ Chatbot Introduction

Complete the sentences or write your own!

👋 "Hello! My name is _____. I'm a _____ who loves to _____. People talk to me when they need _____."

5. 💬 Sample Dialogue (start the conversation!)

You (the user)	Chatbot (your character)
Hi! What's your name?	
What can you help me with today?	
Tell me something fun about you!	
What's your advice for... (school / life)?	

(Add more if you want! Use AI to help generate responses.)


6. 🌟 Draw or Design Your Chatbot

(Or paste an AI-generated image using [Canva](#), [DALL·E](#), etc.)

Alternatively, SEN Ss can fill in this card:



My AI Chatbot Character





① 1. Identity

😊 Name: _____

🏠 Where lives _____

② 2. Personality



③ 3. Phrases

④ 4. Sample Dialogue

👤 You	🤖 Chatbot
<ul style="list-style-type: none">• Hi!• What's your name?• Tell me about you!• Can you help me?	  

⑤ 5. Draw Chatbot



Duration:

30–40 minutes (can be extended or used in stations)

Activity 5: AI Mystery Bag – Story Prompt Challenge

Description:

Ss receive a “mystery bag” of story elements generated by AI (e.g., character, place, object) and must work in pairs or groups to co-write a short story using all elements. They ask AI for support with vocabulary, grammar, or plot suggestions. This flexible activity promotes creativity, group work, and AI literacy while supporting inclusive and differentiated instruction.

Instructions:

1. Warm-Up: What’s in the Bag? (5 minutes)

- T projects or show one example of a random “mystery bag” prompt set:
 - 🧙 A wizard with no memory
 - 🏝️ A floating island
 - 🕒 A broken clock
- Ask Ss:
 - “What kind of story could start here?”
- Let them share short, imaginative guesses.

Adaptation for special needs students:

T: Use visual cards and emojis. Ss can draw one element and guess what might happen.

2. Get a Mystery Bag from AI (5 minutes)

- Ss (or teachers) ask [ChatGPT](#): “Give me 3 random things to include in a story: one character, one setting, and one object,” or “I’m 13 years old and learning English. Give me 3 easy and fun story elements.”
- Each pair gets a different set. Example:
- Character: A sleepy cat detective
- Place: A haunted bakery
- Object: A golden key

Adaptation for special needs students:

T provides pre-printed, illustrated prompt cards with icons and/or simplified options.

3. Story Creation with AI Help (15 minutes)

- Ss: In groups of 2–3 Ss:
- Write a short story using the 3 elements
- Use [ChatGPT](#) or [MagicSchool.ai](#) to:
 - Check spelling/grammar
 - Suggest a good title
 - Help write the ending
- Optional: Ss can tell the story as a comic, podcast, or AI-generated illustrated book.

Adaptation for special needs students:

T: Offer fill-in-the-gap templates, sentence starters or allow storytelling via drawing and voice recordings.

4. Quick Story Share (5 minutes)

- Ss: Groups present their story in a **1-minute pitch** (live or recorded).
Class votes on:
 - 🧩 Most unexpected story
 - 😂 Funniest idea
 - 🌟 Best teamwork

Adaptation for special needs students:

Ss can use images, audio or nominate a peer to present on their behalf. Provide voting via smiley face stickers or hand signs.

5. Assessment:

Criteria	✅ Excellent (3)	😊 Very Good (2)	⚠️ Needs Work (1)
Story completion	Story includes all 3 elements in a clear, creative way	Story includes 2+ elements with some logic	Story is incomplete or missing key elements
Teamwork	Group collaborated fairly and shared ideas	Some collaboration with uneven input	One student led or others did not contribute
Language use	Clear writing with interesting vocabulary	Mostly clear; a few mistakes	Errors interfere with understanding
AI use	AI used creatively for prompts or corrections	AI used for part of task	Little or no AI support used

Adaptation for special needs students:

- Adjust focus to effort and engagement
- Accept oral, visual, or supported written output
- Provide sentence frames and pre-written vocabulary options

Teaching Materials:

Digital Tools:

- [ChatGPT](#) / [MagicSchool.ai](#) – for prompts, feedback, grammar support
- [Canva](#) or StoryJumper—for visual storytelling (optional)
- [Padlet](#) – for sharing stories or pitches

Printed Materials:

- Story element cards with icons
- Story-writing template
- Voting sheet or emoji stickers

Duration:

25–30 minutes

Activity 6: “Sound It Out!” – AI Audio Adventures for Listening & Speaking

Description:

Ss improve their listening and speaking skills through an engaging AI-powered audio activity. They create mini listening tasks using AI-generated audio clips based on chosen vocabulary themes or topics (e.g., animals, friendship, time travel). Then, they perform comprehension challenges and record their responses. This activity encourages pronunciation practice, active listening, and expressive speaking—adaptable to all proficiency levels.

Instructions:

1. Warm-Up: “Mystery Sound Minute” (5 minutes)

- T plays a short, AI-generated soundscape or voice clip (e.g., from ElevenLabs, TTSMP3, or NaturalReader).
- Ask Ss:
 - 🔍 “What do you think is happening?”
 - 🎧 “Where might the events be taking place?”
 - 🗣️ “What words did you catch?”

Adaptation for special needs students:

- T provides transcripts or simplified keywords.
- Ss may draw what they hear or choose from picture options.

2. Choose Your Audio Theme (5 minutes)

- Ss choose a theme or topic of interest (e.g., “space adventure”, “school drama”, or “zoo chaos”) using a class list or by prompting AI:
- 🧠 *Prompt for ChatGPT:*
I’m 13 and learning English. Give me a 30-second script for a funny audio scene about a robot at school.
- Then, paste the script into a text-to-speech tool to generate audio (you can choose among VoxWorker, NaturalReader Online, ReadLoud, Google Text-to-Speech + Docs)

Adaptation for special needs students:

- T offers pre-made scripts and audio clips.
- Ss can choose from illustrated cards linked to audio files.

3. Listen & Create a Quiz (10 minutes)

- Ss
 - Listen to their chosen audio.
 - Create 2–3 simple comprehension questions (e.g., “Where was the robot?” “What food did it order?”).
 - Share questions with peers.

Adaptation for special needs students:

- T provides question starters or visual yes/no cards.
- Ss may use a multiple-choice template or give oral responses.

4. Record Your Own Audio (10–15 minutes)

- Ss re-record the dialogue (or their version) using [Vocaroo](#), [Voice Spice](#), or Narration Box.
- Optionally, add emotion or character voices!
- Share the recordings on [Padlet](#) or via QR code.

Adaptation for special needs students:

- Ss work in pairs.
- T provides sentence starters, scripts or audio sentence chunks to repeat.
- Allow use of AAC tools or speech-to-text, if needed.

5. Audio Gallery Walk & Feedback (5–10 minutes)

- Ss
 - Listen to 1–2 peer recordings.
 - Leave a voice comment or emoji rating.
 - Answer: “What was the funniest/clearest word or part you heard?”

Adaptation for special needs students:

- Use emoji stickers, sentence stems, or simplified questions.
- Provide oral reflection options instead of written comments.

Teaching Materials:

Digital Tools:

- [ChatGPT](#) / [MagicSchool.ai](#) – for script generation
- NaturalReader / TTSMP3 / ElevenLabs – text-to-speech audio
- [Vocaroo](#) / [Voice Spice](#) – recording tool
- [Padlet](#)—sharing recordings and peer feedback
- [Canva](#)—optional cover design for each “audio story”

Printable Resources:

- Listening comprehension template
- Visual vocabulary list
- Feedback stickers or reflection prompts

Assessment:

Criteria	✔ Excellent (3)	😊 Very Good (2)	⚠ Needs Work (1)
Listening comprehension	Accurate answers with explanations	Mostly correct	Limited or unclear responses
Pronunciation & fluency	Clear and expressive	Mostly clear	Hesitant or unclear
Use of AI tools	Used creatively and independently	Used with help	Little or no use
Peer interaction	Gave feedback and listened to others	Some feedback	No interaction
Engagement & effort	Enthusiastic and focused	Participated	Limited effort

Adaptation for special needs students:

- Focus on participation, creativity and engagement
- Allow alternative formats (e.g., pointing, drawing, voice clips instead of text)
- Use visual rubrics with emojis or smiley faces

Duration:

30–40 minutes (flexible, can be extended into two sessions)

Activity 7: Emoji Translator—Express Meaning with Words and Symbols

Description: In this fun and adaptive vocabulary and paraphrasing activity, Ss use emojis to represent key phrases or sentences and then challenge others to “translate” their emoji strings back into English. The task strengthens vocabulary recognition, paraphrasing, and inferencing skills in an engaging, game-like format. It also supports Ss with limited writing abilities by offering a visual alternative for expressing meaning.

Instructions:

1. Emoji Sentence Race” (5 minutes)

- T shows a sentence and three emoji choices
 - e.g., "I'm feeling nervous" → 🐱 🍕 😬
- Ss guess which emoji best fits and explain why.
- Variation: Ask ChatGPT to generate a silly emoji sentence and Ss guess what it means.

Adaptation for special needs students:

- T provides images next to each word/emoji.
- Ss may respond nonverbally (e.g., pointing, using reaction cards).

2. Create an Emoji Phrase (10 minutes)

Ss

- Choose or are given a short sentence, idiom or vocabulary expression (e.g., “break the ice,” “I’m hungry,” or “Let’s go!”).
- Translate the meaning into 3–5 emojis using the emoji keyboard or GetEmoji.com.
Example: “Let’s go to the beach!” → 🧑 🚿 🌞 🏖️ 🧴 😊

Adaptation for special needs students:

- T provides sentence starters and matching emojis.
- Ss can work in pairs or use emoji cards to build meaning.

3. Emoji Translation Challenge (10 minutes)

Ss

- Swap emoji strings with a classmate.
- Try to “translate” the emoji message into natural English.
- Check with the original creator for accuracy or suggestions.

Adaptation for special needs students:

- T: Use a sentence frame: “I think this means: ‘ _____.’”
- Allow for spoken or drawn responses.

4. Reverse Game – Word to Emoji (5–10 minutes)

Ss

- Get a new random sentence from [ChatGPT](#) or a teacher (e.g., “He ran away when he saw the ghost!”).
- Convert the sentence into emojis again and compare with others.
- Optional: Vote on the funniest or most accurate emoji sequence.

Adaptation for special needs students:

- T: provides a visual vocabulary bank.
- Ss may use cut-out emojis or choose from premade options.

5. Emoji Gallery & Class Vote (5–10 minutes)

Ss

- Post their favourite emoji sequences on [Padlet](#), slides, or a printed gallery.
- Vote using stickers, emoji cards or classroom polls:
 - 🎨 “Most Creative”
 - 🧠 “Most Accurate”
 - 😂 “Funniest Translation”

Adaptation for special needs students:

- T: Use simplified categories or a single voting symbol (e.g., stars or heart stickers).
- Allow peer support for sharing.

Teaching Materials:

Digital Tools:

- [ChatGPT](#)—for generating phrases/sentences
- [GetEmoji.com](#) – emoji search and copy tool
- [Padlet](#) or [Google Slides](#) – for emoji gallery

Printable Resources:

- Emoji keyboard sheet
- Sentence-to-emoji and emoji-to-sentence worksheet
- Peer feedback cards with sentence starters

Assessment:

Criteria	✅ Excellent (3)	😊 Very Good (2)	⚠️ Needs Work (1)
Vocabulary Use	Accurate and creative paraphrasing	Mostly clear; some mistakes	Misunderstood or vague
Emoji Representation	Clever and expressive emoji use	Appropriate but basic	Confusing or unrelated
Collaboration / Peer Work	Gave clear translations and feedback	Participated with one peer	Limited interaction
Effort & Engagement	Focused, creative, and on-task	Participated but needs support	Reluctant or off-task

Adaptation for special needs students:

- Simplify phrases or use icons alongside emojis
- Focus assessment on effort and engagement
- Use symbol-based or visual rubrics with 😊 😐 🙄 icons
- Allow peer scribing or verbal sharing

Duration:

30–35 minutes (can be extended for enrichment or homework)

Activity 8: AI Comic Remix – Rewriting Stories with Style

Description:

In this creative activity, Ss take a short comic strip or story and use AI tools to rewrite the dialogue in a new style or tone—turning a fairy tale into a sci-fi scene, a dramatic moment into comedy, or adding slang, rhymes, or emoji speech. Then they illustrate or reformat it as a digital comic using Canva, Pixton or StoryboardThat. This activity builds vocabulary flexibility, dialogue writing skills and multimodal storytelling.

Instructions:

1. Warm-Up: “Change the Mood!” (5 minutes)

- T displays a comic strip panel (e.g., a student dropping their books) and asks: *“How would this scene sound in a horror movie? As a joke? Like Shakespeare?”*
- Encourages Ss to try different voice styles or register changes.

Adaptation for special needs students:

- T: Provides visual emotion icons or mood flashcards.
- Ss act out or draw instead of saying responses.

2. Choose or Generate a Scene (5–10 minutes)

- Ss: Choose a short comic or story scene (from teacher handouts, books or websites).
- OR ask ChatGPT: “Give me a short 4-line story about a dog who finds a treasure.” Ss copy the text and brainstorm how to change the tone/style.

Adaptation for special needs students:

- T: Provides 2–3 pre-selected short texts with images.
- Uses comic templates with simplified text.

3. Rewrite the Dialogue with AI Help (10–15 minutes)

- Ss: Use ChatGPT or MagicSchool.ai to rewrite the dialogue in a different style: *“I want this story to sound like a poem/rap/fantasy story / Gen Z slang/sci-fi.”*
- Copy and edit the AI’s version for clarity and fun.

Example Prompt:

“Rewrite this dialogue from a fairy tale in the style of a sci-fi comic for teens.”

Adaptation for special needs students:

- T: Offers sentence starters or scaffolded comic scripts.
- Allows oral storytelling or use visuals with text-to-speech.

4. Design a Comic Strip (10–15 minutes)

- Ss: Use [Canva](#) Comic Maker, StoryboardThat, or Pixton to recreate the story with visuals.
- Add their rewritten dialogue in speech bubbles.
- Optional: Print and colour or use AI-generated characters for visual variety.

Adaptation for special needs students:

- T: provides ready-made comic frames to drag and drop elements.
- Allows drawing or use stickers and speech cards instead of writing.

5. Comic Gallery Share & Vote (5–10 minutes)

- Ss: Upload or present comics on [Padlet](#) or the classroom wall.
- Vote for:
 - 🗳️ “Best Transformation”
 - 😂 “Funniest Dialogue”
 - 🎨 “Most Creative Comic Design”

Adaptation for special needs students:

- Use emoji voting cards or dot stickers.
- Ss can record a short comment instead of writing.

Teaching Materials:

Digital Tools:

- ChatGPT / MagicSchool.ai – for rewriting dialogues
- [Canva](#) Comic Strip / Pixton / StoryboardThat – for comic creation
- [Padlet](#) / [Google Slides](#) – for gallery sharing
- Online comic samples (e.g., MakeBeliefsComix)

Printable Resources:

- Comic template (3–4 panel strip)
- Comic dialogue starters
- Voting slips with emoji faces
- Visual style guide (comic vs. sci-fi vs. Shakespeare, etc.)

Assessment:

Criteria	✅ Excellent (3)	😊 Very Good (2)	⚠️ Needs Work (1)
Dialogue Transformation	Creative, clearly adapted to new style	Mostly adapted, some changes	Minimal transformation
Comic Design	Visuals and layout support story	Clear but basic design	Confusing or incomplete visuals
Language Use	Varied vocabulary, accurate usage	Mostly clear, few errors	Unclear or repetitive language
AI Engagement	Effectively used AI to enhance content	Some AI support used	Little or no AI tool usage
Peer Interaction	Shared and responded to feedback	Participated briefly	No sharing or peer interaction

Duration:

35–45 minutes (flexible; can be extended across two sessions)



Activity 9: Word Potion Lab – Mix Words to Create Magic!

Description:

Ss step into the role of magical linguists who invent “word potions” by combining English words (nouns, verbs, adjectives) into imaginative formulas with special effects (e.g., “a potion for courage,” “a spell for flying”). They use AI to invent new words, create potion labels, write short incantations or instructions, and present their creations in a “Potion Fair.” This activity strengthens word associations, descriptive writing, and imaginative language use while offering multimodal and inclusive options for participation.

Instructions:




1. Warm-Up: “Potion Brainstorm” (5 minutes)

- T shows example prompt:
 -  “What would you put in a potion to feel brave?”
 -  Ss brainstorm 3 words (e.g., lion, fire, sunlight) and what powers they would give.
- Variation: Use ChatGPT to generate silly potion names, and Ss guess what they do.
Prompt: “Give me 3 funny potion names for teenagers learning English.”

Adaptation for special needs students:

- Use visuals and objects to represent ingredients (e.g., picture of a heart = love).
- Ss respond using stickers, drawings or pointing to images.

2. Mix Your Word Potion (10–15 minutes)

- Ss: Choose a “potion purpose” (e.g., to be invisible, to speak confidently, to make someone laugh).
- Choose 3–5 vocabulary words (or ask AI):
Prompt: “Give me 5 words to include in a potion for someone who wants to be a better speaker.”
- Write a potion recipe using those words, e.g.:
 -  1 whisper of courage
 -  2 feathers of clarity
 -  A splash of calm

Adaptation for special needs students:

- T: provides illustrated vocabulary lists.
- Uses cut-and-paste or drag-and-drop icons into a “recipe card.”
- Allows oral description instead of written.

3. Write the Spell or Instructions (10 minutes)

- Ss
 - Use a scaffold like:
 - ✨ “To activate the potion, you must say...”
 - 🧙 “Mix at midnight under a full moon and say the magic word: _____.”
 - Ask ChatGPT to help if stuck:
Prompt: “Write a short, fun magic spell for a potion that makes people laugh.”

Adaptation for special needs students:

- T: Sentence starters and word banks provided.
- Ss may record their spell orally or use voice-to-text.

4. Design Your Potion Bottle (10 minutes)

- Ss
 - Use [Canva](#), Book Creator, or hand-drawn templates to design a potion label. Include:
 - 🧴 Potion Name
 - 🥄 Ingredients
 - 🧠 Effects
 - 🧙♂️ A spell or warning

Optional: Use DALL·E to generate a magical bottle image.

Adaptation for special needs students:

T: Pre-made templates and symbols available.

Allow creative formats: sticker collage, emoji label, audio-only spell.

5. Potion Fair & Peer Review (5–10 minutes)

- Ss
 - Present their potions to the class, in small groups or on [Padlet](#).
 - Peers vote on:
 - 🧠 “Most Inventive Potion”
 - 🧙 “Best Word Use”
 - 🧴 “Coolest Spell”

Adaptation for special needs students:

- T: facilitates a sensory-friendly space with fewer presentations at once.
- Use emojis or peer buddies to help give feedback.

Teaching Materials:

Digital Tools:

- ChatGPT / MagicSchool.ai – word suggestions and spell writing
- [Canva](#) / Book Creator – potion label design
- [Padlet](#) – for potion gallery
- DALL·E – for visual potion bottle art

Printable Resources:

- Potion recipe card template
- Illustrated vocabulary cards
- Emoji-based voting cards
- Label template with fill-in-the-blank options

Assessment:

Criteria	✅ Excellent (3)	😊 Very Good (2)	⚠️ Needs Work (1)
Vocabulary Use	Imaginative and accurate	Mostly accurate	Limited or unclear usage
Creativity & Originality	Unique potion concept and spell	Some creative elements	Generic or underdeveloped idea
Language Expression	Clear recipe and spell instructions	Mostly clear, a few mistakes	Confusing or incomplete
Multimodal Engagement	Used visuals or audio effectively	Visuals included, basic quality	Missing or unrelated visuals/audio
Peer Interaction	Shared and gave thoughtful votes	Participated in peer review	No interaction

Adaptation for special needs students:

- Focus assessment on participation and engagement
- Allow multiple expression formats (visual, oral, symbolic)
- Use simplified rubrics with emojis or icons

Duration:

35–45 minutes (flexible; ideal for end-of-unit celebration or creative language day)

Activity 10: 'Invent-a-Word Dictionary'—Creative Vocabulary Mashups

Description:

Ss invent their own English words by blending two or more real ones (e.g., “hangry” = hungry + angry), then write humorous dictionary-style entries with meanings, example sentences, and even pronunciation guides. This activity promotes vocabulary awareness, word formation, spelling patterns, and creative writing — while encouraging playful risk-taking with language.

Instructions:

1. Warm-Up: “Guess That Word!” (5–7 minutes)

- T presents some real English blend words (portmanteaus) like:
 - brunch (breakfast + lunch)
 - smog (smoke + fog)
 - motel (motor + hotel)
- Ss guess the original words and their meanings.
- Optional: Use ChatGPT to generate silly fake words and Ss guess what they could mean.

Adaptation for special needs students:

T: Provide visuals or icons to represent the base words.

Use a matching activity or emoji-based guessing game.

2. Invent a New Word (10–15 minutes)

- Ss
 - Combine two English words (e.g., “chat” + “tornado” = *chornado* = “a super fast speaker”)
 - Ask ChatGPT for inspiration:
 - 🧠 *Prompt:* “Give me 5 silly invented English words for emotions or behaviours and explain what they mean.”
 - Choose one and personalise it.

Adaptation for special needs students:

T: Offers a list of pre-selected word pairs with meanings.

Ss can draw their invented word or use icon-based building blocks.

3. Write a Mini Dictionary Entry (10–15 minutes)

- Ss
 - Write an entry that includes:
- Word (with pronunciation, optional)
- Part of speech (e.g., noun, verb)
- Definition
- Example sentence
- “How/When to use it” tip
 - Example:
Word: *snaxident*
(noun)—When you accidentally eat all your snacks.
Example: “I had a snaxident during the movie and ate all the popcorn in 10 minutes.”
Use it when: You want to make excuses in a funny way.

Adaptation for special needs students:

- T: Uses sentence starters or a fill-in-the-blanks template.
- Allows voice recordings or illustrations instead of writing.




4. Design a Dictionary Page or Flashcard (10 minutes)

- Ss
 - Use [Canva](#), [Google Slides](#), or paper to design a card for their invented word.
 - Include a picture, emoji, or AI-generated image using DALL·E or Craiyon.

Adaptation for special needs students:

- T: Uses drag-and-drop digital templates or pre-cut visual aids.
- Focuses on visual presentation with minimal text.

5. Word Wall Share & Vote (5–10 minutes)

- Ss
 - Share their invented words on a “Future Dictionary Wall” ([Padlet](#) or classroom display).
 - Vote on:
 -  “Funniest Word”
 -  “Most Useful Word”
 -  “Most Creative Idea”

Adaptation for special needs students:

- T: Uses emoji stickers or visual rating scales.
- Allows pointing, audio comments or buddy voting.

Teaching Materials:

Digital Tools:

- ChatGPT / MagicSchool.ai – word idea generator
- [Canva](#) / [Google Slides](#) – for visual dictionary cards
- DALL·E / Craiyon – image creation for invented words
- [Padlet](#) – for final display and peer feedback

Printable Resources:

- Dictionary entry template
- Word-blending suggestion list
- Emoji voting cards

Assessment:

Criteria	✅ Excellent (3)	😊 Very Good (2)	⚠️ Needs Work (1)
Creativity & Wordplay	Inventive, funny or expressive word	Some originality shown	Generic or copied idea
Vocabulary Awareness	Clear blend and real word connection	Mostly understandable meaning	Unclear or forced blend
Example Sentence	Shows meaning in context	Understandable but basic	Unclear or missing
Visual Presentation	Effective use of design and image	Basic but present	Minimal or unrelated visuals
Peer Interaction	Shared and gave feedback	Participated with one peer	Did not share

Adaptation for special needs students:

- Emphasize expression and participation over grammar
- Offer visual support, voice tools, or assistive tech
- Use symbol-based reflection tools

Extra resources

Pre-Selected Word Pairs for Invented Words

 Invented Word	 Original Words	 Meaning / Prompt
snaxident	snack + accident	You ate all your snacks by mistake. “Have you ever had a snaxident during a movie?”
hangry	hungry + angry	Bad mood caused by hunger. “Why do you think people get hangry?”
glumbrella	gloomy + umbrella	An umbrella that appears when you’re sad. “What kind of day might need a glumbrella?”
frienemy	friend + enemy	Someone who acts like a friend but isn’t. “Can a frienemy become a real friend?”
smelfie	smell + selfie	A photo of your reaction to a strange smell. “What would your smelfie face look like?”
lazernoon	lazy + afternoon	A very slow, relaxed day. “Describe your perfect lazernoon.”
textpectation	text + expectation	The feeling when you're waiting for someone to reply. “How do you feel during textpectation?”
mockbuster	mock + blockbuster	A low-budget copy of a famous movie. “Have you ever watched a mockbuster film?”
snoozination	snooze + imagination	Daydreaming while half asleep. “What do you imagine during snoozination?”
grumpet	grumpy + puppet	A puppet who’s always in a bad mood. “What might a grumpet say to cheer up?”
zombify	zombie + amplify	To act like a zombie after too much screen time. “What zombifies students these days?”
fanglish	fantasy + English	The magical way wizards or fairies speak. “Can you write a sentence in Fanglish?”

Bonus Ideas & Add-Ons

Invent-a-Word Dice

- Create a two-dice game with word parts:
 - Dice 1: verbs or emotions (laugh, run, love, sleep, stress)
 - Dice 2: nouns or actions (phone, homework, rain, shoes, robot)
- Ss roll and combine results (e.g., laugh + robot = laughbot) → define it!

Emoji Dictionary Version

- Ss pick 2–3 emojis to go with their invented word.
- Example: *snaxident* = 🎉👤😄
- Others guess the meaning based on emojis, then see if they're right.

Duration:

30–40 minutes (can be extended into a class “Mini Dictionary Book”)

Closure:

Description:

The closure session provides a reflective and celebratory wrap-up of Module 3. Ss revisit the language skills they've practiced, explore their favourite tools and activities, and articulate how their English abilities have grown through the module's interactive, AI-assisted approach. The session promotes metacognitive awareness, peer encouragement, and a sense of accomplishment, while reinforcing inclusive participation for all learners.

Instructions:

1. Memory Wall: My Favourite Moment (10 minutes)

- T asks Ss to think about one moment, tool, or activity they enjoyed most in Module 3.
- Ss write or draw their answer on a sticky note or digital [Padlet](#).
- Sentence starters:
 - “My favourite part was...”
 - “I felt proud when...”
 - “One new thing I tried was...”

Adaptation for special needs students:

- Use icons or emoji stickers.
- Allow oral responses, drawings, or assistive tech.

2. Reflection Circle: What I Can Do Now (10 minutes)

- T leads a class circle (in person or virtual), inviting each student to complete:
 - “Now I can...” (e.g., “...create a story with AI,” “...speak more confidently,” “...use new words.”)
- Ss may share aloud, type into a collaborative slide, or record a voice note.

Adaptation for special needs students:

- Provide “Now I can...” sentence cards with visuals.
- Use peer support or record responses in advance.

3. Feedback Time: Star, Wish, Wonder (5–10 minutes)

- **Ss:** Complete a short feedback card or slide:
 - ★ A star: “One thing I liked”
 - 🌈 A wish: “Something I want more of”
 - 💭 A wonder: “A question or idea I have”
- Option: Use [Padlet](#) columns for digital input.

Adaptation for special needs students:

- Provide sentence frames, sticker choices, or symbols.
- Accept voice notes or pictorial feedback.

4. Certificate or Badge of Participation (Optional)

- T: Awards digital or paper “Language Explorer” certificates or AI-themed badges.
- Celebrates creativity, effort, collaboration, and openness to new tools.

Teaching Materials:

- Sticky notes or [Padlet](#) (Memory Wall)
- Reflection sentence starters or “Now I Can” cards
- Printable or digital feedback templates (★🌈💭)
- [Canva](#)/ PowerPoint – for certificate or badge design
- Optional: Audio recording tools (Vocaroo, Read&Write)

Duration:

30–40 minutes (flexible; can be extended with sharing or project display)

MODULE 4

Inclusive Science Explorations



Authors: Ankica Šarić and Helga Kraljik

Institution: Srednja škola Ban Josip Jelačić, Zaprrešić, Croatia

1. Module Description

In this module, students will embark on exciting and interactive explorations that blend scientific inquiry with creativity, critical thinking, and technology. From CSI-style mysteries and virtual field trips to cosmic identity design and debates on sustainability, each activity is designed to spark curiosity and deepen understanding. Students will investigate the human body, ecosystems, space, and environmental challenges while using AI tools, digital simulations, and collaborative storytelling to bring their learning to life. They will develop a stronger connection to science while embracing inclusivity and accessibility, as well as fostering different learning styles in the learning process.

2. Content and activities of the module

Content

- Adaptive Science Simulations
 - Using AI-powered tools and virtual platforms to simulate scientific concepts, from space exploration to human anatomy, allowing students to interact with content dynamically.

- Virtual Experiments
 - Students can participate in virtual labs or experiments, like testing environmental factors or simulating biological processes, to explore scientific phenomena in a hands-on way.
- Multimedia Science Resources
 - Integration of videos, infographics, 3D models, and digital simulations to enhance understanding of scientific principles and increase accessibility for diverse learners.
- Astronomy and Space Science
 - Students explore the solar system, learn about celestial objects, and engage in creative tasks like designing a habitable planet or creating a "Cosmic Identity."
- Human Biology and Anatomy
 - Detailed exploration of body systems, anatomy, and physiological processes through interactive CSI-style mysteries and anatomical models.
- Environmental Science and Sustainability
 - Discussions on climate change, ecosystems, and sustainability, with virtual field trips to national parks and debates on sustainability solutions.
- Critical Thinking and Problem-Solving
 - Applying scientific knowledge to solve complex problems, like cracking a case in a CSI mystery or designing a sustainable planet in the solar system.

Activities

- Warm-Up Activity – "Would You Rather"
 - A fun and engaging starter activity where students choose between two creative, science-related scenarios (e.g., "Would you rather have Marie Curie as your chemistry lab partner..."), prompting students to think critically about science in a lighthearted way.
- Cosmic Identity Design
 - Students imagine themselves as a celestial object (e.g., a planet, star, galaxy) and design a "Cosmic Identity" poster using AI tools to create visuals and write descriptions. This activity fosters creativity and connects personal identity with space science.

- Virtual Field Trip: A Journey Through the Solar System
 - Students explore the solar system, learning about Earth's uniqueness and using creativity to design a habitable planet with key survival features.
- Virtual Field Trip – Exploring National Parks
 - Students embark on a virtual journey to explore national parks worldwide, learning about ecosystems, biodiversity, and conservation efforts. Through interactive discussions and AI tools, they deepen their understanding of environmental protection and sustainable practices.
- Body Systems in Action
 - Students explore how different body systems collaborate to perform daily tasks, creating comic strips and skits to demonstrate their cooperation. Through team activities, they gain a deeper understanding of anatomy and physiology in a creative and engaging way.
- CSI Spy Mystery: Cracking the Case of the Human Body
 - Students work together to solve a mystery using knowledge of human body systems. They analyze clues and match them to anatomical models and scientific knowledge to eliminate suspects and solve the case.
- Sweet Truths: Understanding Chocolate Production and Fair Trade
 - Students investigate the hidden story behind chocolate production by analyzing evidence about cocoa farming, environmental impact, and workers' rights.
- Virtual Debate on Sustainability and Climate Action
 - Students participate in a debate representing different countries or organizations, discussing critical issues like electric cars, deforestation, and plastic pollution. They use AI tools to design avatars and prepare arguments to defend their positions.
- Science Escape Room
 - In teams, students work through a series of science-themed puzzles, using clues from various activities (AI-generated riddles, trivia, and problem-solving tasks) to "escape" in time. This activity reinforces scientific concepts in a fun, competitive format.
- Scavenger Hunt on AI and IoT Concepts
 - Students use a Google Form to engage in an interactive scavenger hunt, using QR codes to unlock resources and solve questions related to AI and Internet of Things concepts.
- HerStory Makers: Celebrating Female Scientists
 - Students research the lives and achievements of female scientists and create a collaborative video with AI tools, highlighting their contributions and developing an interactive quiz for other classes to learn from.

3. Module Objectives

- a. Engaging in interactive and adaptive science activities using AI tools, virtual simulations, and creative storytelling
- b. Exploring scientific concepts across different fields, including astronomy, human biology, environmental science, and sustainability
- c. Developing critical thinking and problem-solving skills by participating in debates, mystery-solving challenges, and escape room activities
- d. Enhancing digital literacy and collaboration through multimedia science resources and virtual field trips
- e. Fostering an inclusive learning environment by offering multiple ways for students to express their understanding, including visual, verbal, and hands-on approaches

4. Module Learning Outcomes

- a. Demonstrate understanding of complex science concepts by applying them to real-world scenarios and creative tasks.
- b. Create digital and visual representations of scientific ideas, such as AI-generated posters, virtual planet designs, and comic strips.
- c. Analyze and solve scientific challenges using logical reasoning and collaborative teamwork, such as in the CSI mystery and escape room.
- d. Articulate and defend viewpoints on sustainability and environmental issues in a structured debate format.
- e. Reflect on their learning experiences and make connections between science, technology, and personal interests.

5. Key Words

science, STEM, sustainability, scientists, experiments, virtual field trips, inclusion, AI tools, innovation, debate, multimedia, innovative learning, gamification, critical thinking, collaboration, creativity, communication

6. Methodology

Inquiry-Based Learning, Collaborative Learning, Gamification, Differentiated Instruction, Project-Based Learning (PBL), Technology-Enhanced Learning, Flipped Classroom, Scaffolded Learning

Adaptive Learning Scenario

Warm-up & Energizers:

Description:

To introduce the module, students will participate in a Would You Rather? warm-up activity designed to stimulate curiosity and creative thinking. This interactive exercise presents humorous yet thought-provoking scenarios that blend scientific ideas with imaginative possibilities—such as sweating recycled water, exploring a planet made of trampolines, or having Isaac Newton as a gym teacher. By engaging in these discussions, students will begin to see science as both relevant and accessible.

Instructions:

1. Would you rather? (25 minutes)

- T introduces the “Would You Rather?” activity:
 - Ss play the game in groups.
 - Cards are placed face down in the centre of the table.
 - One student at a time will pick a card, read the question aloud, and give their answer.
 - Ss discuss their answers together.
 - Ss report back to their most interesting discussions.

2. Creating Science Memes (20 minutes)

- Inspired by one of the questions, Ss create memes using meme generators.
- Ss upload their memes on the Padlet Wall.
- Ss give stars and comment on their peers’ memes.

Teaching Materials:

- Digital Tools:
 - [Auto Classmate](#)
 - [Padlet](#)
- [Breaking News Generator!](#)
- [Break Your Own News - Breaking News Generator](#)
- [MemeCam](#)

Assessment:

Formative Assessment: Ss give stars and write comments

Duration:

45 minutes

Would you rather cards:

1. Would you rather have Marie Curie as your chemistry lab partner and risk glowing in the dark, or have her overheat your phone with her radioactive discoveries every time you text?
2. Would you rather visit a habitable planet where everything tastes like broccoli, or stay on Earth where you can only eat planets-shaped cookies?
3. Would you rather explore an undiscovered national park made entirely of trampolines, or one where each tree whispers historical gossip about famous scientists?
4. Would you rather sweat recycled water in a world trying to solve climate change, or sneeze out eco-friendly confetti every time you laugh?
5. Would you rather have lungs that can convert CO₂ directly into Bluetooth signals, or a digestive system that turns every meal into scientific theories?
6. Would you rather live in a solar system where every planet is named after a female scientist and confuses astronomers, or an Earth where all planets have to apply for new names through a talent show?
7. Would you rather be able to photosynthesize like a plant whenever you're in a national park, or have the ability to speak to animals who always ask you for math homework help?
8. Would you rather have the ability to control the weather and end climate change, but only while singing really off-key, or solve environmental issues by solving the world's largest jigsaw puzzle?
9. Would you rather have Isaac Newton as your gym teacher who constantly gets distracted by discovering gravity, or have him coach your science softball team with only theoretical wins?
10. Would you rather have your heart beat to the rhythm of a new Marvel film soundtrack, thanks to advanced bioengineering, or have each sneeze power a small light bulb for eco-friendliness?

The main part:

Activity 1: Cosmic Identity Design

Description:

Students will imagine themselves as a celestial object (e.g., a star, planet, galaxy) that reflects their personal traits, values, or aspirations. They will use AI tools to generate visuals and text, creating a "Cosmic Identity" poster. The activity engages all learners by blending science with creativity, offering multiple ways to participate and express themselves.

Instructions:

1. Introduce celestial objects (10 minutes)

- T introduces the concept of cosmic identity, explaining how everyone can envision themselves as a unique part of the universe.
- Students (Ss) brainstorm celestial objects; they use [Stellarium](#), a virtual planetarium to showcase celestial (astronomical) objects (the Sun, *stars, planets, moons, asteroids, comets, galaxies, nebulae, black holes...*).
- Ss describe the characteristics of the celestial objects they have found (*warm, radiant, luminous, majestic, diverse, mysterious, captivating, rocky, ancient, icy, spectacular, vast, stunning, ethereal, colorful, intense, intriguing, enigmatic...*).

Adaptation for special needs students:

T includes visual prompts of celestial objects and simplified options for selecting adjectives that resonate with them (hot, warm, radiant, mysterious, bright, powerful, colorful)

2. Describe personal identity through space (15 minutes)

- Ss reflect on their unique qualities, favorite colors, and personality traits.
- Ss use [ChatGPT](#) or a similar chatbot for personalized brainstorming.
 - Prompts:

If I were a celestial object(s), what could I be? I'd like something unique that shows I'm (*insert personality trait*). Can you give me some ideas?

I would like to be... I am ... (*personality traits*). My favorite color is... Can you suggest a celestial object(s) that reflect(s) this dream and explain how it connects to me?

- Additional questions:

Can you explain more about how _____ (*celestial object*) connects to people who are _____ (*personal traits*)?

What makes _____ (*celestial object*) unique or special in space?

Adaptation for special needs students:

- T provides image [Presentation of celestial objects](#) with basic descriptions (e.g., a glowing star labeled “Bright and Positive,” a serene moon labeled “Calm and Reflective”).
- Ss use pre-written sentences to complete, such as:
 - “I am like a _____ because I am _____.”
 - “My favorite color is _____, so I feel connected to _____ in space.”

3. Design Cosmic Identity Poster (30 minutes)

- Ss use [Canva](#) AI Design Assistant to create their "Cosmic Identity" posters.
- Ss add AI-generated images (from tools like DALL-E, Chat GPT, or Canva) of their celestial objects and their avatars.
- Ss write an acrostic poem about their Cosmic Identity using prompts and suggestions from ChatGPT. Tips for creating an acrostic poem: use the celestial object as the word for the acrostic; reflect your traits in each line (e.g., kindness, curiosity, passion); add a touch of your favorite color or its meaning (e.g., gold for warmth, blue for calmness): e.g. Sun

*Shining brightly, I bring warmth to all,
Unstoppable energy, I stand tall.
Nurturing others, my golden glow inspires.*

- Ss record themselves reciting their acrostic poem using [vocaroo](#) and upload the audio or the QR code to their poster.
- Ss upload their posters on the [Padlet](#) wall.

Adaptation for special needs students:

- Ss write descriptions about their *Cosmic Identity* with the help of prewritten sentences and Chat GPT prompts. Ss use text-to-speech [Canva](#) AI or [Luvvoice](#) or some other text-to-speech AI tool.

4. Reflection

- Ss display their posters on the [Padlet](#) wall.
- Ss reflect on what they have learned about themselves through this activity in the form of a written comment.
- Ss evaluate each other's poster in the form of stars (1-5 stars) - [A checklist](#).

Teaching Materials:

- PC/laptop/smartphone with internet connection
- Digital Materials:
 - [Celestial Objects Presentation](#)
 - [A checklist](#)
- Digital Tools:
 - [Canva](#) AI for poster creation and text-to-audio
 - [Luvvoice](#) or [ElevenLabs](#) for creating audio from text
 - [Vocaroo](#) for creating audio
 - [ChatGPT](#) for brainstorming and text suggestions
 - [DALL-E](#) or [Canva](#) AI for generating custom visuals
 - [Padlet](#) for presenting and assessing posters
- Visual Aids:
 - [Stellarium](#) or NASA's Eyes for Celestial Object Exploration

Assessment:

- Formative assessment - [A checklist](#)

Duration:

60 minutes

Activity 2: Virtual Field Trip - A Journey Through the Solar System

Description:

Students will explore the solar system, understand Earth's uniqueness, and use creativity to design a habitable planet. The lesson includes detailed student instructions, adaptations for special needs, and AI tools.

Instructions:

1. Naming and Ordering Planets (10 minutes)

- T displays a visual [presentation](#) of the solar system on the screen, with planets in random order.
- Ss name the planets.
- In pairs, Ss order the planets from the sun.
- T introduces the mnemonic, "My Very Educated Mother Just Served Us Nachos," for Ss to remember the order.

Adaptation for special needs students:

- T provides [memory cards](#) with images and names of the planets in the solar system
- Ss practice saying the names of the planets with the help of online tools/dictionaries (eg. Google translator).
- Ss play memory with the cards practicing pronunciation of the names.
- Ss order the planets starting from the Sun.

2. Exploring Planet Characteristics (15 minutes)

Group work

- Ss brainstorm what they know about the planets.
- Ss watch the [video](#) created with the help of [Gamma](#), [Canva](#), and [Luvvoice](#) and make notes about the planets.
- Ss make a mind map using their notes and an AI tool [NoteGPT](#) and upload their mind maps to the [Padlet](#) Wall.

Adaptation for special needs students:

- Ss watch the [video](#) more than once and make one note about each planet.
- Ss use the AI tool [MyMapAI](#) and make a mind map with their notes.
- Ss upload their mindmaps on the Padlet wall.

3. Earth - A Special Planet (15 minutes)

- T introduces the topic by asking, "What makes Earth special?" (*Earth is the only planet we know of that supports life.*).

In groups,

- Ss brainstorm why Earth is the only planet that supports life on a piece of paper.
 - *Earth is special because ____.*
 - *Humans can live on Earth because ____.*
- Ss use AI brainstorming tool to generate more ideas: [Grammarly brainstorming generator](#).
- Ss exhibit their ideas on classroom walls for other students to see and compare.

Adaptation for special needs students:

- Ss work with other Ss in groups where they get peer support.

4. Designing a Habitable Planet (20 minutes)

Group work:

- Ss answer questions about their habitable planet with the help of the [Designing A Habitable Habitat](#) worksheet.
- Guiding questions:

- What is your planet's name?
- Where is your planet located?
- How big is your planet?
- What is the atmosphere made of?
- How will humans get oxygen to breathe?
- What will humans eat?
- What will humans drink?
- What is the surface of your planet like?
- What is the temperature range on your planet?
- Does your planet have water?
- Does your planet have gravity?
- What makes your planet unique (name some geographical features)?

- Ss design their habitable planet using an AI image generator ([Chat GPT](#); Bing, DALL-E, [Midjourney](#)...).
- Ss upload their worksheets and images on a Padlet Wall.

Adaptation for special needs students:

- Ss answer questions about their habitable planet in their worksheet with suggested answers
- Ss design their habitable planet using AI image generator

5. Wrap-Up and Reflection (5 minutes)

- Peer feedback:
 - Ss exhibit their ideas on the [Padlet](#) Wall for other students to see and comment on. Students give stars (1-5) and ask questions.
 - Each group answers questions about their planet.

Teaching Materials:

- PC/laptop/smartphone with Internet access
- Digital Materials
 - [Solar System](#) Presentation
 - [Solar System](#) memory cards
 - [Exploring Our Solar System](#) video
 - [Designing A Habitable Habitat](#) worksheet
- Digital Tools:
 - [Canva](#) - for filling the worksheet and creating a poster
 - [Luvvoice](#) - for creating audio from text
 - [Gamma](#) - for creating a presentation
 - [NoteGPT](#) and [MyMapAI](#) - for creating a mind map
 - [Grammarly brainstorming generator AI](#) brainstorming ideas
 - [Chat GPT](#); Bing, DALL-E, [Midjourney](#)... for generating custom visuals
 - [Padlet](#) for presenting and assessing worksheets and AI images

Assessment:

- Formative assessment: Padlet stars and comments (asking and answering questions).

Duration:

60 minutes

Activity 3: Virtual Field Trip - Exploring National Parks

Description:

Students will embark on a virtual field trip to explore and compare national parks around the world. They will learn about ecosystems, unique park features, conservation efforts, and biodiversity's importance. AI tools will enhance material creation and understanding, while differentiation ensures all learners, including those with special needs, can participate meaningfully.

Instructions:

1. Pre-Trip Preparation: Creating Itineraries (15 minutes)

- Ss choose a national park to explore (options: Yellowstone, Serengeti, or Great Barrier Reef).
- Ss generate a personalized itinerary for virtual tours highlighting park features, attractions, and notable flora/fauna by using Chabot (e.g. Chat GPT).

Adaptation for special needs students:

- Ss use AI tools like ChatGPT to answer prompts or suggest ideas for each blank in an [Itinerary Template](#) (these templates ensure that all students, including those with special needs, can meaningfully participate in the activity while scaffolding their learning experience).

2. Virtual Exploration Using 360-Degree Videos (15 minutes)

- In pairs, Ss explore the park virtually using 360-degree videos (e.g., Yellowstone on Google Earth, Serengeti on YouTube, or Great Barrier Reef on park websites) using Google Earth and webpages.
 - [Google Earth](#)
 - [Yellowstone Virtual Tour | VR 360° Travel Experience | Yellowstone National Park | WY, MT & ID](#)
 - [Yellowstone Park](#)
 - [Yellowstone National Park Virtual Tour In 360°](#)
 - [Serengeti National Park](#)
 - [Great Barrier Reef Underwater Coral reef in 360](#)
 - [Great Barrier Reef 360 virtual tour](#)
 - [Great Barrier Reef website](#)
- Ss ask AI chatbots questions about landmarks, animals, or conservation efforts. (e.g. "What animals live in the Great Barrier Reef?").

3. Creating Infographics (30 minutes)

- In pairs, Ss design an infographic about their chosen park, showcasing its wildlife, vegetation, climate, and conservation challenges using Canva AI Design Assistant.
- Ss review your itinerary for important points (e.g., *park features, notable animals, environmental issues*).
- Ss write down at least 5 key facts about the park.
- Ss categorize the information into sections for their infographic.
- Ss arrange your facts under the appropriate category.
- Ss select a template or layout for their infographic.
- Ss write the information in the template (headings, bullets, statistics, icons, images, charts).
- Ss use an [Infographic Checklist](#) to assess their work.

4. Reflective Journaling (30 minutes)

- Ss write a draft of their journal entry based on their virtual tour experience:
 - opening sentence (describing the park he/she explored and his/her overall impression)
 - key features of the park
 - the Importance of conservation
 - what they learned and how it changed their perspective
 - final thoughts
- S uses Quillbot to refine or enhance the text

Adaptation for special needs students:

- Ss write a *Journal Entry* with the help of a [template](#) (gap filling)

5. Conservation Campaign (30 minutes)

- Ss design a conservation campaign addressing a specific environmental issue in their chosen national park
- Ss brainstorm ideas for the campaign and input them into Napkin.ai
- Ss use Napkin.ai to categorize the ideas into actionable themes and create visuals
- Ss use the AI's suggestions to finalize campaign details
- Ss design a poster using Canva
- T assesses the Conservation Campaign using a [Conservation Campaign Rubric](#)

Criteria	Advanced (3 points)	Proficient (2 points)	Developing (1 point)
<i>Creativity</i>	Demonstrates exceptional originality in campaign design; innovative approach that goes beyond standard conservation strategies; unique and compelling visual presentation	Shows creative thinking with some original elements; clear effort to develop an interesting campaign concept	Limited creativity; relies on basic or generic conservation approaches
<i>Depth of Understanding</i>	Exhibits profound comprehension of the specific environmental issue; provides extensive research-based insights; demonstrates complex understanding of ecosystem interactions and conservation challenges	Demonstrates solid understanding of the environmental issue; includes relevant background information and basic ecological context	Shows minimal understanding; lacks substantive research or depth of environmental analysis
<i>Campaign Clarity</i>	Crystal clear communication of campaign goals; exceptionally well-organized presentation; compelling narrative that effectively communicates the conservation message	Clear communication of primary campaign objectives; coherent presentation with most key points addressed	Unclear or fragmented communication; struggles to convey the core conservation message
<i>Technological Integration</i>	Masterful use of Napkin.ai and Canva; sophisticated data visualization; seamless integration of AI-generated insights	Competent use of technological tools; basic data visualization and AI integration	Minimal or ineffective use of technological tools; limited engagement with AI suggestions
<i>Visual Design</i>	Professional-quality poster design; visually striking; demonstrates advanced graphic design skills and strategic visual communication	Well-designed poster with clear visual hierarchy; meets basic design principles	Basic or poorly executed visual design; lacks visual coherence

Total Possible Points: 15

- 13-15 points: Exceptional
- 10-12 points: Proficient
- 7-9 points: Developing
- 0-6 points: Needs Significant Improvement

Teaching Materials:

- PC/laptop/smartphone with Internet connection
- Digital Tools:
 - [Canva](#)
 - [Napkin.ai](#)
 - [Magic School](#)
 - [Quillbot](#)
 - [Chat GPT](#)

Digital materials:

- [Infographic Checklist](#)
- [Journal Entry for Special Needs Students](#)
- [Conservation Campaign Rubric](#)
- Visual Aids:
 - [Google Earth](#)
 - [Yellowstone Virtual Tour | VR 360° Travel Experience | Yellowstone National Park | WY, MT & ID](#)
 - [Yellowstone Park](#)
 - [Yellowstone National Park Virtual Tour In 360°](#)
 - [Serengeti National Park](#)
 - [Great Barrier Reef Underwater Coral reef in 360](#)
 - [Great Barrier Reef 360 virtual tour](#)
 - [Great Barrier Reef website](#)

Assessment

- Formative Assessment: [Infographic Checklist](#)
- Summative Assessment: [Conservation Campaign Rubric](#)

Duration:

120 minutes

Activity 4: CSI Spy Mystery: Cracking the Case of the Human Body

Description:

In this interactive and engaging lesson, students will become detectives tasked with solving a mystery using their knowledge of human body systems. Through diverse tasks and AI-assisted research, students will uncover clues related to various body systems to eliminate suspects and evidence. Using digital tools like 2D and 3D anatomical models, students will deepen their understanding of the organs and functions of key systems. This lesson encourages critical thinking, teamwork, and the integration of technology in learning.

Instructions:

1. Introduction: Welcome Agents (5 minutes)

- T sets the stage by introducing the "CSI Spy Mystery" theme:
 - *“A thief has broken into a supermarket and stolen all the money! It’s up to you, as anatomy detectives, to solve the mystery by uncovering clues about the human body systems.”*
- Ss brainstorm the 12 human body systems with the help of the [Body Systems Presentation](#)
- Ss provide definitions for each system.

Adaptation for special needs students:

- Ss do the task on the worksheet with pre-written system names and their definitions ([Body Systems Matching Exercise](#)).

KEY:

·**Skeletal:** Provides support and protection for the body.

·**Muscular:** Helps the body move.

·**Cardiovascular:** Circulates blood and oxygen throughout the body.

·**Digestive:** Breaks down food for energy.

·**Nervous:** Controls the body and sends signals to different parts.

·**Respiratory:** Brings in oxygen and removes carbon dioxide.

·**Endocrine:** Produces hormones to regulate the body.

Urinary: Removes waste and maintains water balance.

Immune: Protects the body from illness. **Reproductive:** Allows for reproduction.

Integumentary: Protects the body with skin, hair, and nails

2. Research Activity Using InnerBody (15 minutes)

- T introduces and guides Ss in using [InnerBody](#).
- Ss browse through each system.
- Ss identify the crucial organs for each system (e.g., “The nervous system includes the brain, spinal cord, and nerves.”).
- Ss use 2D and 3D models on the site to explore organ functions and locations.

Adaptation for special needs students:

- Ss browse through [InnerBody](#) with the help of their peers.
- Ss fill in the worksheet [Body Systems](#) with pre-written system names and partially completed organ lists.

3. Earning Clues (40 minutes)

- Ss complete tasks in pairs. Each task relates to a body system and provides clues that help solve the case.
- T monitors progress and provides support as needed.
- Ss do task by task on different types of Body Systems ([Body Systems Tasks](#)) and submit the completed task to the teacher to earn a clue ([Clue Cards: CSI Spy Mystery](#)).
- Students use InnerBody and AI to do the tasks.
 - Station 1: Nervous System (True/False)
 - Station 2: Skeletal System (Close Text)
 - Station 3: Cardiovascular System (Find and Fix)
 - Station 4: Respiratory and Digestive System (Multiple Choice)
 - Station 5: Reproductive System (Open-ended Questions)

Adaptation for special needs students:

- Ss are paired strategically to encourage peer support.

Body Systems Tasks - KEY

Nervous System Task	Skeletal System Task	Respiratory and Digestive Systems Task
<ol style="list-style-type: none"> 1. True 2. False 3. True 4. False 5. True 6. True 7. True 8. True 	<ol style="list-style-type: none"> 1. femur 2. skull 3. cartilage 4. humerus 5. clavicle 6. pelvis 7. ribcage 8. vertebrae 	<ol style="list-style-type: none"> 1. b 2. a 3. a 4. b 5. b 6. b 7. c 8. b

<p>Reproductive System Task</p>	<ol style="list-style-type: none"> 1. The primary function of the reproductive system is to produce, store, and release specialized cells (sperm in males and eggs in females) for reproduction and to ensure the continuation of the species. 2. a. Male organs: Testes, Penis, Prostate gland b. Female organs: Ovaries, Uterus, Fallopian tubes 3. a. Testosterone: Promotes the development of male secondary sexual characteristics (e.g., deeper voice, facial hair) and is essential for sperm production. b. Estrogen: Regulates the female menstrual cycle, promotes the development of female secondary sexual characteristics (e.g., breast development), and helps maintain pregnancy. 4. Fertilization occurs in the fallopian tubes when a sperm cell meets and fuses with an egg cell. This forms a zygote, which then travels to the uterus to implant and develop into an embryo.
<p>Cardiovascular System Task</p>	<p>The heart pumps blood to both the lungs and the body.</p> <p>Arteries carry oxygen-rich blood, veins carry deoxygenated blood.</p> <p>The heart is divided into four chambers: two atria and two ventricles.</p>

4. Solving the Mystery (20 minutes)

- Ss analyze clues to eliminate suspects and solve the mystery ([Crime Scene and Suspects](#)).
- Ss write their conclusion on a case report form, explaining their reasoning ([Detective's Case Report](#)).

KEY: The culprit is suspect 4.

Teaching Materials:

Digital Tools:

- [Chat GPT](#)

Digital materials:

- [Body Systems Presentation](#)
- [Body Systems Matching Exercise](#)
- [Body Systems](#)
- [Body Systems Tasks](#)
- [Clue Cards: CSI Spy Mystery](#)
- [Crime Scene and Suspects](#)
- [Detective's Case Report](#)

Visual Aids:

- [InnerBody](#)

Assessment:

Formative assessment:

- Quality of task completion (clue cards earned).
- Ability to solve the mystery using evidence.

Duration:

80 minutes

Activity 5: Body Systems in Action

Description:

In this engaging and interactive lesson, students will explore how body systems work together to perform everyday activities. The lesson will begin with an introduction to the major body systems using a labeled body diagram to help students visualize their roles. Students will then collaborate in teams to create comic strips based on fun, real-life scenarios that will highlight the cooperation between systems. Finally, students will bring their comics to life by acting out skits that will demonstrate the teamwork between body systems.

Instructions:

1. Interactive Body Diagrams (15 minutes)

- T randomly assigns a body system to each team.
- Ss create an interactive body diagram using AI tool (Canva AI Image Creator; [Adobe Firefly](#)).
- Ss label the main organs on the diagram and their functions in the system.
- Ss briefly report on the purpose of each system and the main system organs.

2. Working Together – A Comic Strip (45 minutes)

- T assigns one scenario to each group ([Working Together Scenarios](#)).
- Ss identify which body systems are involved in the scenario and how they interact.
- Ss plan the comic narrative by answering:
 - What's happening in the story?
 - How do the systems work together?
 - How will you show their collaboration visually?
- Ss finalize their digital comic with illustrations and dialogue using Pixton, Storyboard That or Canva or they use AI Image Creator to create specific images for each frame ([Working Together Comic Strip Template](#)).
- Ss use a checklist to assess their work ([Working Together Checklist](#)).

Adaptation for special needs students:

- T assigns a dialogue for a comic strip ([Working Together Dialogue](#)).
- Students follow the dialogue and create a comic strip with the illustrations Pixton, Storyboard That or Canva.

3. Body Systems in Action – A Skit (45 minutes)

- Ss turn their comic into a skit by creating a short script.
- Ss assign roles (*e.g., one student plays the heart, another the lungs*).
- Ss add dialogue and actions that bring the story to life.
- Ss rehearse the skit, focusing on how the systems interact.
- Ss perform the skit (2–3 minutes) in front of the class.

Summative Assessment: [Skit Performance: Body Systems Collaboration Rubric](#)

Criteria	3 Points (Exceeds Expectations)	2 Points (Meets Expectations)	1 Point (Needs Improvement)
<i>Script Development</i>	Develops a highly creative and scientifically accurate script that clearly demonstrates complex interactions between body systems	Creates a coherent script with basic interactions between body systems	Script lacks clarity and scientific accuracy of system interactions
<i>Role Assignment</i>	All team members are assigned precise, meaningful roles that demonstrate deep understanding of their body system's function	Most team members have clear roles representing different body systems	Roles are unclear or not effectively distributed
<i>Dialogue Quality</i>	Dialogue is sophisticated, scientifically precise, and engaging, showcasing advanced understanding of system interactions	Dialogue is clear and demonstrates basic understanding of system functions	Dialogue is minimal, confusing, or scientifically inaccurate
<i>Performance Technique</i>	Demonstrates exceptional stage presence, clear articulation, and creative physical representations of biological processes	Maintains consistent performance with moderate engagement	Performance is hesitant, unclear, or lacks enthusiasm
<i>System Collaboration Demonstration</i>	Brilliantly illustrates complex, interconnected relationships between multiple body systems with nuanced details	Shows basic interactions and connections between body systems	Fails to effectively demonstrate system interactions
<i>Timing and Length</i>	Precisely meets 2-3 minute requirement with well-paced, dynamic presentation	Stays within time frame with moderate pacing	Significantly under or over the time requirement

Scoring Guide:

- Total Points Possible: 18
- 16-18 Points: A (Excellent)
- 13-15 Points: B (Proficient)
- 10-12 Points: C (Developing)
- Below 10 Points: Needs Significant Improvement

4. Wrap-up (10 minutes)

- Reflexion
 - Ss answer questions:
 - What surprised you the most about how body systems work together?
 - Which body systems seemed to play the biggest role in your skits or comics?
 - What do you think would happen if one system stopped working properly?
- Recap Game
 - T points to a body part on a large body diagram [InnerBody](#) (e.g., lungs, stomach, brain, or heart).
 - Ss call out which systems are involved with that body part and quickly explain their roles.

Teaching Materials

- PC/laptop/smart phone with Internet connection
- Digital tools:
 - [Canva](#) AI Image Creator
 - [Pixton](#)
 - [Storyboard That](#)
 - [Adobe Firefly](#)
 - [Magic School](#)
- Digital Materials:
 - [Working Together Scenarios](#)
 - [Working Together Comic Strip Template](#)
 - [Working Together Dialogue](#)
- Visual Aids:
 - [InnerBody](#)

Assessment:

- Formative Assessment: [Working Together Checklist](#)
- Summative Assessment: [Skit Performance: Body Systems Collaboration Rubric](#)

Duration

115 minutes

Activity 6: Virtual Debate on Sustainability and Climate Action

Description:

In this dynamic and inclusive lesson, students will explore critical environmental issues through a structured classroom debate. Representing diverse countries and organizations, they will engage in thoughtful discussions on topics such as electric cars, deforestation, single-use plastics, nuclear energy, and meat consumption. Students will use AI tools to design avatars and prepare role-specific arguments, fostering creativity and critical thinking. The debate will encourage teamwork, public speaking, and the development of persuasive arguments.

Instructions:

1. Introduction (10 minutes)

- Ss answer questions:

What does "sustainability" mean to you?

Can you name some actions people take to live more sustainably?

What are some of the biggest environmental challenges the world faces today?

T introduces some of the issues Ss are going to debate by asking questions:

What are some benefits of using electric cars instead of gas-powered cars? What might be some challenges?

Do you think nuclear energy is a clean energy source? Why or why not?

How do single-use plastics affect the environment, especially oceans?

Does food production impact the environment? How?

2. Role Assignment (20 minutes)

- T briefly introduces the overall scenario: a virtual international climate conference addressing pressing environmental issues.
- In groups, Ss randomly choose a topic they are going to debate from [Debate Cards](#).
 - Debate topics:
 - Positive and Negative Aspects of Electric Cars.
 - The Role of Nuclear Energy in Sustainable Power.
 - Single-Use Plastics Ban.
 - The Impact of Meat Consumption on the Environment.

- Ss assign roles in their debate:
 - Are they pro or con team?
 - Which country/organization do they come from?
 - Who are they (government representatives, environmental activists, workers, industry leaders, farmers, engineers...)?

3. Argumentation (20 minutes)

- Ss use an AI tool like ChatGPT, Copilot or Elicit to generate quick, country-specific data and arguments and counterarguments for each role.
- Ss for their roles using [Functional Language for Debates](#).

4. AI-Driven Avatar Creation (20 minutes)

- Ss design avatars representing their assigned roles using AI avatar generators (Adobe Express Create Avatar / HeyGen Avatar / Animaker) or Canva video + Bitmoji avatar (appropriate clothes, colours, gestures, accessories, cultural elements background).
- Ss write and record their introduction (name, role, country, pro/con) using [Natural Readers](#) (text-to-speech) to create an audio or [Vocaroo](#) to record themselves.
- Ss upload their introductions on the [Padlet](#) Wall.

Adaptation for special needs students:

- Ss use templates from Canva or Animaker with fewer customization options (e.g., pre-selected clothing, backgrounds, or cultural elements).
- T provides pre-written introduction templates tailored to their roles:
 - *Hello, my name is [name]. I represent [country/organization] and believe [electric cars are important for sustainability].*
- Ss use text-to-speech software to read their introduction aloud.

5. Classroom Conference Debate: Sustainability in Action (40)

- T arranges the classroom into a conference-style layout.
- T acts as a moderator (sets the rules, introduces the topics, shows the videos of introduction).
- Ss deliver a 1-minute opening statement.
- Ss present arguments relevant to their role (e.g., a policymaker might discuss regulations, while an activist may focus on environmental impacts).
- Ss respond to other participants' opening statements, challenging their viewpoints and offering counterarguments.
- Ss use AI tools like ChatGPT or Elicit to generate quick counterpoints if needed.
- Ss collaborate with others in the same topic group to present a joint solution or policy proposal.

Adaptation for special needs students:

- Ss use the template to write their part of the debate, filling in blanks or selecting options
 - Opening Statement (1-2 sentences):
 - *"Hello, my name is [name], and I represent [country/organization]. Our position on [debate topic] is [pro/con]. We believe this because [state one reason]."*
 - Key Arguments (2-3 points):
 - *"First, we believe [state your first argument]. This is because [provide one reason or fact]."*
 - *"Second, [state your second argument]. Studies show that [state one piece of evidence]."*
 - *"Finally, [state your third argument]. This will [explain the impact]."*
 - Rebuttal (1 sentence, optional):
 - *"We understand that [opposing team's argument], but we believe [state why your side is stronger]."*
 - Proposed Solution (1-2 sentences):
 - *"We propose [state your solution]. This will [explain how it helps solve the problem]."*
 - Closing Statement (1-2 sentences):
 - *"In conclusion, we believe [restate your position] because [summarize your main points]. Thank you."*

T assesses the debate: [Sustainability Classroom Debate Rubric](#)

Criteria	3 Points	2 Points	1 Point
<i>Opening Statement</i>	Delivers a well-researched 1-minute statement with clear thesis and professional tone; demonstrates deep understanding of sustainability topic	Presents a basic opening statement with some research and moderate clarity; moderate understanding of topic	Weak or unprepared opening statement; minimal topic comprehension
<i>Argument Complexity</i>	Presents sophisticated, multi-layered arguments with credible evidence (diverse sources); demonstrates critical thinking	Offers moderate arguments with some supporting evidence; shows basic critical thinking	Limited or superficial arguments; lacks substantive evidence
<i>AI Research Integration</i>	Effectively uses AI research tools to generate advanced counterpoints; incorporates AI-generated insights with original analysis	Demonstrates basic AI tool usage; partially integrates research findings	Minimal or ineffective AI research tool implementation
<i>Collaborative Solution</i>	Develops comprehensive, innovative policy proposal with group; presents realistic sustainability strategies	Creates moderate group solution with some practical elements	Weak collaborative effort; underdeveloped policy proposal
<i>Counter-argument Skills</i>	Responds to opposing viewpoints with sophisticated, respectful rebuttals; demonstrates advanced debate techniques	Provides basic counterarguments with moderate effectiveness; generally respectful	Limited or ineffective counterargument skills; potentially confrontational
<i>Professional Communication</i>	Maintains professional demeanor; uses advanced language; demonstrates exceptional interpersonal communication skills	Communicates clearly with moderate professionalism; acceptable communication style	Informal or unprofessional communication approach

Scoring Guide:

- Total Possible Points: 18
- 16-18 Points: Exceptional
- 13-15 Points: Proficient
- 10-12 Points: Developing
- Below 10 Points: Needs Significant Improvement

6. Post-Debate Reflection (5 minutes)

- Ss reflect on the debate by answering questions like:
 - What challenges did you face when using AI for research, and how did you overcome them?
 - What did you find most challenging about engaging with opposing viewpoints during the debate?
 - What new insights did you gain about the topic (e.g., electric cars, nuclear energy, or deforestation) from hearing diverse perspectives?
 - Which solutions presented during the debate do you think are the most realistic and effective? Why?

Teaching Materials:

- PC/laptop/smart phone with Internet connection
- Digital Tools:
 - [ChatGPT](#)
 - [Copilot](#)
 - [Elicit](#)
 - [Adobe Express Create Avatar](#)
 - [HeyGen Avatar](#)
 - [Animaker](#)
 - [Bitmoji](#)
 - [Vocaroo](#)
 - [Natural Readers](#)
 - [Padlet](#)
- Digital materials:
 - [Debate Cards](#)
 - [Functional Language for Debates](#)
 - [Sustainability Classroom Debate Rubric](#)

Assessment:

Summative Assessment: [Sustainability Classroom Debate Rubric](#)

Duration:

95 minutes

Activity 7: Sweet Truths: Understanding Chocolate Production and Fair Trade

Description:

This lesson can be delivered online or in the classroom. Students explore global issues connected with chocolate production—such as child labor, environmental impact, and fair trade—and create their own Chocolate Awareness Campaign. They watch key videos, brainstorm solutions, work in groups using Canva and Padlet, and design a campaign manifesto calling for responsible chocolate consumption. AI tools support idea generation, writing, translation, and accessibility. Special needs students participate through adapted materials, multimodal inputs, and scaffolded tasks.

Instructions:

1. Warm-up discussion: What’s Behind a Chocolate Bar? (5 minutes)

- Ss answer question: “Where do you think chocolate comes from?”

2. Video exploration (20 minutes)

- Group work:
- Ss watch videos and take notes on problems in chocolate production:
 - [The Story of Chocolate: Unwrapping the Bar](#)
 - [Why Fair Trade Chocolate Matters](#)
 - [Stop Eating Chocolate](#)

3. Choosing an Issue (5 minutes)

- Group work - Students select one issue for their campaign:
 - Child labour
 - Deforestation
 - Unfair wages
 - Cocoa farmer poverty
 - Climate impacts
 - Unsustainable farming

4. Campaign Manifesto Creation (30 minutes)

- Ss work in groups to create a Chocolate Awareness Campaign Manifesto.
- Ss use AI (ChatGPT, Copilot...) to research the issue of their choice.
- Each manifesto includes:
 - **Issue** (clear problem)
 - **Slogan**
 - **Mission Statement**
 - **Target group**
 - **Proposed actions**
 - **Media plan** (poster/video idea/social media post)
 - **Time & place** (when the campaign happens)

5. Formative Assessment – “Two Stars and a Wish” (15 minutes)

- Each group presents its manifesto.
- Students peer-assess two other groups’ manifestos.
- **Students write:**
 - One thing they liked
 - Another thing they liked
 - One suggestion for improvement

Teaching Materials:

- PC/laptop/smartphone with Internet connection
- Digital Tools:
 - [ChatGPT](#)
 - [Copilot](#)
 - [Padlet](#)
- Digital materials:
 - [The Story of Chocolate: Unwrapping the Bar](#)
 - [Why Fair Trade Chocolate Matters](#)
 - [Stop Eating Chocolate](#)

Assessment:

- Formative Assessment: 3-2-1

Duration:

75 minutes

Activity 8: Science Escape Room

Description:

Students participate in an interactive escape room focused on environmental issues. They solve riddles, complete quizzes, and generate AI images of polluted rivers to unlock codes for each stage. In the final challenge, groups analyze real-world river pollution scenarios and use AI tools to propose solutions. The activity fosters critical thinking, collaboration, environmental awareness, and AI literacy in a gamified format.

Instructions:

1. Warm-up: Environmental Riddles: Exploring Earth's Elements (10 minutes)

Group work

- T distributes 3-5 cards with riddles to each group - printed or [digital slides \(template link\)](#).

Adaptation for special needs students:

- Ss can use AI tools to help them solve the riddles.

2. Environmental Quiz: Awareness Check - Step 1 of the escape room (15 minutes)

[Google Forms](#): Environmental Quiz: Awareness Check

- After completing the quiz, students click *View score* to see their submitted answers.
- Incorrect answers will be marked. Students must use AI tools (e.g., [ChatGPT](#), Bing, or similar platforms) to research and determine the correct answers themselves.
- Students need the correct answers to piece together the code required for the next stage of the activity.
- The letter (A, B, C, or D) next to the correct answer in each question forms part of the code.
- The letters corresponding to the correct answers should be arranged in the order of the question numbers to form the complete code.
- Once students determine all the correct answers, they will have the complete code to proceed to the next part of the activity.

1.	<input type="text"/>
2.	<input type="text"/>
3.	<input type="text"/>
4.	<input type="text"/>
5.	<input type="text"/>
6.	<input type="text"/>
7.	<input type="text"/>

The code (not to be shared with Ss): CBCDBAB

Adaptation for special needs students:

- Ss can use AI tools and/or internet to help them answer the multiple-choice questions in Google Forms.

3. Generating AI images (15 minutes) - Step 2 of the escape room

- Ss read visual clues describing the pollution in the river.
- All 6 descriptions/river cards have to be used - so if the T has fewer groups, they will get more than 1 description card.
- Ss use an AI image generation tool (e.g., [DALL·E](#), [MidJourney](#), or similar) to create images that reflect the given descriptions.
- Provide students with the clue descriptions and ask them to create their own AI image prompts based on those clues, focusing on key details such as pollution types, visible elements, and water conditions. They will use AI tools to generate images and refine their prompts as needed to ensure accuracy.
- Ss share their generated images with the teacher and they need to guess which river they were presenting. If the AI-generated image is good enough for the T to guess, they will get the next code: ImagePrompt (not to be shared with ss beforehand)

Description	AI Image Prompt
<p>A photo of the Rhine River with industrial factories on the banks and visibly polluted water. The water is murky, and there are signs of chemical waste floating near the shore.</p>	<p>Create an image of a river with industrial factories along the banks, and polluted, murky water with signs of chemical waste floating near the shore.</p>
<p>A photo of the Amazon River with plastic waste floating on the surface, and a deforested area visible in the background. The water is cloudy with debris.</p>	<p>Create an image of a river with floating plastic waste, with a deforested area in the background. The water is cloudy, with visible debris on the surface.</p>
<p>A satellite image of the Mississippi River showing green algae blooms in the water. The algae covers large sections of the river, with visible impacts on aquatic life.</p>	<p>Create a satellite image of a river with large green algae blooms covering sections of the water, with clear signs of environmental impact on the aquatic life.</p>
<p>Images of fish with visible signs of pollution, such as discolored skin, lesions, or deformities. The water they swim in is cloudy and polluted.</p>	<p>Create an image of fish in murky water with visible signs of pollution, like discolored skin, lesions, or deformities. The water is cloudy and polluted.</p>
<p>A river with murky brown water, perhaps with visible signs of industrial waste such as oil slicks, plastics, or metal debris scattered across the surface.</p>	<p>Create an image of a river with murky brown water, showing visible signs of industrial waste like oil slicks, plastic, and metal debris on the surface</p>
<p>A photo of a river with plastic bottles, bags, and fishing nets floating on the surface. The riverbanks are littered with more trash.</p>	<p>Create an image of a river with floating plastic bottles, bags, and fishing nets, with more trash littering the riverbanks.</p>

Adaptation for special needs students:

- Provide students with the AI prompts based on the clue descriptions, guiding them to use these prompts to generate images of the given scenarios. They will then review the generated images to see if they match the clues and make adjustments if necessary.

4. Multiple-Choice Question Based on Clue (5 minutes) - Step 3 of the escape room

- Ss look at all AI-generated images
- [Google Forms](#): River Rescue: Pollution Awareness Challenge
- Ss do the quiz and after submitting they will receive feedback when they click on *View score*. If they missed any questions, they can resubmit.
- the next code: ACBCAB (not to be shared with Ss beforehand)

5. Teamwork: Interactive Data Analysis (45 minutes)

- The final stage of the escape room challenge: Ss who have all three codes correct get to choose the scenario they would like to work on, then the second group... The T will check their codes or they may decide to do even this part digitally.
- Students work in groups to work on assigned/chosen [scenario \(template link\)](#).
- Students gather and review all given clues.
- Next, they research with AI by inputting tailored prompts based on the clues to generate solutions.
- Students decide in groups what the best solution for the given scenario is and they develop a feasible action plan (e.g., bioremediation, policy recommendations, stricter regulations, community involvement...).
- Ss present findings to the group or class: each group presents their scenario, research findings, and proposed solution to the class.
- group work assessment

Group Work Assessment

- understanding of the scenario
- use of AI for research
- collaboration and group discussion
- solution development
- action plan development
- presentation of findings

	Scenario	Image Clue	Data Clue	Report Snippet Clue	AI Prompt
1	The Rhine River, which flows through Europe, is heavily polluted by factory waste, farm runoff, and city wastewater. The water, once clear, is now brown, and fish are disappearing fast. People nearby say the water smells strange and causes skin rashes when touched.	A photo of the Rhine River with industrial factories on the banks and visibly polluted water.	Levels of heavy metals (lead, mercury) are 10 times above safe limits. Fish species, like salmon, have drastically reduced in number.	The factories have been dumping untreated waste into the river for years, and local authorities have failed to enforce proper waste disposal regulations.	What are the best methods to remove heavy metals from river water? How can industrial zones reduce pollution in rivers like the Rhine?
2	The Amazon River, the world's largest river by discharge, is struggling with plastic pollution and the effects of deforestation. Waste from illegal mining activities is poisoning the water, and toxic chemicals are leaching into the river. Local communities report a sharp decline in fish populations, and many species of plants and animals are at risk.	A photo of the Amazon River with plastic waste floating on the surface, and a deforested area visible in the background.	Plastic waste on the riverbank has increased by 60% in the past decade. Mercury levels from illegal mining have reached 0.1 mg/L (safe level: 0.002 mg/L).	The destruction of the rainforest is causing sedimentation in the river, affecting local fish and plants	How can deforestation be stopped to protect the Amazon River? What are the best ways to remove plastic and toxic chemicals from a river like the Amazon?
3	The Mississippi River, running through the United States, is facing algae growth caused by too much fertilizer from nearby farms. The algae are using up oxygen in the water, killing fish and other water creatures. Local farmers are losing crops because of the changing water, and drinking water is becoming unsafe.	A satellite image of the Mississippi River showing green algae blooms in the water.	Nitrogen levels in the water are 20 times higher than recommended limits. Oxygen levels in the river have dropped to dangerous levels for aquatic life.	Fertilizers from nearby farms are running off into the river, leading to algae growth and fish kills. There's little regulation on water quality in agriculture.	What are the best methods to reduce agricultural runoff in rivers like the Mississippi? How can algae blooms be controlled to restore oxygen levels in polluted rivers?
4	The River Ember, close to factories, has turned brown. Tests show high levels of harmful metals like lead and	images of fish with visible signs of pollution	Mercury level: 0.12 mg/L (EPA limit: 0.002 mg/L).	Nearby factories lack proper wastewater	What are sustainable ways to remove heavy

	mercury, and fish are dying. People living nearby report skin problems from touching the water.	a river with murky brown water, perhaps with visible signs of industrial waste	pH level: 5.2 (acidic)	treatment facilities. A local says, "Our factories were built decades ago without modern filtration	metals from polluted water? How can industries be encouraged to adopt wastewater treatment
5	The River Azure is clogged with plastic waste, with debris visible on the surface and microplastics detected in the water. Wildlife is declining due to ingestion of plastics and entanglement.	A photo of a river with plastic bottles, bags, and fishing nets.	80% of waste originates from nearby communities. Microplastic concentration: 5 parts per million.	Local waste management facilities are overwhelmed, and public awareness campaigns are sparse.	How can we reduce plastic pollution in rivers? What are effective ways to prevent microplastics from entering water systems?

Generated with the help of ChatGPT

Adaptation for special needs students:

- Provide students with the AI prompts based on the clue descriptions, guiding them to use these prompts to generate images of the given scenarios. They will then review the generated images to see if they match the clues and make adjustments if necessary.

6. Discussion circles (10 minutes)

- Facilitate Discussion: After presentations, encourage open discussion.
 - Why do you think this solution will work?
 - What challenges might arise from this solution?
 - Are there other approaches to consider?
- Promote Reflection:
 - Which solution seems most feasible and why?
 - How can we implement these solutions in real life?
- At the end, summarize the main solutions discussed and emphasize collaborative problem-solving.

Teaching Materials:

- Digital Tools:
 - [ChatGPT](#), Bing, or similar platforms
 - AI image generation tools (e.g., [DALL·E](#), [MidJourney](#), or similar)
- Visual aids:
 - printed or [digital slides](#) ([template link](#))
 - [Google Forms](#): Environmental Quiz: Awareness Check
 - [Google Forms](#): River Rescue: Pollution Awareness Challenge
 - list of [scenarios](#) ([template link](#))

Assessment:

- group work assessment

Duration:

100 minutes

Activity 9: Scav Hunt AI & IoT

Description:

This activity involves students using a Google Form to engage in an interactive scavenger hunt focused on AI and IoT concepts. Students start by entering their email to receive their results afterward. Each question in the form contains a clue leading them to a specific visual clue in their environment. Once the students locate the visual clue, they scan its associated QR code to access a resource such as an article, video, graph, or infographic. Using the information provided, students answer the corresponding question in the Google Form and proceed to the next clue. At the end, they submit their responses and have the option to review their answers. This activity combines critical thinking, research, and technology skills in an engaging format.

Instructions:

Before the ScavHunt:

- T prepares printed visual clues with their corresponding QR codes (for multiple use) and places them around the classroom or designated area.
- T ensures the clues are hidden or positioned in spots where students need to actively search for them .
- If there are multiple groups, T assigns each group to start from a different question in the Google Form to prevent overcrowding in one location ([ScavHunt: 6 groups: template link](#)).
- At the end of the scavenger hunt, guide students to submit their answers in the Google Form and review their results.

During the Scav Hunt:

- Ss enter their email address in the [Google Form](#) to receive results later.
- They read the first clue in the form, which points them to a specific visual clue.
- After finding the visual clue, they scan the QR code linked to it.
- The QR code provides a resource (article, video, graph, or infographic) with the necessary information.
- Ss use the resource to answer the question in the Google Form.
- They input their answer and click *Next* to move to the next clue.
- Once all clues are completed, they click *Submit* and have the option to view their results.

Adaptation for special needs students:

- Buddy system: pairing students with learning difficulties with supportive peers promoting collaboration.
- Pre-activity: allowing students to practice scanning QR codes and ask questions.
- Extra time: offering extended time for students to complete the activity at their own pace.
- Pre-selected locations: arranging visual clues in the same order as they appear in the Google Form to reduce confusion.

Teaching Materials:

- [ScavHunt](#) (visual) clues descriptions and tasks ([template link](#))
- ScavHunt: [QR codes and visual clues](#) ([template link](#))
- Google Forms responder's [link](#)
- [ScavHunt: 6 groups](#): [template link](#)
- Teacher's [notes](#)

Assessment:

- Formative (during the activity):
 - observation checklist: T monitors how students approach clues, find visual items, and interact with resources. T makes notes on ss collaboration, engagement, and problem-solving skills.

Duration:

60 minutes

Activity 10: HerStory Makers: Celebrating Female Scientists

Description:

In this exciting lesson, students will investigate the lives of great female scientists and inventors, researching their achievements and creating a collaborative video. Students will use AI techniques to bring historical personalities to life, narrate their experiences, and create personalized slides. The final activity will involve developing an interactive quiz that other classes can use to learn about these inspirational women.

Instructions:

1. Introduction (10 minutes)

- T presents the task.
- Ss brainstorm famous scientist and their accomplishments.
- T asks:
 - *How many of them are women?*
 - *Who is Hedy Lamarr?*
- Ss use ChatGPT or some other chatbot to search for more female scientists/inventors.

1. Research and Planning (20 minutes)

- Ss choose a female scientist from a provided list or suggest their own.
- Ss conduct research using guided resources (articles, videos, and AI-powered search tools like ChatGPT).
- Ss focus on key aspects:
 - Background (childhood, personality, and early interests).
 - Major accomplishments and their impact.
 - A memorable quote or moral takeaway.

Adaptation for special needs students:

- Ss use a template [Celebrating Female Scientists](#) to write notes about their scientist.

3. Slide Creation (60 minutes)

- Ss create a video using Canva.
- Ss design a slide featuring a street named after their scientist.
- Ss write a compelling introduction using one of the prompts:

"I live on [Scientist's Name] Street. Did you know it was named after...?"

"Have you ever heard of [Scientist's Name]? She is..."

"I am really proud to live in a street named after ..."

"I am happy living in a street named after this incredible woman/my favorite..."

- Ss add an AI-generated avatar of themselves to the slide.
- Ss design a slide with a virtual room inspired by the scientist (Ss decorate a room themed around their scientist's life and achievements: books, tools, or inventions associated with the scientist, animated portrait of the scientist using Deep Nostalgia)
- Ss write a narration explaining the scientist's story.
 - Building a story: childhood background, personality, interests, accomplishments...
 - Conclusion: inspirational quote; a moral; a rhetorical question; why you admire her...
 - Ss record a short narration for both slides using AI tools for voice modulation ([Vocaroo](#)) text-to-speech AI ([Natural Readers](#) text-to-speech) to create a video .

Adaptation for special needs students:

- Ss use a template ([Celebrating Female Scientists](#)) to write a narration for their slides.
-
- T assesses Ss work:

[HerStory Makers: Celebrating Female Scientists Rubric](#)

Criteria	3 Points	2 Points	1 Point
Street Name Introduction	Compelling and creative opening using one of the provided prompts with good personal connection and engagement	Adequate introduction that follows the prompt with some personal insight	Minimal effort in introduction, lacks creativity or personal connection
Scientist Background Narrative	Comprehensive storytelling including detailed childhood, personality, interests, and significant accomplishments with rich historical context	Moderate depth of scientific biography with some key details about the scientist's life	Limited or superficial exploration of the scientist's background
Slide Design	Professionally designed slide with AI-generated avatar, well-curated virtual room reflecting scientist's life, and visually appealing	Moderately designed slide with some elements of scientist's context	Minimal design effort, lacking thoughtful representation
Narration Quality	Clear, engaging narration using AI voice modulation that effectively communicates the scientist's story with emotional resonance	Understandable narration with basic information about the scientist	Unclear or monotonous narration lacking clarity
Inspirational Conclusion	Good concluding statement with a powerful quote, meaningful moral, or thought-provoking rhetorical question	Satisfactory conclusion with a relevant quote or insight	Weak or generic conclusion lacking meaningful reflection
Technical Execution	Flawless integration of AI tools, smooth voice modulation, and professional presentation	Functional use of AI tools with minor technical inconsistencies	Significant technical challenges or poor execution

Scoring Guide:

- **Total Points Possible:** 18
- **16-18 Points:** Exceptional
- **13-15 Points:** Proficient
- **10-12 Points:** Developing
- **Below 10 Points:** Needs Significant Improvement

4. Class Quiz Design (10 minutes)

- Ss create one quiz question related to their scientist (multiple-choice, true/false, or short answer).
- Ss compile the questions into an interactive quiz using tools like [Kahoot](#), Google Slides, or Google Forms. They use their slides for the visuals.

5. Presentation and Reflection (15 minutes)

- Ss watch the final class video together.
- Ss play the quiz.
- Ss reflect on their learning by discussing:
 - 3 Things They Learned
 - 2 Things They Found Interesting
 - 1 Question They Still Have

Teaching Materials:

- PC/laptop/smart phone with Internet connection
- Digital Tools:
 - [Natural Readers](#)
 - [Kahoot](#)
 - [Vocaroo](#)
 - [ChatGPT](#)
- Digital materials:
 - [Celebrating Female Scientists](#)
 - [HerStory Makers: Celebrating Female Scientists Rubric](#)

Assessment:

Formative Assessment:

- 3 Things They Learned
- 2 Things They Found Interesting
- 1 Question They Still Have

Summative Assessment:

- [HerStory Makers: Celebrating Female Scientists Rubric](#)

Duration:

115 minutes

Closure: Gallery Walk

Description:

Students will engage in a Gallery Walk, showcasing their work and exploring their peers' projects. This interactive activity fosters reflection, peer feedback, and appreciation of different perspectives. Students will leave constructive comments, discuss key takeaways, and reflect on their own learning journey. The session concludes with a class discussion, individual reflections, and a celebration of creativity and effort. T

Instructions:

1. Setup (10 minutes)

Ss display their work from the module (e.g., Cosmic Identity posters, Body Systems skits and comic strips, designs of habitable planets, debate notes, or Conservation Campaigns, female scientists videos...) around the room or on a shared virtual platform if working online.

2. Gallery Walk (30 minutes)

- Ss walk around the room (or navigate the digital gallery) to view each project.
- Ss take notes on what you find interesting, inspiring, or thought-provoking.
- Ss use sticky notes, physical or virtual ([Lino wall](#)), to leave positive feedback or questions for the creators.
 - Example prompts for feedback:
 - *What inspired you to choose this design/approach?*
 - *I love how you...!*
 - *This made me think about...*

3. Reflection and Discussion (10 minutes)

Whole-Class Discussion

- T asks Ss to share one project that stood out to them and explain why.
- Ss discuss how the gallery walk helped them see the variety of approaches and creativity in science explorations.

Individual Reflection

- Ss write a brief response:
 - *What was your proudest moment in creating your project?*
 - *What did you learn from seeing others' work?*
 - *How will you use what you learned moving forward?*

Teaching Materials:

- PC/laptop/smartphone with Internet connection
- Digital Tool: [Lino wall](#)

Assessment:

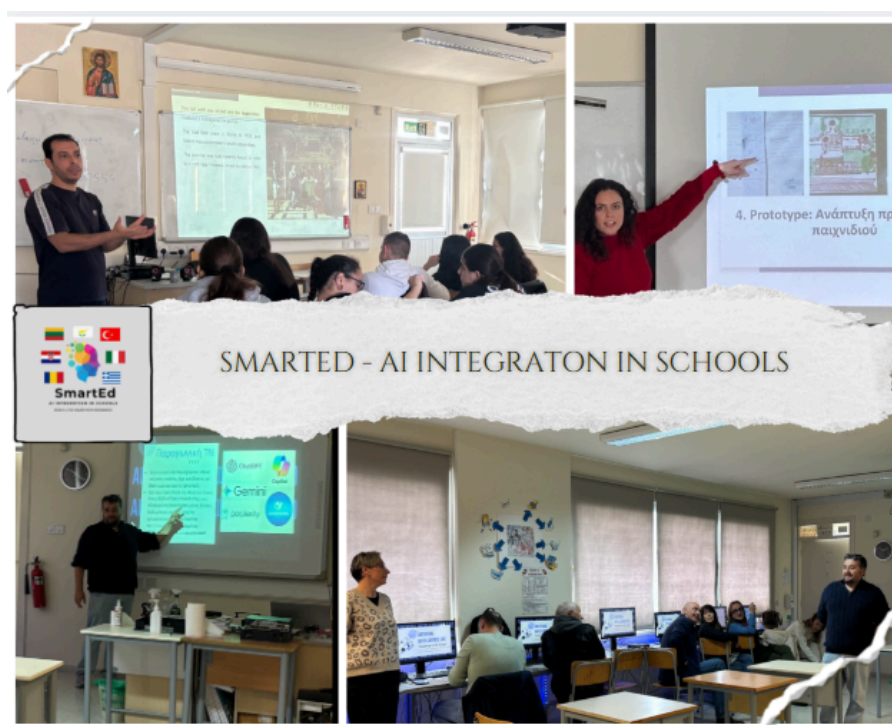
- Formative assessment: Ss reflect on the work they did in the module.

Duration:

50 minutes

MODULE 5

Accessible Social Studies: To promote understanding of social studies concepts through accessible and engaging learning materials



Authors: Vassiliki Koukounidou, Michalis Livitziis, Constantia Symeou

Institution: Lykeio Aradippou, Cyprus

1. Module Description

This module blends social studies, civic education, science, and ethics to provide students with accessible, creative, and engaging pathways into global issues. It begins with a human-rights icebreaker and continues with diverse activities that combine role-play, debates, poetry, democratic discourse, sustainability projects, climate science, financial literacy, and AI ethics. Learners explore the Universal Declaration of Human Rights, analyze refugee experiences, examine democratic principles, reflect on Renaissance science, investigate climate change, and critically assess the role of AI in society. The module closes with a collaborative reflection linking all experiences. By weaving together history, social justice, science, and technology, it fosters empathy, creativity, and active citizenship while ensuring inclusion and accessibility.

2. Content and activities of the module

Content: Adaptive social studies lessons, and multimedia resources

- Adaptive Social Studies Lessons
 - Students explore the Universal Declaration of Human Rights (UDHR), democracy, and civic values through differentiated resources that accommodate diverse learners.
- Creative Expression and Role-Play
 - Learners use drama, storytelling, poetry, and performance to embody human rights concepts, refugee experiences, and democratic principles, ensuring emotional engagement and empathy building.
- Historical Perspectives
 - Through the story of Galileo and the Renaissance, students examine the conflict between science, religion, and society, linking past struggles to contemporary issues of knowledge and freedom.
- Environmental and Sustainability Education
 - Students investigate their school’s energy, water, and plant use, propose eco-friendly solutions, and study global climate change through data analysis and scientific methods.
- Financial Literacy and Responsible Citizenship
 - Students learn the basics of spending, saving, and responsible decision-making, applying knowledge to real-life challenges with AI-assisted simulations.
- AI, Ethics, and Digital Citizenship
 - Students critically explore the opportunities and risks of AI in society, debate ethical dilemmas, and reflect on the role of technology in civic life.
- Multimedia and AI-Enhanced Learning
 - Integration of AI tools, virtual tours, digital patchworks, word clouds, interactive debates, and multimedia storytelling enhances accessibility and creativity for all students.

Activities: Role-playing historical events, virtual tours of historical sites

- Warm-Up & Energizer – “Find Someone Who...”
 - Students play a human rights bingo game to build connections and generate AI-powered slogans or posters promoting equality and justice.
- Human Rights Tapestry
 - Groups create a digital patchwork or interactive timeline of human rights milestones, using multimedia and AI to visualize progress.
- Human Rights On Stage
 - Students dramatize UDHR articles through skits or role-plays, showing how rights are protected or violated in real or fictional contexts.

- Shelter as a Human Right
 - Students analyze refugee poetry, interact with an AI refugee persona, and co-create poems, songs, or spoken-word performances reflecting Article 25.
- Democracy in Action
 - Through creative tasks and structured debates, students explore democratic principles and their application in contemporary society.
- Galileo and the Renaissance
 - Learners investigate Galileo’s scientific discoveries, conflicts with the Church, and influence on modern science, creating posters, comics, or digital stories.
- Sustainability at School
 - Students audit their school’s sustainability practices (energy, water, plants), design AI-enhanced solutions, and pitch eco-friendly improvements.
- Climate Change Through Time
 - Using scientific data (ice cores, tree rings, graphs), students compare past and present climate changes, presenting their findings visually.
- Financial Literacy Challenge
 - Through interactive scenarios and AI prompts, students practice responsible financial decisions, budgeting, and ethical spending.
- AI and Ethics
 - Learners debate the opportunities and risks of AI in society, using digital tools to present arguments and reflect on ethical implications.
- Understanding the principles of democracy
 - Students explore foundational democratic principles—popular sovereignty, rule of law, equality, participation, and rights—through interactive AI and digital tools.
- Our Learning Journey
 - Students reflect on their learning journey using AI prompts, generate collaborative word clouds, and create a shared closing image or quote.

3. Module Objectives

- a. To introduce students to fundamental social studies concepts, including human rights, democracy, civic responsibility, and ethical citizenship.
- b. To foster empathy and critical awareness by engaging with refugee experiences, human rights struggles, and stories of activists.
- c. To explore historical and scientific perspectives (Galileo, climate change) and connect them to contemporary challenges in sustainability and justice.
- d. To promote responsible decision-making and literacy in areas such as sustainability, financial management, and AI ethics.
- e. To integrate creative arts, role-play, and digital tools (including AI) to enhance accessibility, creativity, and inclusion.
- f. To develop collaboration, problem-solving, and communication skills through group projects, debates, and reflective activities.

4. Module Learning Outcomes

- a. Identify and explain key human rights principles and democratic values, linking them to real-world situations.
- b. Demonstrate empathy and creative expression by producing role-plays, poems, performances, or multimedia projects on social justice issues.
- c. Analyze historical scientific contributions (e.g., Galileo) and environmental data to explain the impact of science on society and climate change.
- d. Propose sustainable solutions for their school and community, and present them using digital or AI-enhanced formats.
- e. Apply financial literacy concepts to simulated scenarios, making responsible and ethical choices.
- f. Critically discuss opportunities and risks of AI in society, demonstrating ethical reasoning and civic awareness.
- g. Reflect on their personal and collective learning journey, articulating ways to act as responsible, active citizens.

5. Key Words

Human Rights, Democracy, Justice, Equality, Civic Education, Galileo, Renaissance, Sustainability, Climate Change, Financial Literacy, AI Ethics, Activism, Empathy, Creative Expression, Role-play, Debate, Storytelling, Inclusion, Accessibility, Multimedia Learning

6. Methodology

Inquiry-Based Learning, Collaborative Learning, Role-Play and Drama-Based Pedagogy, Creative Arts Integration, Historical and Scientific Inquiry, Project-Based Learning (PBL), Gamification, Digital and AI-Enhanced Learning, Differentiated Instruction

Adaptive Learning Scenario

Warm-up & Energizers:

Description:

To introduce the module, students will engage in a social warm-up activity to activate prior knowledge and curiosity regarding human rights. This interactive exercise will act as an icebreaker activity to help students get to know each other while considering various aspects of human rights. By engaging in this warm-up activity, students will begin to see human rights as both relevant to every individual and accessible.

Instructions:

1. Find Someone Who... (25 minutes)

- T introduces the “Find Someone Who...” activity:
 - Ss receive a bingo-style sheet with “Find someone who...” prompts based on human rights themes.
 - Ss walk around asking classmates questions to fill in the boxes.
 - They must find a different person for each box.
 - Once completed, Ss reflect: Which rights came up most often? Any that surprised you?

Find Someone Who... cards

Instructions: Walk around the classroom and talk to your classmates. Find someone who fits each description and write their name in the box. You can only use each person once. Try to fill the whole grid!

<u>🧠 can name one human right.</u>	<u>🧠 has watched a video about human rights.</u>	<u>🧠 knows what freedom of expression means.</u>	<u>🧠 has helped someone being treated unfairly.</u>	<u>🧠 can name a human rights activist.</u>
<u>🧠 has heard of the United Nations.</u>	<u>🧠 believes all children should go to school.</u>	<u>🧠 knows what a refugee is.</u>	<u>🧠 has participated in a class debate.</u>	<u>🧠 can name a right in the CRC (Children's Rights).</u>
<u>🧠 has seen a protest or march on TV.</u>	<u>🧠 can explain the right to clean water.</u>	<u>🧠 thinks healthcare is a human right.</u>	<u>🧠 has read or heard a story about fairness.</u>	<u>🧠 has heard of Martin Luther King Jr.</u>
<u>🧠 has learned about Malala.</u>	<u>🧠 has written or spoken about justice.</u>	<u>🧠 believes everyone should feel safe.</u>	<u>🧠 can imagine a world where rights are protected.</u>	<u>🧠 has ever helped a classmate in need.</u>
<u>🧠 can name a right they think is most important.</u>	<u>🧠 has talked about rights with family.</u>	<u>🧠 can think of a slogan for a human right.</u>	<u>🧠 has seen or read news about human rights.</u>	<u>🧠 would like to help protect rights in the future.</u>

Adaptation for special needs students:

T includes visual prompts along with the lexical prompts so that the needs of Ss with visual impairment are addressed. The prompts can also be simplified or altered according to the SEN Ss in the classroom. Some suggestions are:

- Provide visual / icons for each human right.
- Offer modified cards with fewer boxes.
- Give sentence starters: “Do you know about the right to...?”



2. Creating Slogans (20 minutes)

- Inspired by one of the questions, Ss create slogans advocating for the need for equal human rights, using AI text generators like ChatGPT. Ss can include images to further emphasise their slogans, using AI image generators like DALL-E, as well as for differentiation purposes.
- Ss upload their slogans on the Padlet Wall.
- Ss give stars and comment on their peers' slogans.

Teaching Materials:

- PC/laptop/smartphone with internet connection
- “Find someone who...” cards
- Digital Tools:
 - [My free bingo cards](#) for creating “Find someone who...” cards
 - [Padlet](#) for presenting and assessing slogans
 - [DALL-E](#) or [Canva](#) AI for generating custom visuals
 - [ChatGPT](#) for brainstorming and text suggestions
 - [Canva](#), [Looka](#) and [Designs AI](#) (for logo and slogan design)

Assessment:

Formative Assessment: Ss give stars and write comments

Duration:

45 minutes

The main part:

Activity 1: Exploring the Human Rights Tapestry

Description:

Students will explore the *Universal Declaration of Human Rights* and key moments in human rights history. Students will work in groups to create a digital patchwork or interactive timeline that will visually represent their findings. The activity engages all learners by blending key historical moments with creativity, offering multiple ways to participate and express themselves.

Instructions:

1. Introduction to Human Rights (10 minutes)

- Teacher (T) introduces the concept of human rights using the following short videos:
 - [“What Are the Universal Human Rights?”](#)
 - [The Universal Declaration of Human Rights - Add Your Voice](#)
- T asks Students (Ss) to complete a Mentimeter questionnaire to elicit their understanding of the concept of Human Rights and the Declaration of Human Rights, based on the videos they have just watched:
 - [Human Rights Quiz](#)

Adaptation for special needs students:

- Ss work with other Ss in groups or pairs where they get peer support.

2. Group Exploration (20 minutes)

- Ss are divided into groups of 4. T explains that they will work in their groups to explore Human Rights and collect information on important aspects of human rights. Ss will be provided with some videos and questions to guide their exploration. Ss are free to use any resources available online to find the information they need. Ss use [ChatGPT](#) or a similar chatbot for personalised brainstorming.
 - [The story of Human Rights](#) video
- Ss get the following questions:
 - What were the most important moments in human history that have led to the establishment of the Declaration of Human Rights?
 - What are Human Rights, and why was the Declaration of Human Rights formed?
 - Which countries first signed the Declaration of Human Rights?

Adaptation for special needs students:

T forms the groups and there are 4 Ss per group. Ss may use subtitles and adjust playback speed for video viewing, if needed. T assigns roles or give Ss the choice to choose their roles. This helps distribute tasks and reduces pressure for students who may struggle with reading, writing, or speaking.

- **Reader** (reads materials/questions)
- **Searcher** (uses [ChatGPT](#), [The story of Human Rights](#) , [Human Rights in two minutes](#) or web)
- **Note-taker** (writes/draws key points)
- **Speaker** (prepares to share with class)
- Ss use pre-written sentences to complete, such as:
 - “One big event before the Declaration was _____ because _____. Another important event was _____ because _____.”
 - “Human rights are _____. We need them because _____.”
 - “The Declaration of Human Rights was established in _____.”

“One country that signed first was _____. Another one was _____.”

3. Creating the Human Rights Patchwork or Timeline (20 minutes)

- Ss work in their group to make a digital “patch” with images, text, and voice. Ss use [Padlet](#), [Canva](#), or [Genially](#) to create their digital timeline, using the information they’ve collected so far on Human Rights and the Declaration of Human Rights. More advanced or digitally competent Ss may use [Timeline JS](#) for the creation of their digital timeline. Each visual patch may include:
 - 1 key takeaway or quote
 - 1 AI-generated or chosen image, using [DALL-E](#) or [Bing Image Creator](#) AI for generating custom visuals
 - Voice narration or audio created from text, using [Vocaroo](#) or [ElevenLabs](#)
 - A mini digital poster on Canva (export as image)

Adaptation for special needs students:

T gives Ss the option to create a mini poster which includes an image with a short text or symbols and audio, with the help of prewritten sentences and [ChatGPT](#) prompts. Ss use text-to-speech [Canva](#) AI, [Vocaroo](#), [Luvvoice](#) or some other text-to-speech AI tool.

- Ss use pre-written sentences such as:
 - “We learned that _____” / “One important right is _____” / “This image shows _____”
 - “Everyone should _____. That’s a human right.”

4. Reflection (10 minutes)

- Ss upload all patches to [Padlet](#) titled “*We the People: A Human Rights Quilt.*”
 - Ss explore each other’s work and evaluate each other’s timeline in the form of stars (1-5 stars). A [checklist](#).
- Ss reflect on what they have learned through this activity using the following prompts. Ss post on [Padlet](#)
 - One thing I learned about human rights is...”
 - “One right I think is most important today is... because...”

Teaching Materials:

- PC/laptop/smartphone with internet connection
- A [checklist](#)
- Digital Tools:
 - [Human Rights Quiz](#) Mentimeter
 - [ChatGPT](#) for personalised brainstorming
 - [Padlet](#), [Canva](#), [Genially](#) or [Timeline JS](#) for timeline creation
 - [DALL-E](#) or [Bing Image Creator](#) AI for generating custom visuals
 - [Vocaroo](#) for creating audio
 - [ElevenLabs](#) for creating audio from text
 - [Luvvoice](#) for text-to-speech creation
- Visual Aids:
 - [“What Are the Universal Human Rights?”](#) TED-Ed video
 - [The Universal Declaration of Human Rights - Add Your Voice](#) video
 - [The story of Human Rights](#) video
 - [Human Rights in two two-minute](#) videos

Assessment:

- Formative assessment: A [checklist](#).

Duration:

60 minutes

Activity 2: Human Rights On Stage – Exploring and Performing the 30 Rights

Description:

In this activity, students will deepen their understanding of the 30 Articles of the Universal Declaration of Human Rights (UDHR) by exploring real-world examples and historical context, using engaging multimedia and AI tools. Working in small groups, students will then write and perform a short role-play or skit based on their assigned rights, showing how those rights are protected or violated in real or imagined scenarios. The final performance connects directly to Social Studies by encouraging students to think critically about the role of government, law, civic responsibility, and global citizenship in protecting human rights.

Instructions:

1. What Do These Rights Look Like in Real Life? (10 minutes)

- T introduces the activity by framing human rights as core principles of social justice and civic life, essential to a functioning democracy and fair society. T explains that the Ss will work alone at the beginning and then pair up with the person sitting next to them to understand the Human Rights in the Declaration of Human Rights (UDHR).
- T shows the following video:
 - [Youth for Human Rights](#)
- T asks Ss to visit the following link using their smartphones, tablets or laptops, to explore the 30 articles of the Declaration of Human Rights in a simplified form:
 - [Simplified UDHR – Youth Version](#)
- T asks Ss to complete a Think-Pair-Share questionnaire on [Canva](#) with the following discussion prompts:
 - Which right surprised you the most?
 - Which one feels most important in today’s world?
 - Are there rights you feel are sometimes ignored or violated?
 - How do governments or societies protect (or fail to protect) these rights?
- T asks Ss to share their pair’s ideas on the [Interactive Human Rights Wall](#) through the link on [Mentimeter](#)

Adaptation for special needs students:

T enables subtitles when the video is viewed and allows Ss to watch a second time if needed with a partner.

- T provides a presentation with the 30 articles, simplified as presented in [Youth for Human Rights](#). The presentation has an audio to accompany the 30 articles in the UDHR to cater for Ss with difficulties in reading. Ss can use their smart devices to watch the presentation alone or in pairs.
 - [Presentation - Human Rights for All.mp4](#)
- T explains that each article of the UDHR has in own short video and they can choose 2-3 to watch on their own or in pairs.
 - [Youth for Human Rights](#)
- T pairs Ss and gives the following prompts to help navigate the discussion:
 - Partner students intentionally (e.g., mixed-ability pairs)
 - Use a prompt card or sentence starters like:
 - *“I think this right is important because...”*
 - *“This right surprised me because...”*
 - *“I saw this right in action when...”*
- Ss can use [Vocaroo](#) to create their answers and share them on the [Canva](#) template for Think-Pair-Share questionnaire
- T asks Ss to share their pair’s ideas on the [Interactive Human Rights Wall](#) through the link on [Mentimeter](#)

2. Group Research: Investigating the Rights (15 minutes)

- Ss are divided into small groups (3–4 students each group). Each group chooses to investigate 2–3 articles from [UDHR](#) to explore.
- T gives the following questions to guide Ss' focus on the social aspect of the exploration:
 - What does this right protect?
 - Has this right ever been denied in history? To whom? By whom?
 - What civic institutions (e.g., law, government, education) support this right?
 - Why is this right still relevant today?
- Ss take roles within their groups:
 - Viewer – watches the assigned right’s video
 - Reader – reads the simplified version aloud (can be found on [Simplified UDHR – Youth Version](#))
 - AI Assistant – uses [ChatGPT](#) or any other AI tool to get examples or rephrase content
 - Note-taker/Designer – writes or draws ideas to prepare for the skit using the [Magic Media tool in Canva](#) or [AutoDraw](#)

Adaptation for special needs students:

T assigns groups and assigns each group with one article from the [Simplified UDHR – Youth Version](#).

- Ss in each group:
 - Watches the short video about the right from [UDHR](#)
 - Reads the simple version of the article from the simplified video [Presentation - Human Rights for All.mp4](#)
 - Talks about the right together.
- T gives the following simple questions to guide the group discussion:
 - What does this right allow people to do?
 - Has anyone ever been stopped from having this right?
 - Why is this right important today?
- T gives Ss sentences starters or prompts to help form their ideas. The prompts can be printed on paper or projected on the board:
 - “This right means people can...”
 - “This right was taken away when...”
 - “This right is important because...”.
- T assigns roles that are accessible to Ss in each group
 - Video Watcher -watches video about the article and the simplified version of the article from [Presentation - Human Rights for All.mp4](#)
 - Idea Finder - uses the prompts given by teacher in [ChatGPT](#) or any other AI tool to get examples and generate ideas
 - Drawer or Writer - Writes or draws key ideas for the skit on paper, [Magic Media tool in Canva](#) or [AutoDraw](#)
 - Speaker - orally expresses groups ideas and records ideas to [Speech Texter](#)

3. Creative Production: Script and Rehearse Role-Plays (20 minutes)

- Ss work in their groups to write and rehearse a 2–3 minute role-play or skit the article of their choice in action.
- T explains to Ss that their role-play or skit can take various forms:
 - A student being denied their right (e.g., education, expression) and seeking help
 - A news segment reporting on a violation of the right
 - A courtroom scene discussing a human rights violation
 - A historical event or fictional society where the right was denied.
- T provides Ss with a checklist to have in mind what elements they need to include in their role-play or skit - [Chekclist](#)
- Ss can use [Magic Media tool in Canva](#) or [AutoDraw](#) to note down their script or generate ideas
- Ss can use [Speech Texter](#), [Vocaroo](#) or [Elevenlabs](#) to record conversations or narrate their scripts

Adaptation for special needs students:

T. gives Ss the opportunity to choose if they want to prerecord their script using voice recording tools like [Vocaroo](#) or [Elevenlabs](#).

- T gives Ss the opportunity to record their performance and add they prerecorded script, creating a video that can be projected in the lesson, using [CapCut](#)

4. Showcase (10 minutes)

- Ss perform skits live or upload videos to a shared [Padlet](#) entitled: “Human Rights On Stage: Student Stories”

5. Reflection (5 minutes)

- Ss answer on a shared [Padlet](#):
 - “What real-life issue did your skit show?”
 - “How does this article connect to fairness or justice?”
 - “What can people do to protect this article today?”

Teaching Materials:

- PC/laptop/smartphone with internet connection
 - [Canva](#) template for Think-Pair-Share questionnaire
 - [Checklist](#) for role-play writing
 - A [checklist](#) for group assessment
- Digital Tools:
 - [Interactive Human Rights Wall](#) on [Mentimeter](#)
 - [Vocaroo](#) for recording Ss ideas (speech to audio)
 - [ChatGPT](#) for group exploration (rephrasing content, finding information)
 - [Magic Media tool in Canva](#) or [AutoDraw](#) for drawing ideas
 - [Speech Texter](#) for recording Ss ideas (speech to text)
 - [Elevenlabs](#) to record conversations or narrate scripts
 - [Padlet](#) for sharing videos of pre-recorded skits
- Visual Aids:
 - [Youth for Human Rights](#) video
 - [Simplified UDHR – Youth Version](#) video
 - [Presentation - Human Rights for All.mp4](#)
 - [UDHR](#) short videos for group exploration on each article

Assessment:

- Formative assessment: [A checklist](#)

Duration:

60 minutes

Activity 3: Shelter as a Human Right – Poetry, Voice, and Performance

Description:

This activity explores Article 25 of the UDHR, which ensures the right to adequate shelter, through refugee poetry, performance, and AI-based creative expression. Using the poems “Homesick” by Shukria Rezaei and “Tent #50” by Rashid Hussein, students analyze real-life impacts of losing shelter due to war, displacement, and inequality. They will then use AI tools to write and perform original stanzas or songs, imagining the experience of displacement and linking it to global and local realities.

This activity develops empathy, social studies understanding, and creative skills through accessible formats (songwriting, voice notes, visual prompts), while connecting the concept of shelter to global citizenship, history, and civic responsibility.

Instructions:

1. Understanding Shelter as a Right (10 mins)

- (T) introduces [Article 25 of the UDHR](#), explaining that it means everyone has the right to food, clothing, housing, and medical care.
- T explains how this right is essential to social justice, equality, and civic life.

Adaptation for special needs students:

T introduces [Article 25 of the UDHR](#), explaining that it means everyone has the right to food, clothing, housing, and medical care.

- T shows Article 25 through the [Simplified UDHR – Youth Version](#) and [Presentation - Human Rights for All.mp4](#)

2. Exploring Poems on Displacement (15 mins)

- T divides Ss into groups.
- T shares a digital version of the poems [“Homesick” by Shukria Rezaei and “Tent #50” by Rashid Hussein](#) through a short video with a reading of the two poems.
- Ss read each poem aloud or play the audio version [“Homesick” by Shukria Rezaei and “Tent #50” by Rashid Hussein](#).
- Ss answer the following questions in their groups, using [Canva](#):
 - What feelings are expressed in each poem?
 - Why do you think the person feels this way?
 - What does this tell us about shelter as a human right?
- Ss share their ideas on [Padlet](#) and discuss them in class orally to analyse the poems’ main ideas and their links to shelter as a human right.

Adaptation for special needs students:

T divides Ss in groups. The groups can be of mixed ability, to promote inclusion and accessibility.

- T shares a digital version of the poems [“Homesick” by Shukria Rezaei and “Tent #50” by Rashid Hussein](#) through a short video with a reading of the two poems .
- Ss read each poem aloud or play audio version [“Homesick” by Shukria Rezaei and “Tent #50” by Rashid Hussein](#).
- Ss choose from pre-written sentence starters:
 - “This poem is about feeling _____ because_____.”
 - “ The writer lost their _____ and felt _____.”
- Ss can also use a [list of emoticons](#) to express their opinion. Then Ss share their ideas on [Padlet](#) for class discussion.

3. Talking to a Refugee Girl (15 mins)

- Ss visit [Mizou chatbot – Refugee Teenage Girl](#) on their devices.
- Ss ask questions about:
 - Her life before displacement
 - Why she had to leave home
 - Her current challenges
 - Where she was displaced
 - Her feelings during and after

Adaptation for special needs students:

T provides Ss with pre-written questions like the following:

- “Where did you live before?”
- “Why did you leave your home?”
- “What do you miss the most?”
- What challenges are you currently facing?
- Where were you displaced?
- What were your feelings during and after leaving your home?
- Ss can type the questions or they can use the voice button in the chatbot in [Mizou chatbot – Refugee Teenage Girl](#) to interview the girl.

4. Creating a Poem and Turning It into a Song (20 mins)

- Ss are divided into groups of 5. Inspired by the poems and the interaction with the chatbot Ss create their own poems in their groups.
 - Ss can use [ChatGPT](#) to come up with ideas and stanzas for their poems. The poems should emphasise the importance of safety and shelter as a human right in today’s world (losing or finding a shelter).
 - Ss can use [Canva](#) to record their poem and share their group’s poem on [Padlet](#)

Adaptation for special needs students:

T divides Ss in groups. Groups are of mixed ability.

- T assigns roles that are accessible to Ss in each group
 - Researcher - uses [ChatGPT](#) or any other AI tool to search for ideas
 - Drawer or Writer - Writes or draws key ideas for the poems' stanzas, [Magic Media tool in Canva](#) or [AutoDraw](#)
 - Speaker - orally expresses groups ideas and records ideas to [Speech Texter](#)
 - Digital Creator - creates a digital version of the poem on [Canva](#) and shares it on [Padlet](#)
 - Music Creator - uses [Suno](#) to turn poem into a song and shares it on [Padlet](#)

5. Reflection: (15 mins)

- Each group performs their poem/song live for the class **or** plays their [Suno](#) recording.

Assessment:

- [Padlet](#) where Ss comment on the poems and songs of each group using stars.

Teaching Materials:

- PC/laptop/smartphone with internet connection
- [List of emoticons](#) to express the poems' feelings
- Digital Tools:
 - [Canva](#) to record the group's ideas
 - [Padlet](#) for sharing the group's ideas and class discussion
 - [Mizou chatbot – Refugee Teenage Girl](#)- interview
 - [ChatGPT](#) for poem writing
 - [Magic Media tool in Canva](#) or [AutoDraw](#) to draw or write down the group's poem
 - [Speech Texter](#) to record the group's ideas
 - [Suno](#) to turn poems into songs
- Visual Aids:
 - [Article 25 of the UDHR](#)
 - [Simplified UDHR – Youth Version](#) video
 - [Presentation - Human Rights for All.mp4](#)
 - [“Homesick” by Shukria Rezaei and “Tent #50” by Rashid Hussein](#) poems in digital form

Duration:

75 minutes

Activity 4: Influence of Galileo’s Scientific Ideas on the Renaissance

Description:

Students will explore how Galileo’s ideas challenged traditional views during the Renaissance. Students will work in groups to create a digital artifact using AI tools to represent Galileo’s impact. The activity will help them understand Galileo's major scientific contributions and how the scientific thinking he introduced influenced society.

Instructions:

1. Renaissance Reality Check (10 minutes)

- Teacher (T) introduces a short interactive quiz using a book titled [“Science or Superstition?”](#).
- T shows a short 2-minute video clip introducing Galileo Galilei from **Museo Galileo** in Florence, Italy: [GalileosAstronomy](#).
- Students (Ss) are asked to briefly discuss in groups and write a hypothesis on [Google Docs](#) about “Why would questioning the stars be dangerous in the 1600s?” so the teacher (T) can access their initial ideas.

Adaptation for special needs students:

Students with visual difficulties use [Microsoft Immersive Reader](#) to read questions and video subtitles aloud.

2. Galileo Under the Telescope (15 minutes)

- T divides students into small groups (3–4 per group)
- Each group will:
 - Use the web to investigate a topic.
 - Highlight key points
 - Identify 2 ways Galileo’s idea challenged the norm and 1 consequence, and write them on the corresponding [Google Docs](#)
- T assigns each group one of the following Galileo focus topics:
 1. [Galileo’s telescope and the discovery of Jupiter’s moons](#)
 2. [Conflict with the Catholic Church](#)
 3. [Support of the Copernican heliocentric theory](#)
 4. [Influence on scientific method and experimentation](#)

Adaptation for special needs students:

Instead of using the open web (which can be overwhelming or distracting for some learners), special needs students can use [Khanmigo](#) as a research assistant.

1. Ss ask it questions based on their assigned topic to guide their understanding.
2. Ss use its **scaffolded suggestions** to summarize and structure their response on [Google Docs](#) .

3. Digital Product with AI Tools: “Galileo Reimagined” (15 minutes)

- Ss use [DALL·E](#) to make a Renaissance-style poster promoting Galileo’s ideas they found during the previous step.

Product Requirements:

- Include at least one historical fact
- Show a clear change in thinking or worldview
- Ss upload to a shared class [Padlet](#) or [Google Drive](#)
- 1–2 groups briefly share (1 min per group) their creation
- The rest of the groups use an [evaluation protocol](#) to assess their classmates’ artefacts.

Adaptation for special needs students:

Ss use [Curipod AI](#) to create visual storytelling templates (comic strip, one-pager) with prompts like:

“Create a comic strip about Galileo defending his ideas regarding the position of Earth in the Universe.”

4. Reflection: “What Would You Defend?” (Role play) (5 minutes)

- Ss reflect separately on the following scenario: “If you lived in Galileo’s time, would you have defended his ideas? Why or why not?” writing in this [Google form](#)
- T encourages a few students to share their responses aloud, pretending they are people of that era.
- T assesses students’ ability to express their ideas and their perception on the circumstances of that era.

Adaptation for special needs students:

Ss voice-type ideas into ChatGPT using Speech-to-Text tools like [Google Docs Voice Typing](#)

Teaching Materials:

- PC/laptop/smartphone with internet connection
- Digital tools:
 - interactive quiz using a book titled [“Science or Superstition?”](#)
 - [Google docs](#)
 - [Microsoft Immersive Reader](#)
 - *Activity sheets for exploring Galileo in focus topics:*
 1. [Galileo’s telescope and the discovery of Jupiter’s moons](#)
 2. [Conflict with the Catholic Church](#)
 3. [Support of the Copernican heliocentric theory](#)
 4. [Influence on scientific method and experimentation](#)
 - [Khanmigo](#) as a research assistant
 - [DALL·E](#) to make a Renaissance-style poster
 - [Padlet](#) or [Google Drive](#) to share their poster
 - [Curipod AI](#) to create visual storytelling templates
 - [Google Form](#) for reflection
 - [Google Docs Voice Typing](#)
- [Evaluation protocol](#) for peers' assessment of poster
- Visual Aids:
 - video clip introducing Galileo Galilei from **Museo Galileo** in Florence, Italy: [GalileosAstronomy](#).

Duration:

45 minutes

Activity 5: Optimisation of how the school manages energy, water and plants.

Description:

Students (Ss) will explore how their school uses energy, water, and manages plants and affect climate change. Ss will use AI tools to brainstorm and develop innovative ideas of how the school can improve on these aspects.

Instructions:

1. Introduction (10 minutes)

- Teacher (T) initiates a brainstorm about:
 - *What is climate change?*
 - *How does our school use energy, water, and plants to influence climate change?*
- Ss use [Miro](#) to express their initial ideas.

Adaptation for special needs students:

T provides Ss visual supports (icons or simple infographics made in [Canva](#)) to accompany terms like “climate change,” “energy,” “water.”

2. Exploring Solutions (20 minutes)

- T divides Ss into small groups (3–4 people). Each group is assigned one focus area:
 - Energy
 - Water
 - Plants
- Ss working in groups use [ChatGPT](#) to:
 - Identify the possible environmental issues in their school regarding their focus area
 - Ask for eco-friendly solutions

Adaptation for special needs students:

T offers pre-written prompts for [ChatGPT](#) to help students with language processing difficulties, like: “Write 3 easy ways a school can save electricity”.

3. Design solutions (30 minutes)

- Ss working in their groups use [DALL·E](#) or [Canva's AI image generator](#) to create a visual idea for solving issues they identified regarding their focus area.

Adaptation for special needs students:

Ss with writing difficulties use voice input via speech-to-text tools like [Google docs voice typing](#) for students to create text for AI text-to-visual creation.

4. Create a video pitch of the solution (15 minutes)

- Ss write a short script with [ChatGPT](#) to promote their solution.
- Ss use [Lumen5](#) or [Canva Video](#) to generate visuals and voiceover.

Adaptation for special needs students:

Ss with writing difficulties use voice input via speech-to-text tools like [Google docs voice typing](#) for students to create text for AI text-to-video creation.

5. Reflection: Presentations & Feedback (15 minutes)

- Each group of Ss presents their slides or video
- The class (T and Ss) gives quick feedback

Teaching Materials:

- PC/laptop/smartphone with internet connection
- Digital tools:
 - [ChatGPT](#) for Ss to explore
 - [Miro](#) for Ss to express their initial ideas
 - [DALL·E](#) or [Canva's AI image generator](#) to create a visual idea
 - Ss use [Lumen5](#) or [Canva Video](#) to generate visuals
 - [Google Docs voice typing](#)

Duration:

90 minutes

Activity 6: Investigating Climate Change Through Time

Description:

Students (Ss) will learn about the methods scientists use to study past climates (e.g., ice cores, tree rings, sediment layers). Then they will investigate patterns in historical climate changes (glacial/interglacial cycles, abrupt changes) and use AI tools to research, analyse, and visualise data about past and present climate trends, comparing the speed and causes of past vs. current climate change. Finally, Ss will present findings in a clear and engaging way using AI-generated visual or verbal formats.

Instructions:

1. Introduction & Hook (10 minutes)

- Teacher (T) sets a provocative question:
"How do we know what Earth's climate was like 10,000 or even 100,000 years ago?"
- Ss use [Figjam](#) to present their initial ideas.
- T shows a 1-minute video from NASA: "[How Do We Know the Climate Is Changing?](#)"

Adaptation for special needs students:

T provides multiple-choice or sentence stems using [Curipod](#) for scaffolded discussion, like:

"Scientists can learn about past climates by looking at..."

- A) Ice cores
- B) Fossils
- C) Computers
- D) All of the above"

2. Studying climate in the past (15 minutes)

- T asks Ss to work in groups and investigate how scientists study ancient climate and how they work using [ChatGPT](#)
- Ss briefly explain 3 ways they found about writing in a [Google Form](#), so the T can verify their understanding and be able to provide feedback if needed.

Adaptation for special needs students:

- T encourages more talented students to verify their resources with [Perplexity](#) .
- T provides to students with difficulties visual AI-generated icons using [DALL-E](#), or [Flaticon AI](#) for:
 - Ice cores
 - Tree rings
 - Sediment layers

3. Comparing climate change in the past with nowadays (20 minutes)

- T provides students with pre-loaded data/graphs of CO₂ levels and temperature from 800,000 years ago to today:
 - NASA: CO₂ and Temperature Over 800,000 Years: [Graph + Explanation](#)

or

- T provides raw data for the students on Google Sheet: [NASA: CO₂ and Temperature Over 800,000 Years](#) for creating the graphs themselves.
- Ss use [Flourish](#) or [Google Sheets with GPT for Sheets](#) to make climate data charts for comparing today's climate warming to past changes.

Adaptation for special needs students:

- T provides a pre-made chart in [Google slides](#).
- Ss ask [ChatGPT](#) to describe this chart in simple words.

4. Reflection: Presentation of findings and evaluation (15 minutes)

- Ss use [Canva Magic Design](#) or [Gamma.app](#) to generate a simple presentation based on their findings from the previous activity.
- Ss present to the class and receive feedback from classmates and T

Teaching Materials:

- [Figjam](#) for Ss to present their initial ideas.
- 1-minute video from NASA: [“How Do We Know the Climate Is Changing?”](#)
- [Curipod](#) for scaffolded discussion
- [ChatGPT](#)
- [Google form](#)
- [Perplexity](#) for Ss to verify their resources
- visual AI-generated icons using [DALL·E](#), or [Flaticon AI](#)
- NASA: CO₂ and Temperature Over 800,000 Years: [Graph + Explanation](#)
- [Flourish](#) or [Google Sheets with GPT for Sheets](#) to make climate data charts
- Pre-made chart in [Google Slides](#)
- [Canva Magic Design](#) or [Gamma.app](#) to generate a simple presentation

Duration:

60 minutes

Activity 7: Industrial Revolution

Description:

Students investigate the historical, geographical, economic, and social reasons why the Industrial Revolution began in England, developing a deeper understanding of how complex societal changes unfold over time. Through this exploration, they examine the role of natural resources, technological innovation, colonial trade networks, agricultural developments, and population shifts—core themes within the social studies curriculum.

Instructions:

1. Introduction (5 minutes)

- Teacher (T) sets as driving question: “Which countries could have started the Industrial Revolution first during the 18th century, and why?”
- Students (Ss) use [Mentimeter](#) with an AI-powered word cloud, where each student submits a word or short phrase (e.g., “coal,” “colonies,” “technology”). The AI groups and visualises the results in a live word cloud, highlighting the most common ideas in the class.

2. Factors that led to the Industrial Revolution (20 minutes)

- T confirms that the Industrial Revolution took place first in England.
- Ss are divided into 5 groups, and each group studies the situation regarding England in relation to one of the following factors: natural resources, geography, agricultural revolution, trade, and technology.
- Each group of Ss uses an AI research tool (e.g., [Perplexity AI](#)) to construct 2 concrete arguments, in relation to their assigned factor, why the Industrial Revolution took place first in England.

Adaptation for special needs students:

- T provides students with ready-made, scaffolded prompts to use in the AI tool.
 - Examples:
 - “Explain in simple words how [factor] helped England start the Industrial Revolution. Give 2 short reasons.”
 - “List 2 easy-to-understand examples of how [factor] made England stronger.”

3. Let's become Journalists! Presenting findings (20 minutes)

- Ss are assigned the role of journalist. They use an AI image generation tool (e.g., [Bing Image Creator](#)) to create a visual poster illustrating their factor.
- Ss present their poster to the rest of the class. The rest of the students are taking notes.

Adaptation for special needs students:

Students don't have to give a long oral presentation. Options:

- Present with one-prepared sentence (e.g., "This is a coal mine. Coal gave England energy.").
- Use text-to-speech [NaturalReader](#) to read their caption aloud.

4. Reflection

- Ss are commenting on the importance of each factor their classmates have presented.
- T provides focusing points to guide students' reflection using a [Padlet Wall](#).
- T assess students' understanding through their posters and posts.

Teaching Materials:

- [Mentimeter](#)
- [Perplexity AI](#)
- [Bing Image Creator](#)
- [NaturalReader](#)
- [Padlet Wall](#)

Duration:

45 minutes

Activity 8: Ethics of AI – Socratic Dialogue with Machines

Description:

Students explore the ethical implications of Artificial Intelligence (AI) using the Socratic method. They reflect on real-world dilemmas through guided AI conversations and peer dialogue. This activity fosters critical thinking and inclusivity, encouraging students to question, reason, and articulate their ideas with the support of digital tools.

Instructions:

1. Introduction to Ethics and AI (10 minutes)

T introduces the concept of ethics in technology and briefly explains the Socratic method (asking questions to explore ideas).

T shows the following short videos:

- [Youtube What is AI Ethics? \(2-min explainer\)](#)
- [Youtube The Moral Dilemma of Self-Driving Cars – TED-Ed](#)

T launches a Mentimeter poll with statements like:

- *“AI should never make life-or-death decisions”*
- *“It’s okay if AI collects data without asking”*

T discusses the results live and introduces Socrates by explaining:

“Socrates was a philosopher who asked deep questions to help people think clearly. Today, we’ll think like Socrates to question how AI should or shouldn’t be used.”

Adaptation for special needs students:

T encourages Ss

- to use subtitled videos (activate subtitles via YouTube settings).
- to use playback speed adjustment in YouTube (e.g., 0.75x) for easier comprehension.

T

- provides a simplified definition handout (e.g., ethics = "knowing right from wrong").
- offers printed or digital video summaries with visuals.
- allows verbal or pictorial answers for the Mentimeter activity (Ss can choose emojis or pictures if writing is difficult).

2. Individual Socratic Dialogue with ChatGPT (15 minutes)

Ss choose one ethical question provided by T (e.g., “Should AI be used in grading students?” or “Is it fair for AI to replace human jobs?”). Then they use [ChatGPT](#) with this prompt:

“You are Socrates. Ask me questions about this ethical problem so I can think more deeply about it.”

Ss write down:

- 2–3 questions asked by [ChatGPT](#)
- A short reflection: “What did I realize or reconsider through the questions?”

Adaptation for special needs students:

T

- allows use of speech-to-text tools like [Voice In](#) or [Google Docs](#) voice typing.
- provides sentence starters to support writing, such as: “One question that made me think was...”
- encourages brief reflections (1–2 sentences) using tools like [ChatGPT](#) or [Vocaroo](#) for voice responses.
- allows Ss to work in pairs to read or discuss ChatGPT’s responses together.

3. AI Ethics Roundtable Podcast (20 minutes)

Students record short podcast-style audio reflections as groups. Each group plays the role of an "AI Ethics Roundtable" and responds to one key ethical question that emerged from their ChatGPT discussion.

AI Ethics Role Cards – Socratic Dialogue

Case 1 – AI in Education

Scenario:

A school is using AI to grade student essays. Some students say it's faster and more fair. Others worry the AI doesn't understand creativity or context.

? Ethical Question:

Is it ethical to let AI grade students' work instead of teachers?

Case 2 – AI and Surveillance

Scenario:

A city uses facial recognition AI to track crime. It has reduced theft, but some citizens feel constantly watched and fear mistakes in identification.

? Ethical Question:

Should we trade privacy for safety using AI surveillance?

Case 3 – AI and Jobs

Scenario:

A company replaces 100 human workers with AI robots. The company saves money, but the workers are left without jobs.

? Ethical Question:

Is it fair to replace humans with AI if it improves business profits?

Case 4 – AI in Healthcare

Scenario:

Hospitals use AI to diagnose patients faster than doctors. But the AI sometimes makes mistakes with people from minority backgrounds.

? Ethical Question:

Can we trust AI in making life-and-death decisions in healthcare?

Case 5 – AI and Social Media

Scenario:

Social media platforms use AI to recommend content. Many teens say it keeps them engaged, but it can also lead to addiction and spread harmful ideas.

? Ethical Question:

Should there be limits on how AI is used in social media for teens?

Each mini-podcast includes:

- The ethical question they chose
- A summary of different viewpoints or tensions
- The group's evolving opinion, using ideas from [ChatGPT](#) or personal insights
- One closing quote or question to leave the audience thinking

T provides clear steps and a podcast structure template. Final recordings are uploaded to a Padlet titled: "Voices on AI Ethics".

Adaptation for special needs students:

T

- provides a template with sentence frames such as:
“The question we discussed was...”, “One idea we had was...”, “We’re still wondering about...”
- allows students to record one short part each or even contribute by writing the script.
- encourages use of [Vocaroo](#) or [ElevenLabs](#) for voice or text-to-speech.
- pairs students carefully to ensure peer support in reading, scripting, or recording.

4. Socratic Dialogue in the Agora and Reflexion (15 minutes)

Ss begin by taking a short virtual tour of the Agora of Athens, the birthplace of Socratic dialogue, using this guided video (no need to watch the entire video):

[Agora of Athens – 3D Walkthrough](#)

T puts SS in groups of 3 and invites them to imagine they are young philosophers meeting Socrates to discuss the ethics of AI.

Ss then interact with a virtual Socrates using an AI tool like [Character.AI – Socrates character](#), asking questions such as:

- “Is it fair to let AI make decisions about people’s futures?”
- “How can we know if an AI is acting ethically?”
- “Should we always trust AI tools in school or work?”

After chatting with Socrates, Ss form small groups (3–4) to continue the discussion using these guided Socratic questions:

- What is the ethical problem here?
- Who is affected by this use of AI?
- What’s the worst-case scenario?
- What would we change to make it more ethical?

Adaptation for special needs students:

T

- provides simple, clear Socratic questions and models a sample dialogue using the AI tool.
 - *Is it okay for a computer to decide what happens in someone's life?*
 - *How can we tell if a computer is doing the right thing?*
 - *Can we always believe what a computer tells us at school or work?*
- shares the Agora video with subtitles and a simplified map showing key places.
- pairs students for support during discussions to build confidence.
- allows use of voice recordings or short videos via [Vocaroo](#) or [ElevenLabs](#) for reflections.
- offers a simplified peer evaluation checklist with stars or symbols (e.g., ✓, smiley face) to help Ss evaluate peers.

5. Reflection: Peer evaluation & Feedback (5 minutes)

Ss then complete a peer evaluation of each other's participation in the Socratic dialogue, rating:

- How clearly did they express their ethical questions or ideas?
- How well did they listen and respond to others' ideas?
- How thoughtful and respectful were their reflections?

For each peer's work, give a star rating from 1 (lowest) to 5 (highest) for the following:

Criterion	1	2	3	4	5
Clarity of ethical questions/ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of listening & responses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thoughtfulness & respectfulness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Teaching Materials:

- Internet-connected devices
- Printed role cards* and question starters
- Checklist for group work and reflections

Digital Tools:

- [Mentimeter](#) - for live polling or quizzes
- [ChatGPT](#) – for Socratic questioning
- [Padlet](#), [Canva](#), [Genially](#) – for digital presentations
- [DALL·E](#), [Bing Image Creator](#), [Character.AI – Socrates character](#) – for AI-generated visuals
- [Vocaroo](#), [ElevenLabs](#), [Luvvoice](#) – for audio creation
- [Voiceln](#) - for speech-to-text tool

Duration:

65 minutes

Activity 9: Financial Literacy – Making Smart Money Choices with AI

Description:

Students examine foundational concepts of financial literacy—budgeting, saving, spending, and distinguishing needs versus wants—through a social studies lens, considering how economic choices shape individual lives, communities, and societies. Guided dialogue and collaborative activities help students explore the impact of personal and civic financial decisions, while AI tools allow them to simulate real-life scenarios and reflect critically on money habits. This lesson emphasizes responsible citizenship, informed decision-making, and inclusive collaboration, supported by digital tools that connect personal finance to broader social and economic systems.

Instructions:

1. Introduction to Financial Literacy (10 minutes)

T introduces the concept of financial literacy and explains why learning about money matters is essential. A brief discussion about real-life money decisions is prompted.

T shows the following short videos:

- [What Is Financial Literacy?](#)
- [Needs vs. Wants](#)

T launches a [Slido](#) poll with statements like:

- *“I know how to make a monthly budget”*
- *“Spending all your paycheck is okay if you feel happy after”*
- *“I save money regularly”*

Live results are discussed, leading to this intro:

“Today, we’ll use free AI tools and real-life situations to figure out how to make smart money choices.”

Adaptation for special needs students:

T

- enables subtitles and slower playback in YouTube (0.75x).
- provides a visual handout with key terms (budget, saving, spending) using icons.

Financial Literacy



Budget

A plan for how to use your money.

Tip: Write down what you earn and what you spend.



Saving

Keeping money to use later.

Tip: Save a little money each week for something important.



Spending

Using money to buy things you need or want.

Tip: Think before you spend—do you really need it?

- distributes printed/digital summaries of videos with step-by-step visuals.
- allows students to use emoji responses or visual cues (✅, ❌, 😊, 🛒) in [Slido](#) polls.

2. AI Budget Coach with Poe – Claude or Gemini (15 minutes)

Ss are given simple character profiles (e.g., “You are Alex. You earn €100 per week and want to save for a bike, pay your phone bill, and buy snacks.”)

Ss use [Poe](#) with a selected AI model like [Claude](#) (Anthropic) or [Gemini](#) and enter this prompt:

“Act like a teen-friendly financial coach. Help me plan how to spend and save my money with simple explanations.”

Ss write down:

- 2–3 pieces of advice the AI gave
- One thing they learned or changed their mind about

Adaptation for special needs students:

T

- provides access to speech-to-text options in [Chrome](#) (right-click > "Speech input").
- uses sentence starters: "The AI said I should...", "I didn't know that..."
- allows students to record a voice memo using Online [Voice Recorder](#)
- offers peer partners or adult support to help read/understand AI responses.

3. Smart Spending Simulator Game (20 minutes)

Ss practice budgeting by making spending choices and experiencing the consequences in a realistic, interactive scenario.

Ss work in small groups using a free web-based game where they simulate living paycheck-to-paycheck. Each group receives a Teen Budget Profile Card and a Budgeting Sheet to plan and track spending, savings, and outcomes. Students review their profile, plan their first month's budget, make spending decisions in the game, and record results on the sheet. Groups can adjust their choices for the next round based on what happens in the game.

[Play Spent](#) - *(Teens are put in the scenario of living paycheck-to-paycheck and facing realistic financial challenges)*

Teen Budget Profile Flashcards

Jordan – The Concert Planner
👤 Age: 17
💰 Income: €50 (part-time job at a café)
📄 Fixed Expense: €10 phone plan
🎯 Wants & Challenge: Save for concert tickets (€80), buy snacks after school Finds it hard to save — spends quickly
✅ Goal: Create a plan to save €80 in 4 weeks while still enjoying small treats.

Amina – The Responsible Sibling
👤 Age: 17
💰 Income: €60 (babysitting + allowance)
📄 Fixed Expense: €20 for groceries to help family
🎯 Wants & Challenge: Buy new sneakers (€70), save for university Balancing family support with saving
✅ Goal: Prioritize between short-term wants and long-term savings.

Luca – The Gamer on a Budget
👤 Age: 17
💰 Income: €40 (dog walking + weekend tutoring)
📄 Fixed Expense: €15 mobile gaming subscription
🎯 Wants & Challenge: Buy a new game (€60) and a controller (€30) Always tempted by in-app purchases
✅ Goal: Decide what to spend on now and what to wait for.

Sofia – The Saving Star
👤 Age: 17
💰 Income: €70 (freelance art + parents' support)
📄 Fixed Expense: €20 for art supplies
🎯 Wants & Challenge: Start saving for driving lessons (€400 total) Has many smaller distractions (online sales, coffee)
✅ Goal: Build a savings plan for driving lessons while staying motivated.

Theo – The Last-Minute Spender
👤 Age: 17
💰 Income: €55 (school tutoring)
📄 Fixed Expense: €25 monthly bus pass (paid upfront)
🎯 Wants & Challenge: Buy birthday gifts for friends (€15), upgrade headphones (€90) Often spends before planning
✅ Goal: Learn how to spread spending across weeks and prioritize.

Budget Planning Sheet

Use this sheet to plan how you will spend and save your money each week. Fill in the amounts below.

Category	Amount (€)
Weekly Income (e.g., part-time job, allowance)	
Fixed Expenses (e.g., phone bill, transport)	
Wants (e.g., snacks, games, clothes)	
Savings Goal (e.g., concert ticket, driving lessons)	
Leftover / Extra	
Notes or Reflection	

Reflection Questions:

1. What is one thing you could do differently to save more money?
2. Was it hard to decide between wants and needs? Why or why not?
3. What did you learn from this budgeting activity?

Adaptation for special needs students:

- T uses visual planning boards (e.g., drag-and-drop icons) before gameplay

SMART SPENDING VISUAL PLANNING BOARD

INCOME

FIXED EXPENSES

Rent Transportation Groceries Phone / Internet

VARIABLE SPENDING

Entertainment Shopping Eating Out Hobbies

SAVINGS / EMERGENCY

Unexpected Expenses

- allows students to draw or role-play their choices instead of writing
- offers a simplified game version (Ss can work with partners)
- encourages voice notes using [SpeakPipe](#) Voice Recorder

4. Financial Wisdom Wall: AI Advice Remix & Class Reflection (15 minutes)

Ss create a collaborative class "Financial Wisdom Wall" with the best financial advice they received from AI tools, personal experiences, or group discussions.

Steps:

- Each student (or pair) chooses one favourite piece of money advice they found helpful – from the AI coach, budgeting game, or group talk.
- They rewrite the advice in their own words and add:
 - A reason why they think it's helpful
 - A visual (drawing, emoji, or image)
- Ss post their advice on a shared [Padlet](#) or physical poster under categories like:
 - Smart Spending
 - Saving Goals
 - Avoiding Debt
 - Needs vs. Wants
- Ss complete a reflection sheet with the following questions :
 - “What choices did we make as a team?”
 - “What were our biggest challenges?”
 - “What did we learn about money?”

Group responses are shared via a [Wakelet](#) board titled: “*Smart Money Decisions*”

T leads a closing group reflection, asking:

- “What’s one new thing you’ll try with money after today?”
- “Did the AI give you good advice? Why or why not?”
- “Would you trust AI tools for financial help in the future?”

Adaptation for special needs students:

T

- allows students to contribute using drawings, stickers, or emojis.
- provides sentence frames: “Good advice is...” / “This helped me because...”
- supports audio entries using [Veed.io Free Voice Recorder](#) or visual icons on Padlet.
- pairs students with buddies to assist with reading/writing.

Teaching Materials:

- Devices with internet
- Role cards (teen budget profiles)
- Budget planning sheets
- Group reflection and peer feedback templates (paper or digital)

Digital Tools:

- [Slido](#) – live student polls
- [Poe](#) ([Claude](#) or [Gemini](#)) – free AI coach
- [Perplexity.ai](#) – free AI advisors
- [Play Spent](#) – game-based simulation
- [Wakelet](#) – share learning
- [SpeakPipe](#), [Online Voice Recorder](#) – audio reflections
- [Clipchamp](#) – accessible video recording tool

Duration:

60 minutes

Activity 10: Understanding the Principles of Democracy

Description:

Students explore foundational democratic principles—popular sovereignty, rule of law, equality, participation, and rights—through interactive AI and digital tools. This lesson combines collaborative exploration with critical reflection to help students understand democracy's real-world applications and challenges.

Instructions:

1. Democracy Mindset Activation (10 minutes)

Teacher (T) introduces the idea of democracy and begins by posing the central question: "What makes a society truly democratic?" Students share initial thoughts in pairs before contributing to a whole-class discussion.

T shows these short videos:

- TED-Ed: "Democracy - A short introduction" https://ed.ted.com/best_of_web/Rgalhs2w/
- Philo notes: " What is Democracy? " <https://www.youtube.com/watch?v=GPvZZOZkRO>

T launches a [Pol.is](#) poll with provocative statements like:

- "Everyone in a democracy has equal influence."
- "Democracy automatically ensures justice."
- "Voting is democracy's core."

Live results are discussed, leading to this intro:

"Today, we'll use AI tools and collaborative activities to dig deeper into what makes democracy work—or fail."

Adaptation for special needs students:

T






- enables subtitles & slower playback (0.75x).
- provides handout with democracy icons and key terms.

What is Democracy?




Democracy is a system of government where people have the power to make decisions about how they are governed.

Central Question: ? *What makes a society truly democratic?*


Key Principles of Democracy

Principle	Icon	Simple Definition	Example
Popular Sovereignty		People have the power to make decisions through voting or participation.	Citizens vote for school council representatives.
Rule of Law		Everyone must follow the same laws, including leaders.	A principal cannot punish a student unfairly; rules apply to all.
Equality		Every person has the same rights and opportunities.	Boys and girls have the same access to education.
Participation		People take part in decision-making and civic life.	Students join committees or clubs to influence school policies.
Rights		Everyone has protections and freedoms, like speech and privacy.	Students can express opinions safely in class discussions.

Emoji Responses for Quick Reflection

-  = I agree / This is true
-  = I disagree / This is false
-  = Voting / People's choice

Icons Quick Reference

-  Voting / Popular Sovereignty
-  Law / Rule of Law
-  Equality / Fairness
-  Participation / Engagement
-  Rights / Protection

- provides simplified video summaries with supporting visuals.
- accepts emoji responses (, , , ).

2. Scenario Challenge (15 minutes)

Students are divided into groups and given short democratic dilemmas (e.g., “The school council wants to ban phones. Is this democratic?”).

Democratic Dilemmas

- Phone Ban: The school council wants to ban phones in school. Is this democratic?
- Homework Choices: Students can choose which homework assignments to do. Is this democratic?
- Cafeteria Menu: Students vote on the lunch menu, but the principal chooses the final option. Is this democratic?
- Dress Code: The school introduces a strict uniform policy without asking students. Is this democratic?
- School Event Timing: The school schedules events during lunch without student input. Is this democratic?

In groups, they input the scenario into a free AI tool such as [Perplexity.ai](https://perplexity.ai) or [You.com](https://you.com) Chat with the prompt:

“Analyze this situation: Which democratic principles are being respected or ignored?”

Rather than simply accepting AI responses, groups must:






1. Identify which democratic principle(s) the AI highlighted
2. Evaluate the AI's reasoning—do they agree or disagree?
3. Consider what perspectives the AI might have missed

This creates understanding that AI can inform but not replace human judgment about complex democratic questions.

Adaptation for special needs students:

T

- Provides simplified dilemmas with visuals or icons.

Scenario	Visual/Icon	Sentence Starter
Phone Ban: School says no phones		“The AI said this is democratic because... I think...”
Choose Homework		“The AI said this is democratic because... I think...”
Vote on Lunch Menu		“The AI said this is democratic because... I think...”
Uniform Rules		“The AI said this is democratic because... I think...”
Event During Lunch		“The AI said this is democratic because... I think...”

- Offers sentence starters: “The AI said this is democratic because...” / “I think...”
- Allows voice note reflections via [SpeakPipe](#).
- Pairs Ss with buddies for AI navigation support.

3. Creative Democracy in Action (20 minutes)

Students work in groups to design a short activity, poster, or explainer that teaches one democratic principle (e.g., rule of law, equality, participation).

They may use AI tools (e.g., [Canva Magic Design](#), [Twee AI](#), or [You.com](#) Chat) to help generate examples, visuals, or guiding questions – but must adapt the output into their own words.

Task options (choose one):

- Create a mini-quiz (3 questions) about one principle.
- Make a visual infographic/poster illustrating the principle in action.
- Write a “What if...?” scenario that shows what happens when the principle is ignored.

Groups upload/share their product on a collaborative digital board (e.g., [Padlet](#)).

Adaptation for special needs students:

T

- Provide choice boards with clear icons and role descriptions.
- Allow drawings, role-play, or voice recordings instead of written text.
- Simplify roles (e.g., researcher, designer, presenter).

Role Cards for Group Work & Debate

Role	Description
Researcher	Finds relevant information using AI or resources. Sentence starter: 'According to the source...'
Designer	Creates visuals, posters, or creative elements. Sentence starter: 'Here's how we can show this idea...'
Presenter	Explains group findings to the class. Sentence starter: 'Our group discovered that...'
Facilitator	Keeps the group on task and ensures fairness. Sentence starter: 'Let's make sure everyone shares...'
Timekeeper	Tracks time and helps the group stay focused. Sentence starter: 'We have 5 minutes left, so let's...'
Challenger	Asks critical questions and tests ideas. Sentence starter: 'But what if...?' or 'How would this work if...?'

4. Democratic Discourse and Synthesis (15 minutes)

Ss use [Kialo Edu](#) for structured debate.

Example topic: *“Is the rule of law or citizen participation more crucial to democracy?”*

Reflection outcomes are shared. This debate format encourages students to build on each other's arguments while considering multiple perspectives—a democratic skill itself.

Students briefly review peer creations from the [Padlet](#) board, identifying connections between different democratic principles and real-world applications.

T guides Ss to fill in a reflection template and to articulate how their understanding of democracy has evolved throughout the lesson, emphasizing both the complexity of democratic governance and their role as future citizens.

Student Reflection Template

What did I learn today about democracy? _____

Which principle of democracy did my group focus on? _____

How did AI help me in this activity? _____

Did I agree with the AI’s reasoning? Why or why not? _____

What challenges did I face? _____

One new insight I discovered: _____

If I could change one thing in this activity, it would be: _____

Teaching Materials:

- Devices with internet
- Role cards (profiles)
- Student reflection templates
- Democracy principle reference cards

Democracy Principle Reference Cards

Principle	Definition & Example
Popular Sovereignty	Power comes from the people. Example: Citizens voting in elections.
Rule of Law	Everyone must follow the law, including leaders. Example: A president cannot break the law without consequences.
Equality	All people have equal rights and opportunities. Example: Equal access to education regardless of background.
Participation	Citizens actively take part in decision-making. Example: Attending town hall meetings.
Rights	Fundamental freedoms are protected. Example: Freedom of speech and religion.

Digital Tools:

- [Pol.is](#) – consensus polling platform that collects and visualises group opinions in real time
- [Twee AI](#) – AI-powered worksheet and activity generator
- [You.com](#) – a search and chat assistant that provides summaries, explanations, and creative responses
- [Perplexity.ai](#) – for analysing scenarios and providing reasoning about complex questions
- [Canva Magic Design](#) – AI-assisted design tool for creating visuals, infographics, and presentations
- [SpeakPipe](#) – a voice recording platform that allows users to submit audio reflections or responses
- [Padlet](#) – collaborative digital board
- [Kialo Edu](#) – structured debate platform for mapping arguments and exploring multiple perspectives

Duration:

60 minutes

Closure: Our Learning Journey: Closing Reflections

Description:

Students consolidate their learning from the 10 activities by reflecting on key takeaways and drawing connections across themes. AI tools are used to make reflection interactive, creative, and inclusive.

Instructions:

1. **AI Reflection Prompt (10 min):**

Students use [ChatGPT](#) (or a classroom-approved AI chatbot such as [Perplexity AI](#)) with the prompt:

“Summarise what I’ve learned about human rights, democracy, climate change, science, financial literacy, and AI ethics in one short paragraph. Then, suggest one way I can apply this learning in my community or school.”

2. **Collective Word Cloud (10 min):**

Using [Mentimeter](#) or [Poll Everywh](#), students enter their “one key learning” or “next action.” AI-assisted visualisation generates a live word cloud for the class, highlighting common themes.

3. **AI-Generated Closing Image/Quote (10 min):**

As a class, students suggest one powerful phrase that captures the module (e.g., *“Fairness for All”*).

a. For an **image**, use: [DALL·E \(OpenAI\)](#) or [Bing Image Creator](#)

b. For a **quote**, use [ChatGPT](#) with a prompt like *“Write a Socratic-style quote about fairness and democracy for secondary students.”*

Teaching Materials:

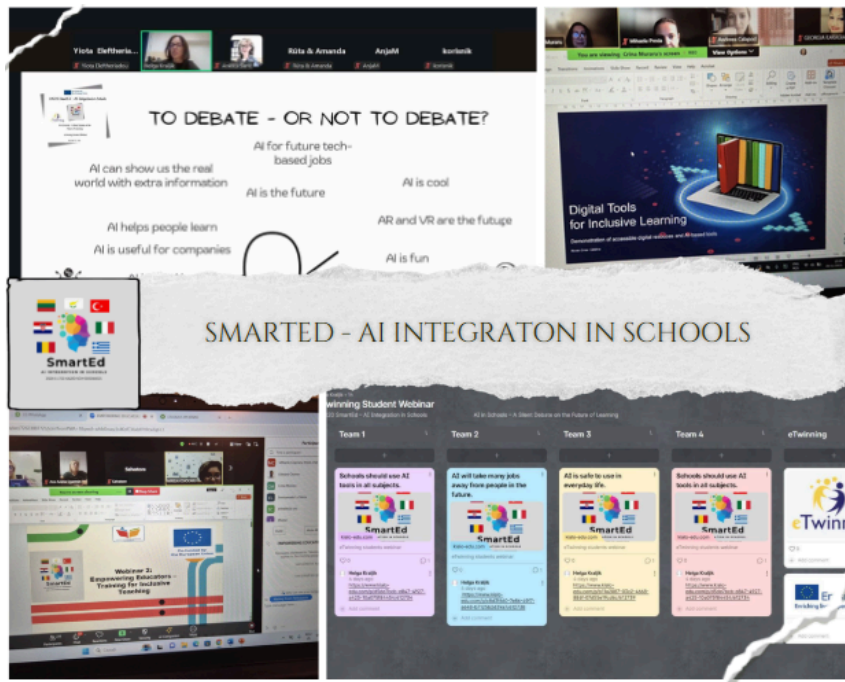
- Internet-connected devices (laptops, tablets, or smartphones)
- [Mentimeter](#) or [Poll Everywh](#)
- [ChatGPT](#) or [Perplexity AI](#)
- [DALL·E](#) or [Bing Image Creator](#)

Duration:

30 minutes

MODULE 6

Creative Arts Showcase to encourage creativity and self-expression through adaptive arts and music activities



Author: Mihaela Cojocaru

Institution: ASOCIATIA PENTRU EDUCATIE SI FORMARE ASEF BACAU, Romania

1. Module Description

This module is designed to inspire creativity, self-expression, and emotional well-being through adaptive art and music experiences. By using AI-powered tools, students with diverse abilities, including those with special needs, will be guided to create personalized artistic and musical pieces in an inclusive, accessible environment. The module supports teachers in integrating adaptive technologies to foster engagement, expression, and collaborative artistic experiences across learning levels and backgrounds.

2. Content and activities of the module

C: Adaptive art projects, virtual music composition tools, and multimedia art galleries

A: Artistic expression via various media and virtual music performances

3. Module Objectives

- a. To introduce AI-assisted tools that support creative expression in the visual arts and music
- b. To ensure students of varying abilities can participate in and enjoy the arts through adaptive technologies
- c. To foster inclusive classroom environments where creativity is celebrated and every learner's contribution is valued

4. Module Learning Outcomes

- a. Students will be able to use adaptive digital art tools to create personalized artistic works
- b. Students will demonstrate musical creativity using virtual instruments and composition software
- c. Students will present their work in multimedia formats, reflecting individual ideas and emotions
- d. Students will collaborate and appreciate artistic differences within diverse peer groups

5. Key Words

Adaptive learning, AI in education, inclusive arts, digital art tools, music composition, creativity, multimedia, special needs, accessibility, student expression

6. Methodology

Differentiated Instruction: Tailored activities and tool options based on students' individual learning profiles and creative strengths

Technology-Enhanced Learning: Use of AI-based apps for drawing, composing, and curating art that automatically adjusts to skill levels and preferences

Project-Based Learning: Students work on long-term creative tasks culminating in an exhibition or performance

Collaborative Learning: Students co-create digital pieces or support one another's artistic development in mixed-ability groups

Reflective Practice: Students and teachers engage in feedback and self-evaluation to build confidence and improve creative techniques

Adaptive Learning Scenario

Warm-up & Energizers:

Description:

This short session introduces learners to the theme of creativity and expression in an inclusive, low-pressure environment. It helps students activate their imagination and feel comfortable expressing ideas in visual or auditory formats. The activity is adapted for different ability levels using visual aids, sounds, movement, or simple AI-based interaction tools to ensure full participation.

Instructions:

Activity: "Draw the Music"

- Ask students to make music using these AI tools

[Musicful](#) [BandLab](#) [Beatoven.ai](#) [aimusic.so](#)

- Ask students to use digital drawing tools (or paper) to sketch whatever comes to mind as they listen—shapes, colors, scenes, or emotions.
- Students then briefly share what they drew and why.

Variation for Diverse Needs:

- Provide symbol-based choices for students with limited motor skills (e.g., choosing pre-made icons or shapes).
- For visually impaired students, focus on auditory interpretation through verbal or musical responses.

Optional Energizer:

- Use an AI-powered rhythm game (such as [Blob Opera](#)) where students mimic sounds or movements in a fun, low-stakes format.

Teaching Materials:

- AI-generated music clips (e.g., [Soundraw](#), [Amper Music](#), or [YouTube](#))
- Digital drawing tools (e.g., [Sketchpad](#), [AutoDraw](#), [Microsoft Paint](#), or tablet apps)
- Visual/symbol boards for non-verbal learners
- Access to interactive music tools like [Chrome Music Lab](#)

Duration:

20 Minutes

The main part:

Activity 1: Express Through Music and Art

Description:

This activity uses music as a catalyst for artistic expression. Students will listen to an AI-generated instrumental track and translate what they hear into visual or emotional representations. They will then build on this by titling their work, reflecting on emotions, and contributing to a collective digital gallery or exhibition. Each step is designed with adaptive options to ensure full participation by all students, including those with special needs.

Instructions:

1. Draw the Music (15 minutes)

- T (Teacher) plays an [AI-generated instrumental track](#) (1–2 minutes, calm and reflective). Ask students to freely draw what the music makes them feel or imagine—colors, shapes, objects, or scenes.

Adaptation for special needs students:

T offers pre-drawn symbolic shapes or textures (e.g., wavy lines for calm, zigzags for energy). For students with motor difficulties, use apps with voice-based or touchpad drawing. Visually impaired students can describe feelings or use textured materials.

2. Title Your Artwork (5–7 minutes)

- Ss (Students) complete the drawing, and then each student gives their piece a title that reflects the emotion, scene, or story they imagined.

Adaptation for special needs students:

T provides emotion cards or image prompts to help with title generation. Allow verbal descriptions or selection from a list. Use AAC (augmentative and alternative communication) tools if needed.

3. Color and Emotion Mapping (10 minutes)

- Ss identify the key colors in their drawing and link them to emotions (e.g., blue = calm, red = excitement). Discuss as a group how different sounds might influence colors.

Adaptation for special needs students:

T provides emotion-color charts with simple visuals. Use tactile color cards or offer audio support for color names and emotion words.

4. Music Match & Remix (15 minutes)

- In small groups, Ss listen to a few short music clips (AI-generated or teacher-selected). They choose one that matches their drawing or remix elements using a tool like Google Music Lab.

Adaptation for special needs students:

T limits choices to 2–3 tracks. For students with cognitive or attention challenges, guide them with yes/no questions or a visual scale:

- *Does this music feel like your picture?*

5. Showcase & Reflection (10–12 minutes)

- Each student presents their drawing, title, and chosen music clip to the class. The class reflects on how music and art can express thoughts and feelings differently.

Adaptation for special needs students:

T allows non-verbal presentation (e.g., image on screen + music). For those uncomfortable with speaking, read out their descriptions. Encourage peer support or group presentation.

Teaching Materials:

- AI-generated music clips (e.g., from [Musicful.ai](#), [Soundraw](#), [Beatoven](#))
- Digital drawing tools or printed paper and art supplies
- Emotion-color mapping charts
- Pre-made shape or symbol cards
- Tablets/laptops with music remix tools (e.g., [Google Music Lab](#))
- Projector or smartboard for sharing work

Duration:

60 minutes

Activity 2: My Story, My Soundtrack

Description:

In this activity, students will create a short story, poem, or visual narrative and pair it with a self-selected or AI-generated music track that matches the tone or theme of their story. This activity strengthens storytelling, emotional awareness, and artistic thinking while promoting inclusion by offering multiple ways to express ideas—through words, visuals, or music.

Instructions:

1. Story Spark – Pick a Theme (10 minutes)

- T presents 3–4 visual prompts (e.g., a [forest](#), [a city at night](#), [a storm](#), [a festival](#)). Ask students to choose one and start thinking about a short story or visual narrative.

Adaptation for special needs students:

T uses high-contrast images or tactile objects for visually impaired students. For students with cognitive difficulties, offer simplified choices and sentence starters (e.g., *In the forest, I saw...*).

2. Create Your Story or Scene (15 minutes)

- Ss write or draw a short story, comic strip, or descriptive scene inspired by the chosen theme. They can work alone or in pairs.
 -

Adaptation for special needs students:

T allows audio recording instead of writing. Offer visual organizers or story templates. Students may use AAC devices or draw instead of writing.

3. Choose or Generate a Soundtrack (10–12 minutes)

- Ss select a music track that fits the mood of their story. They can choose from pre-approved tracks or use an AI tool (e.g., [Musicful.ai](#) or [AIMusic.so](#)) to generate one based on a mood prompt.

Adaptation for special needs students:

T offers 2–3 ready-made tracks with symbols or emotion tags (e.g., *happy, mysterious*). Assist with typing prompts for AI music tools if needed.

4. Story + Sound Presentation (10–12 minutes)

- Ss share their story or image with the class while playing the selected music. Emphasis is on emotional connection and expression—not on performance.

Adaptation for special needs students:

Students can play their music and display their story/image without speaking. A peer or teacher can read or describe it on their behalf.

5. Peer Reflection & Feedback (10 minutes)

- Ss give one positive comment on what they felt or imagined during the presentation. Use simple sentence frames:
 - Your music made me feel...
 - I liked how your story and music worked together.

Adaptation for special needs students:

T provides sentence starters or icons for emotions. Use visual or tactile feedback methods (e.g., thumbs up cards, emoji cards).

Teaching Materials:

- AI music tools (e.g., [Musicful.ai](#), [AIMusic.so](#))
- Tablets/laptops or printed materials
- Projector or speakers for presentations

Duration:

55–60 minutes

Activity 3: Build a Sound & Color Mood Wall

Description:

In this multisensory activity, students explore the connection between sound, color, and emotion. They work individually or in groups to create a collaborative "**Mood Wall**" using AI-generated sound loops and color expressions. The activity fosters creativity, emotional literacy, and sensory expression while offering flexible and adaptive ways for all learners to participate.

Instructions:

1. Sound & Color Matching – Introduction (10 minutes)

- T plays 3 short, AI-generated music loops (e.g., calm, energetic, mysterious). Ask students:
 - *What color do you think matches this sound?*
- Discuss responses.

Adaptation for special needs students:

T uses emotion-color charts, tactile color swatches, or audio descriptions. For non-verbal students, offer pre-made emotion-color cards to match with each sound

2. My Sound, My Color (10–12 minutes)

- Ss choose or generate one AI music loop and select 1–3 colors that best represent how the music makes them feel. They create a small visual panel with color(s), symbols, or keywords.

Adaptation for special needs students:

T provides pre-cut shapes and color stickers. Allow use of voice-to-text or assisted drawing apps. Offer a choice board with emotions and color pairings.

3. Add to the Wall (5 minutes)

- T attaches their visual panels to a shared classroom wall or digital board labeled “Our Mood Wall.” If digital, use tools like [Padlet](#)

Adaptation for special needs students:

T provides peer or teacher support to place or upload pieces. Use tactile boards or digital avatars if appropriate.

4. Walk & Feel (10 minutes)

- In small groups, Ss explore the Mood Wall and select 2 pieces that resonate with them. They share which colors and sounds they connect with and why.

Adaptation for special needs students:

T uses structured sentence starters or emotion charts for feedback. Students may express choices using tokens, gestures, or AAC devices.

5. Reflect & Close (10 minutes)

- Whole-class reflection on how sounds and colors helped express emotions. T asks:
“What did you learn about yourself through this activity?”
“How did it feel to see everyone's different expressions?”

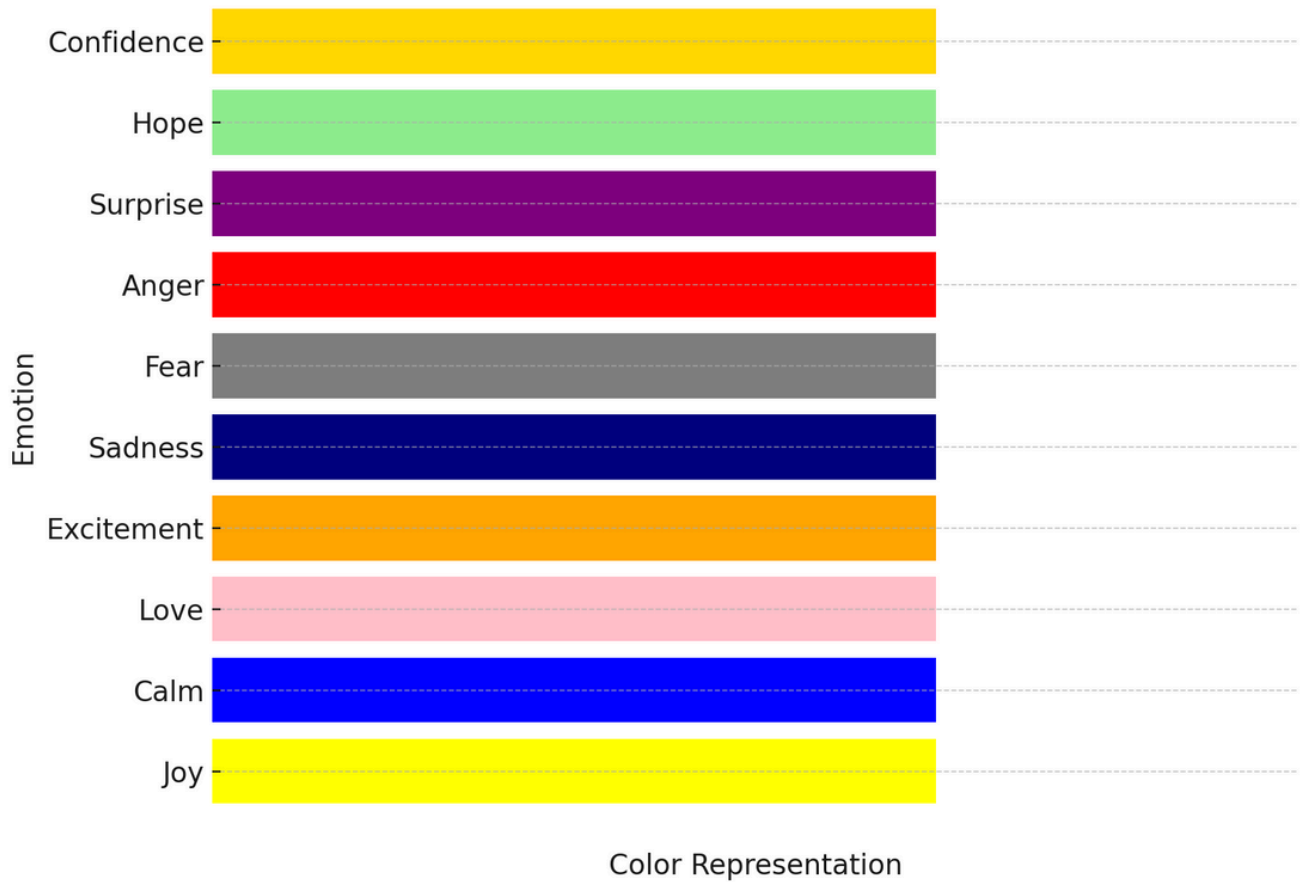
Adaptation for special needs students:

T provides a simplified reflection form (e.g., "I felt __ when I heard __"). Use images, emojis, or physical prompts like emotion cubes to support expression.

Teaching Materials:

- AI music loops (e.g., generated from Musicful.ai or AIMusic.so) [MUSIC](#)
- Emotion-color charts

Emotion-Color Chart



- Art supplies (paper, markers, colored stickers, pre-cut shapes)
- Tactile materials (fabric swatches, textured cards)
- Digital tools ([Padlet](#), projector/speakers)

Duration:

55 minutes

Activity 4: Move & Mold – Expressing Emotion Through Motion and Digital Sculpture

Description:

This activity combines body movement and digital clay modeling to help students express emotions and stories in non-verbal, creative ways. It emphasizes **adaptive arts** by allowing students to choose their preferred form of expression—physical movement or virtual sculpting—using accessible technology. This supports students with diverse needs, including motor, sensory, or communication challenges.

Instructions:

1. Movement Warm-Up – Feel the Form (10 minutes)

- T guides students in a simple movement routine inspired by shapes and emotions (e.g., “stretch tall like a tree,” “curl up like a sad cloud,” “wiggle like a joyful wave”).

Adaptation for special needs students:

T allows seated movement, finger/hand signs, or facial expressions instead of full-body actions. Use images or symbols to demonstrate each shape/emotion.

2. Choose an Emotion to Sculpt (5 minutes)

- Ss pick an emotion from a chart (e.g., Joy, Anger, Curiosity, Peace) and are asked: “How would this emotion look if it had a shape?”

Adaptation for special needs students:

T uses tactile cards, color symbols, or pre-recorded audio to support selection.

3. Digital Clay Modelling (15 minutes)

- Using an easy, free web app like [SculptGL](#), students sculpt a shape that expresses their chosen emotion. They can stretch, mold, carve, or inflate their virtual clay form.

Adaptation for special needs students:

T allows group work for students needing assistance. Use a touchscreen interface or adapted mouse/joystick. Offer pre-made shape templates that students can edit.

4. Share the Sculpture and Movement (10 minutes)

- Ss display their sculpture to the class and (optionally) pair it with a movement or sound that reflects their creation.

Adaptation for special needs students:

Ss can use a voice-output device, pre-written description, or simply show the work with a smile or gesture. A peer can assist in presenting.

5. Create the Digital Emotion Garden (10 minutes)

- All sculptures are saved (screenshots or exports) and added to a shared digital slide or Padlet wall titled “**Our Emotion Garden**”—a visual collective of adaptive art.

Adaptation for special needs students:

T or the assistant handles uploading. For students unable to sculpt digitally, a printed photo of a handmade clay shape can be photographed and added.

Teaching Materials:

- Free digital sculpting tool: [SculptGL](#)
- Emotion-choice chart (visual, tactile, or audio versions)

Emotion	Color	Symbol/Icon	Keyword
Joy	Yellow	😊	Happy
Calm	Blue	☐	Peaceful
Anger	Red	☐	Frustrated
Sadness	Navy	☐	Lonely
Surprise	Purple	⚡	Shocked
Fear	Gray	☐	Worried
Excitement	Orange	☐	Energetic
Love	Pink	♥	Caring
Confidence	Gold	☐	Brave
Curiosity	Teal	☐	Inquisitive

- Projector or screen to showcase 3D models
- Large open or seated space for movement
- Optional: play calm background music during sculpting

Duration:

50 minutes

Activity 5: Feel the Story – Sound & Texture Collage

Description:

In this sensory-rich activity, students create and share a short story or poem by combining environmental sounds, textured materials, and voice recordings. The goal is to encourage **non-visual artistic expression** by blending tactile and auditory elements. The final product is a "sound & feel collage" that tells a story without relying on images or text.

Instructions:

1. Sensory Starter – Explore Textures (10 minutes)

- T distributes a variety of textured materials (fabric, sandpaper, bubble wrap, cotton, foil, etc.). Students explore and describe how each texture might represent a feeling or place (e.g., cotton = clouds, foil = storm, sandpaper = desert).

Adaptation for special needs students:

T allows students to interact with textures using hands, elbows, or assistive tools. For students with sensory sensitivity, let them observe others or describe instead of touching directly.

2. Story Spark – Pick a Scene (5–7 minutes)

- Each student picks one environment (e.g., forest, beach, mountain, city, dream world). They imagine a short moment or a story that could happen there.

Adaptation for special needs students:

T offers scene choices through large printed cards, sound samples, or voice prompts. You can use communication boards if you need them.

3. Build the Sound & Texture Collage (15–20 minutes)

- Ss gather 2–3 textures and record matching sound effects using a **free soundboard app** (e.g., [Chrome Music Lab](#)). They then narrate or describe their scene with texture + sound + spoken word (or ambient sounds only).

Adaptation for special needs students:

For non-verbal students, use sound clips, assistive speech devices, or pre-recorded story fragments. Let students work in pairs to help record sounds or arrange materials.

4. Present the Sensory Story (10 minutes)

- Each student (or pair) presents their collage by playing the sounds and allowing others to feel the textures as the story is narrated or played. Focus is on shared experience, not performance.

Adaptation for special needs students:

For those unable to present, peers or teachers can assist. Stories can also be shared as stations that classmates rotate through quietly.

5. Reflect & Respond (5–7 minutes)

- Ss: Reflect using sentence starters:
 - *The texture that surprised me was...*
 - *The sound made me think of...*
 - *I felt ___ when I heard/felt...*

Adaptation for special needs students:

T provides emotion cards, sentence strips, or a yes/no format. Let students draw or use symbols to respond instead of writing.

Teaching Materials:

- A variety of textured materials (scrap fabric, paper, plastic, cotton, etc.)
- Basic recording devices (phones, tablets, laptops)
- Free sound tools: [Chrome Music Lab](#), [Noisli](#) ...
- Headphones or speakers
- Printed scene prompts:

- A quiet forest at sunrise
- A bustling city street
- A sandy beach with waves
- A snowy mountain peak
- A mysterious cave

- A sunny meadow with flowers
- A rainy day in the park
- A calm desert evening
- A stormy ocean
- A magical dream world

Duration:

60 minutes

Activity 6: My Inner Character – AI-Powered Identity Portraits

Description:

Students will design a character that represents their inner self—real or imagined—by using descriptive prompts to generate a visual portrait with a free AI art tool. The activity promotes creativity, identity exploration, and expressive freedom through accessible digital means. It accommodates students with diverse needs by offering multiple modes of expression and simplified tools.

Instructions:

1. Who Am I Inside? – Brainstorming Sheet (10–12 minutes)

- T hands out or projects a prompt sheet with questions like:
 - *If I were a color, I'd be...*
 - *If I were an animal, I'd be...*
 - *What do I dream of doing?*
 - *What makes me feel powerful?*
- Students reflect and write, draw, or verbally share ideas

Adaptation for special needs students:

T Use a visual choice board or symbols to support answers. Allow verbal responses, gestures, or AAC tools. Peers can assist with brainstorming.

2. Prompt Crafting – Describe Your Character (8–10 minutes)

- Ss turn answers into a simple descriptive sentence, e.g.,
 - *A colorful bird with musical wings, standing in a peaceful garden at sunrise.*

Adaptation for special needs students:

T offers sentence starters or fill-in-the-blank templates. Provide word banks with visuals (e.g., “calm,” “strong,” “magical”).

3. Generate the Character with AI (10–15 minutes)

- Ss use a free AI image generator such as:
 - [Craiyon](#)
 - [Bing Image Creator](#)
 - [Artbreeder](#)

Adaptation for special needs students:

Students can choose from pre-written prompts or ask a peer/teacher to type. Use voice input if available. For students with low vision, use screen readers and zoom tools.

4. Character Story Sharing (10 minutes)

- Ss present their character with a name and a short explanation. For example:
 - *This is Ray. She's quiet but strong. Her wings play music when she's happy.*

Adaptation for special needs students:

Students may point to visuals, play sound effects, or share via audio recordings. A peer can narrate on their behalf.

5. Digital or Printed Gallery (5–10 minutes)

- T displays all generated characters on a digital board ([Padlet](#), [Google Slides](#)) or prints and hangs them as a *Creative Identity Wall*.

Adaptation for special needs students:

T ensures high-contrast visuals for visibility. Use large print or tactile labels. Students can contribute by naming or decorating the gallery space.

Teaching Materials:

- Brainstorming worksheet or prompt cards
 - *If I were a color, I'd be...*
 - *If I were an animal, I'd be...*
 - *What do I dream of doing?*
 - *What makes me feel powerful?*
- Access to AI image tools ([Craiyon](#), [Bing Image Creator](#), or [Artbreeder](#))
- Tablets or computers
- Projector or printer for final display

Duration:

55 minutes

Activity 7: The Soundstage – Create a Collaborative Audio Theater Play

Description:

In this activity, students create and perform a short audio play without using visuals. They write or improvise a simple script and bring it to life using AI voice tools, sound effects, and background music. This adaptive format allows all students—including non-writers, non-speakers, and visually impaired learners—to contribute meaningfully to a shared performance.

Instructions:

1. Theme Selection – What Story Will We Tell? (5–7 minutes)

- T presents 3–4 theme cards (e.g., *Lost in Space*, *The Hidden Door*, *Under the Ocean*, *A Day in Reverse*). Students vote or pick one collaboratively.

Adaptation for special needs students:

T uses image-based theme cards, tactile objects, or audio recordings to introduce options. Use symbols or gestures for voting.

2. Build the Story Roles & Scenes (10–12 minutes)

- Ss: In groups of 4–5, students decide:
 - Who are the characters?
 - Where does the story begin and end?
 - What’s the main problem or surprise?
- They jot ideas or record them using Voice Memos.

Adaptation for special needs students:

T provides story templates, character cards, or icons. Use speech-to-text or have peers act as scribes.

3. Create the Audio Script (10–15 minutes)

- Ss: Groups write or dictate short dialogues and scene sounds (e.g., water splashing, robot voice, footsteps). AI voice tools can narrate or voice characters if needed.
- AI Tools to Use:
 - [ElevenLabs.io](https://elevenlabs.io)
 - [Voicemod Text to Song](https://voicemod.com/text-to-song)
 - [ChatGPT](https://chatgpt.com) for generating short scene dialogue if students are stuck

Adaptation for special needs students:

Students may select pre-recorded lines or audio clips. Use assistive tech to record sounds. For non-verbal students, assign creative sound roles (e.g., background noise maker).

4. Record the Audio Play (10–12 minutes)

- Each group records its play using a mobile recorder, online tool (like [Vocaroo](https://vocaroo.com)), or classroom tablet. They can use AI-generated voices or record their own.

Adaptation for special needs students:

T assigns tech support roles. For students with limited speech, AI voice options allow full participation. Provide quiet corners and headphones.

5. Listening Party & Reflection (10 minutes)

- T: Play each group's audio play. Classmates give simple feedback using prompts:
 - *I liked the sound of...*
 - *That character made me feel...*
 - *The story surprised me when... a*

Adaptation for special needs students:

T uses visual cue cards for emotions or responses. Allow non-verbal feedback (e.g., emoji cards, clapping, happy/sad face symbols).

Teaching Materials:

- Story theme cards (image-based)

Lost in Space	The Hidden Door	Under the Ocean
A Day in Reverse	A Message in a Bottle	The City That Never Sleeps
Through the Mirror	The Robot Who Learned to Laugh	A World Without Colors
The Clock That Froze Time	Trapped in a Board Game	The Elevator to Nowhere

- Tablets or mobile devices with a microphone
- Free AI voice tools: [ElevenLabs.io](https://elevenlabs.io), [Voicemod Text to Song](https://voicemod.net), [Vocaroo](https://vocaroo.com)
- Pre-made sound effects (optional: [ZapSplat](https://zapsplat.com))

Duration:

55 minutes

Activity 8: Echoes of Emotion – AI Poetry & Adaptive Illustration

Description:

In this activity, students use an AI tool to generate a short poem based on a feeling, mood, or word of their choice. They then create an **adaptive visual response**—through collage, abstract shapes, textures, or digital editing—to reflect how the poem made them feel. This encourages emotional exploration and creative interpretation beyond traditional writing or drawing.

Instructions:

1. Emotion Starter – What Do You Feel Today? (5–7 minutes)

- T uses a color/emotion board or word cloud to help students choose a **feeling** or **mood** (e.g., calm, excited, lonely, proud, confused, curious).

Adaptation for special needs students:

T provides visual/tactile emotion cards. Allow students to point, choose symbols, or use AAC tools to select emotions.

2. Generate a Poem with AI (10–12 minutes)

- Ss enter their emotion or feeling into an **AI poetry tool** like:
 - [Verse by Verse \(Google\)](#)
 - [ChatGPT](#) (prompt: *Write a short poem about feeling curious*)
 - [Poem Generator](#)
- The AI generates a short poem (4–6 lines) based on the input.

Adaptation for special needs students:

T provides pre-written emotion prompts for AI input. Use voice typing or support typing as needed. Read the poem aloud to support non-readers.

3. Visual Response – Interpret the Poem Creatively (15–20 minutes)

- Ss: Use digital or physical media to interpret the poem:
 - **Abstract art** with color blocks, patterns, or scribbles
 - **Collage** with photos, magazine cutouts, or digital stickers
 - **Digital art** using basic tools like Canva, Sketchpad, or Paint
- The goal is to express how the **poem made them feel** rather than illustrate it literally.

Adaptation for special needs students:

T offers pre-cut materials, templates, or accessible drawing apps. Allow use of symbols, textures, or objects to create tactile visuals.

4. Gallery Walk & Gentle Sharing (8–10 minutes)

- Ss place their visuals with the AI-generated poem (digitally or on paper) around the room. Classmates explore silently, leaving a positive sticky note or digital comment.

Adaptation for special needs students:

T provides options for feedback: emoji stickers, voice comments, or visual responses. Allow students to observe without pressure to explain.

5. Reflect Together (5 minutes)

- T asks:
 - Was it easier or harder to express a poem through art?
 - How did someone else's work make you feel?
 - What would you title your piece?

Teaching Materials:

- Devices with internet access (for AI poetry generation)
- Art supplies: markers, paper, glue, scissors, magazines
- Digital tools: [Canva](#)
- Sticky notes or digital commenting platform (e.g., [Padlet](#))

Duration:

55 minutes

Activity 9: Design Me – AI Avatars & Adaptive Fashion Showcase

Description:

Students design a digital avatar that represents themselves or a fictional character using AI-based avatar creators. Then, they style the avatar with clothing, colors, or cultural elements that express personality, feelings, or stories. This activity encourages creativity in design, personal reflection, and inclusive fashion thinking—making room for all body types, cultures, and expressions.

Instructions:

1. Who Would You Like to Be Today? (5–7 minutes)

- T asks:
 - If you could be anyone, wear anything, and live anywhere—what would you look like?
- Use prompt questions:
 - What’s your favorite color or pattern?
 - What do you want your clothes to say about you?
 - What culture or story inspires your look?

Adaptation for special needs students:

T uses visual prompt cards with clothing items, colors, flags, or symbols. Provide simplified or pictorial versions of the questions.

2. T Build Your AI Avatar (15–20 minutes)

- Ss use a free AI avatar maker to design a full-body or upper-body avatar
- Suggested tools:
 - [Ready Player Me](#)
 - [Zmoji](#)
 - [Character.AI](#)
- Students customize hair, face, clothes, body type, and accessories.

Adaptation for special needs students:

T provides clickable templates or pre-set avatars to modify. Allow students to work with a peer or assistant. Use speech-to-text or voice control if available.

3. Add a Story – Explain Your Look (10 minutes)

- Ss give their avatar a name and create a short backstory:
 - *This is Mira. She wears yellow and a headscarf with stars because she’s training to be a space explorer and wants to stay connected to her grandmother.*

Adaptation for special needs students:

T offers sentence starters or visual supports (e.g., *My name is ___. I wear ___ because ___.*)
Allow audio recordings or partner narration.

4. Adaptive Fashion Discussion (8 minutes)

- T asks:
 - *How can we make clothing more comfortable or expressive for everyone?*
 - *What if someone can’t use buttons or zippers—how might we design differently?*
- Discuss adaptive clothing ideas (e.g., Velcro fasteners, sensory-friendly fabrics, culturally respectful designs).

5. Virtual Fashion Gallery (5 minutes)

- T displays avatars and backstories on a digital board (e.g., [Padlet](#), [Google Slides](#), or [printed gallery](#)). Students can *like* or comment on each other’s designs.

Adaptation for special needs students:

T uses emoji voting, printed displays with tactile elements, or QR codes to audio-describe their work.

Teaching Materials:

- Devices with internet access
- AI Avatar tools ([Ready Player Me](#), [Zmoji](#), etc.)
- Worksheet or digital template for character backstory
- Optional: projector for gallery display

Duration:

50 minutes

Activity 10: Sound to Symbol – Mask Making with AI Music Emotion

Description:

In this activity, students listen to AI-generated or AI-analyzed music and reflect on how it makes them feel. They then create expressive **emotion masks** that represent their emotional reactions using colors, shapes, and textures. This combines **adaptive art-making** with music interpretation and supports both verbal and non-verbal learners.

Instructions:

1. What Does Music Feel Like? (5–7 minutes)

- T plays 2 short music clips (1–2 minutes each) generated with AI tools or from a preset library.
- Ask students:
 - How does this music make you feel?
 - If this feeling had a face, what would it look like?

Adaptation for special needs students:

T uses emotion cards with faces, providing symbols or tactile objects for *happy, calm, tense*, etc. Let students point, gesture, or use AAC tools to respond.

2. Generate or Analyze a Personalized Track (10 minutes)

- Each student chooses a mood/emotion and uses one of these tools to either:
- Generate music using [AIVA](#) or [MusicLM](#)
- Analyze music using [Mubert AI Emotion Tagging](#). (some free tracks available)
- They then listen and reflect on their emotional response.

Adaptation for special needs students:

T provides simplified track choices (e.g., “Calm,” “Energetic,” “Sad”). Play the track aloud or use headphones. Help select or explain tool use.

3. Create the Emotion Mask (20 minutes)

- Using paper masks or templates, Ss decorate their mask using colors, textures, and patterns that show how the music made them feel.
- Encourage creative expression—masks can be symmetrical, wild, abstract, or minimal.

Adaptation for special needs students:

T uses pre-cut shapes, tactile materials (felt, yarn, foil), and large templates. Allow digital mask design using apps like Canva or Adobe Express for students with motor limitations.

4. Optional: Sound + Mask Showcase (8 minutes)

- Ss present their mask and explain (verbally or non-verbally) how it connects to the music. If comfortable, play their AI-generated track in the background.

Adaptation for special needs students:

Ss can point to a feeling card, play a sound, or let a peer/teacher describe the mask.

5. Reflection & Group Conversation (5 minutes)

- T asks open questions:
 - Did any masks surprise you?
 - Can music change how you feel?
 - Was it easier to express feelings through music or the mask?

Teaching Materials:

- Access to AI music tools ([AIVA](#), [MusicLM](#), [Mubert](#), or alternatives)
- Emotion prompt cards or symbols
- Printable paper mask templates
- Art supplies: paints, textures, feathers, yarn, paper, glue
- Headphones or speakers
- Optional: digital design tools for accessibility (e.g., [Canva](#))

Duration:

55 minutes

Closure: My Creative Voice – Reflections from 10 Journeys

Description:

This final closure activity is a reflective and celebratory session where students revisit highlights from all 10 activities. They identify personal growth in creativity, communication, and emotional expression through adaptive and AI-supported methods. The session includes a collective gallery, peer appreciation, a personal reflection timeline, and a symbolic “Creative Voice Certificate” to honor each learner’s artistic journey.

Instructions:

- Begin with a short group discussion using a visual timeline or slide showing all 10 activities. Ask students to share which one they enjoyed the most and why.
- Distribute *My Creative Journey* reflection cards for students to complete individually or with support.
- Set up a classroom or digital gallery to showcase selected works from each student.
- Invite students to walk around and view each other’s creations.
- Facilitate a peer appreciation moment where each student gives one positive comment about another student’s work.
- Conclude with a certificate presentation, recognizing each student’s unique creative strengths:
 - Creative Visionary
 - Bold Designer
 - Expressive Storyteller ...
- End in a circle, asking each student to share one word that describes their experience in the Creative Arts Showcase.

Teaching Materials:

- Visual timeline or slide of the 10 activities
- *My Creative Journey* reflection cards

My Creative Journey

Reflecting on My Artistic Experiences

1. My favorite activity was:	
2. One AI tool I enjoyed using was:	
3. I learned I can express myself by:	
4. Next time, I want to try:	
5. A moment I'm proud of:	
6. A new skill I discovered:	

- Student-created materials from previous activities
- Sticky notes or appreciation message templates
- Creative Voice Certificate templates
- Projector or display space for the gallery

Duration:

30 minutes

MODULE 7

Personal Development Journey To support students in their personal development



Authors: Özkan Çam

Institution: ARAXA EGITIM DANISMANLIK,
Türkiye

1. Module Description

This module is designed to help students explore their personal growth through guided reflection, goal-setting, and character development. Using adaptive learning technologies and AI-driven prompts, students are encouraged to identify their values, strengths, and areas for improvement. The module supports students in developing self-awareness, emotional intelligence, and future-oriented thinking. By integrating self-reflection and practical exercises, it empowers all learners, especially those from diverse backgrounds or with special needs, to build confidence and take ownership of their learning and life paths.

2. Content and activities of the module

C: Adaptive self-reflection exercises, goal-setting activities, and character-building lessons

A: Journaling for self-discovery, goal-setting for personal growth

3. Module Objectives

- a. To foster students' self-awareness and ability to reflect on their experiences
- b. To support students in setting and pursuing personal goals that align with their strengths and values
- c. To promote the development of character traits such as resilience, empathy, and responsibility

4. Module Learning Outcomes

- a. Students will be able to reflect on their personal experiences using guided journaling tools
- b. Students will create and monitor personal development goals with the help of adaptive tools
- c. Students will demonstrate increased self-confidence and motivation for growth
- d. Students will apply character-building lessons to classroom, social, and real-life contexts

5. Key Words

Self-awareness, Personal Growth, Goal-Setting, Emotional Intelligence, Reflective Learning, Adaptive Learning, Resilience, Student Empowerment

6. Methodology

The module uses adaptive learning strategies powered by AI tools to personalize each student's development journey. The methodology combines reflective writing, visual mapping, interactive digital planners, and student-led activities. Teachers act as mentors, guiding students in their use of AI tools while promoting open discussion and feedback. The lessons are differentiated to accommodate varying literacy levels and emotional needs, ensuring accessibility and engagement for all students, including those with learning difficulties or special needs.

Adaptive Learning Scenario

Warm-up & Energizers: My Emoji Check-In

Description:

This warm-up activity helps students connect with their current emotions and mindset before diving into personal development work. By selecting or drawing emojis that reflect their mood, students practice self-awareness and emotional expression in a simple, inclusive way. The activity also supports adaptive learning by allowing students to reflect in the format they're most comfortable with—drawing, writing, or speaking.

Instructions:

- Ask each student to choose 1–2 [emojis](#) that best represent how they feel today.
- Give them 2 minutes to either:
 - Write one sentence explaining why they chose those emojis
 - Or draw their own version of an emoji that reflects their mood
- Invite volunteers to share with the group (optional, not mandatory).

If using an AI-enabled platform, students can enter their emoji choices into a chatbot or journaling tool that provides personalized affirmations or prompts based on their mood.

Teaching Materials:

- [Printed or digital emoji chart](#)
- A5 reflection cards or journals

Name: _____

Date: _____

Step 1: My Emoji of the Day

Draw or circle the emoji(s) that show how you feel today:



Step 2: Why did you choose this emoji?

Write 1–2 sentences to describe your current feeling.

● **Step 3: One word to describe my mood today:**

- Happy
- Tired
- Calm
- Worried
- Proud
- Other: _____

Optional Prompt – Complete the sentence:

Today, I want to feel more _____ by the end of the day.

- Markers or pens
- (Optional) AI journaling tool or adaptive chatbot interface

Duration:

15 minutes

The main part:

Activity 1: My Personal Growth Timeline

Description:

This activity helps students reflect on their past experiences, identify key moments in their development, and visualize their personal growth through a digital or physical timeline. Using AI-assisted journaling and timeline tools, students explore who they were, who they are now, and who they aspire to become. The activity supports all learners by offering multiple formats and differentiated instruction.

Instructions:

1. Introduction – Moments That Shaped Me (5 minutes)

- T introduces the idea that everyone’s personal growth is a journey, full of important moments.
- T gives examples: learning something new, facing a challenge, achieving a goal.
- T asks students to think of 3 moments that helped them grow.

Adaptation for special needs students:

T gives printed visuals of sample events (e.g., "First day of school", "Learned how to swim") to spark ideas.

2. Reflection – AI Journaling Prompts (10 minutes)

- Ss use an AI journaling assistant (e.g., [ChatGPT](#), [Reflectly](#), or [Wysa](#)) to reflect on the following prompts:
 - Describe a time you were proud of yourself.
 - What challenge helped you grow?
 - What would you tell your younger self?
- Students type or dictate answers depending on their preference.

Adaptation for special needs students:

T reads prompts aloud and provides support with sentence starters or voice-to-text tools.

3. Creation – Personal Growth Timeline (15 minutes)

- Based on the journal entries, students create a 3-point timeline
 - Past – Present – Future
- They can use a digital tool like [Canva](#), [Prezi](#), or [Padlet](#), or draw it on paper.
- Each point includes a short sentence and an image or symbol.

Adaptation for special needs students:

T provides printable templates and icons/pictures to paste. Students may work with peers or assistants.

4. AI Companion – Visualizing My Future (10 minutes)

- Ss type a sentence like *In the future, I want to be more confident* into an AI visual or quote generator (e.g., [InspiroBot](#), [Canva Magic Design](#), or [DALL·E](#)).
- The AI provides a motivational image or quote that students add to the “Future” part of their timeline.

Adaptation for special needs students:

T prepares a few AI-generated visuals in advance for selection. Students can choose by pointing or describing.

5. Reflection Circle – One Step Forward (10 minutes)

- In small groups, Ss share one part of their timeline.
- They reflect on one step they want to take this week for personal growth.

Adaptation for special needs students:

T facilitates or models sentence frames like:

- *I want to work on ___ because ___.*

Ss can draw or use symbols instead of speaking if needed.

Teaching Materials:

- AI journaling tool ([Reflectly](#), or [Wysa](#))
- Timeline templates (paper or [Canva/Padlet](#))
- Computers, tablets, or printed materials
- Pre-generated AI visuals or quotes (for accessibility)
- Support visuals or icons for non-verbal students

Duration:

50 minutes

Activity 2: What Would I Do? – Exploring Personal Values Through AI Scenarios

Description:

In this activity, students explore their personal values by engaging with AI-generated ethical dilemmas. They are presented with simulated everyday situations (e.g., telling the truth, helping someone, dealing with peer pressure) and use AI-supported decision-making tools to consider different responses. This allows them to understand what matters most to them and how their values shape their actions. The activity is fully inclusive, with alternative formats and simplified scenario options.

Instructions:

1. Introduction – What Are Values? (10 minutes)

- T begins with a short discussion on what “values” are
 - e.g., *honesty, kindness, fairness*
- Shows a few relatable examples
 - e.g., *Telling the truth even when it’s hard.*
- Asks students to share one value that matters to them.

Adaptation for special needs students:

T uses visuals or cards representing values (e.g., heart for kindness, scale for fairness).

Ss point or choose pictures instead of speaking.

2. Scenario Exploration – “AI Decision Path” (10 minutes)

- Ss access a simple AI-powered ethical scenario generator (e.g., [Kialo Edu](#), [Conundrum.ai](#), or [ChatGPT](#) with prepared prompts).
- Each student gets a short scenario
 - e.g., *Your friend is being unfair to someone else. What do you do?*
- The AI suggests 2–3 possible responses and follows up with questions to guide reflection.

Adaptation for special needs students:

T T provides printed or audio versions of the scenario with visual cues.

Ss respond by choosing symbols or giving short verbal answers with support.

3. Group Work – Which Choice Reflects Me? (10 minutes)

- In pairs or small groups, Ss discuss the different options they saw.
- Each student shares which option they felt best reflected their values and why.

Adaptation for special needs students:

T provides sentence starters:

- I chose ___ because ___.

Ss may respond using communication cards or drawing instead of speaking.

4. Creative Response – My Value Poster (15 minutes)

- Ss choose one value that stood out to them (e.g., loyalty, courage).
- Using a digital design tool (e.g., [Canva](#)) or paper, they create a small **poster** with:
 - A word or phrase
 - A short sentence
 - An image (created or AI-generated with [DALL·E](#), [Canva AI](#), etc.)

Adaptation for special needs students:

T prepares pre-printed templates with space for sticking pictures or writing a few words with help.

5. Reflection – How I Use This Value (10 minutes)

- Ss complete a short prompt, either verbally, on paper, or using AI tools:
 - *One way I can show this value in school is...*
 - *When I use this value, I feel...*

Adaptation for special needs students:

T provides simplified language options and allows use of audio response tools or drawing.

Teaching Materials:

- AI ethical scenario tool ([Kialo Edu](#), [ChatGPT prompts](#), [Conundrum.ai](#))
- Projector or tablets
- Value cards or visuals for group support
- Canva or drawing materials
- Templates for posters
- Sentence starters or communication aids

Duration:

55 minutes

Activity 3: Power Cards – Discovering My Strengths

Description:

This activity helps students recognize their strengths and appreciate the strengths of others. Using AI tools and peer feedback, students identify qualities they possess (e.g., creativity, patience, leadership) and create “Power Cards” that showcase them. The activity promotes self-esteem, empathy, and a supportive classroom environment. AI tools support the discovery process by generating personalized suggestions based on student inputs.

Instructions:

1. Introduction – What Are Strengths? (10 minutes)

- T explains what personal strengths are and gives examples
 - e.g., *I’m good at helping others,*
 - *I stay calm in difficult situations.*
- Shows a list or poster of 15–20 strengths with images/icons.

My Strengths

Discover Your Strengths!

Choose the ones that sound like you.

	Kindness	I care about others and try to be nice.
	Creativity	I enjoy making new things and thinking differently.
	Teamwork	I work well with others and like helping in groups.
	Courage	I try new things even when they’re hard or scary.
	Patience	I can wait calmly and don’t get upset easily.
	Honesty	I tell the truth and try to do what’s right.
	Empathy	I understand how others feel and care about their feelings.
	Leadership	I can help lead others or take charge when needed.
	Responsibility	I get things done and take care of my tasks.
	Optimism	I try to see the good in situations and stay positive.
	Focus	I make people laugh or smile.

- T asks: *What is something you’re proud of about yourself?*

Adaptation for special needs students:

T uses strength visuals (cards with symbols or photos) and allows students to point or choose. Support staff can assist with communication if needed.

2. AI Support – What Are My Strengths? (10 minutes)

- Ss input short descriptions of things they enjoy or are good at into an AI strength-finder tool (e.g., a custom [ChatGPT prompt](#), or [Google Form](#) with adaptive feedback).
 - e.g., *I like helping others and working in groups.*
- AI suggests strengths like “Teamwork” or “Empathy” and explains them in simple language.

Adaptation for special needs students:

T provides guided prompts or reads aloud options. Students may speak their answers using voice tools. AI responses can be read aloud by a screen reader or teacher.

3. Creative Work – My Power Card (15 minutes)

- Each student chooses one strength and creates a Power Card that includes:
 - their strength name
 - a symbol or picture (drawn or AI-generated using [Canva AI](#) or [DALL·E](#))
 - the sentence: *I show this strength when I...*
- Cards can be physical (paper) or digital (using [Canva](#), PowerPoint).

Adaptation for special needs students:

T provides pre-made card templates with visual options. Students may dictate their sentence or use stickers/symbols.

4. Sharing – Gallery of Strengths (10 minutes)

- Ss post their Power Cards on the wall or a shared digital board (e.g., [Padlet](#)).
- Each student visits 2–3 classmates' cards and leaves a positive sticky note or comment.

Adaptation for special needs students:

T guides students to visit and comment using simple stickers, stamps, or prepared “I like this because...” sentence starters.

5. Reflection – I See Strength In You (10 minutes)

- In pairs, students tell each other one strength they see in their partner.
- They complete the sentence:
 - *I think you are ___ because ___.*

Adaptation for special needs students:

T provides printed sentence frames and emotion icons to help with expression. Students may whisper, write, or use assistive communication tools.

Teaching Materials:

- Printable or digital list of strengths with visuals
- Tablets or laptops for AI tool access
- [Canva](#), [DALL·E](#), or similar tools for visual creation
- Power Card templates (paper or digital)
- Sticky notes, comment cards, or digital comment boards ([Padlet](#))
- Pre-written sentence starters for support

Duration:

55 minutes

Activity 4: Vision Boards 2.0 – My AI-Powered Goals

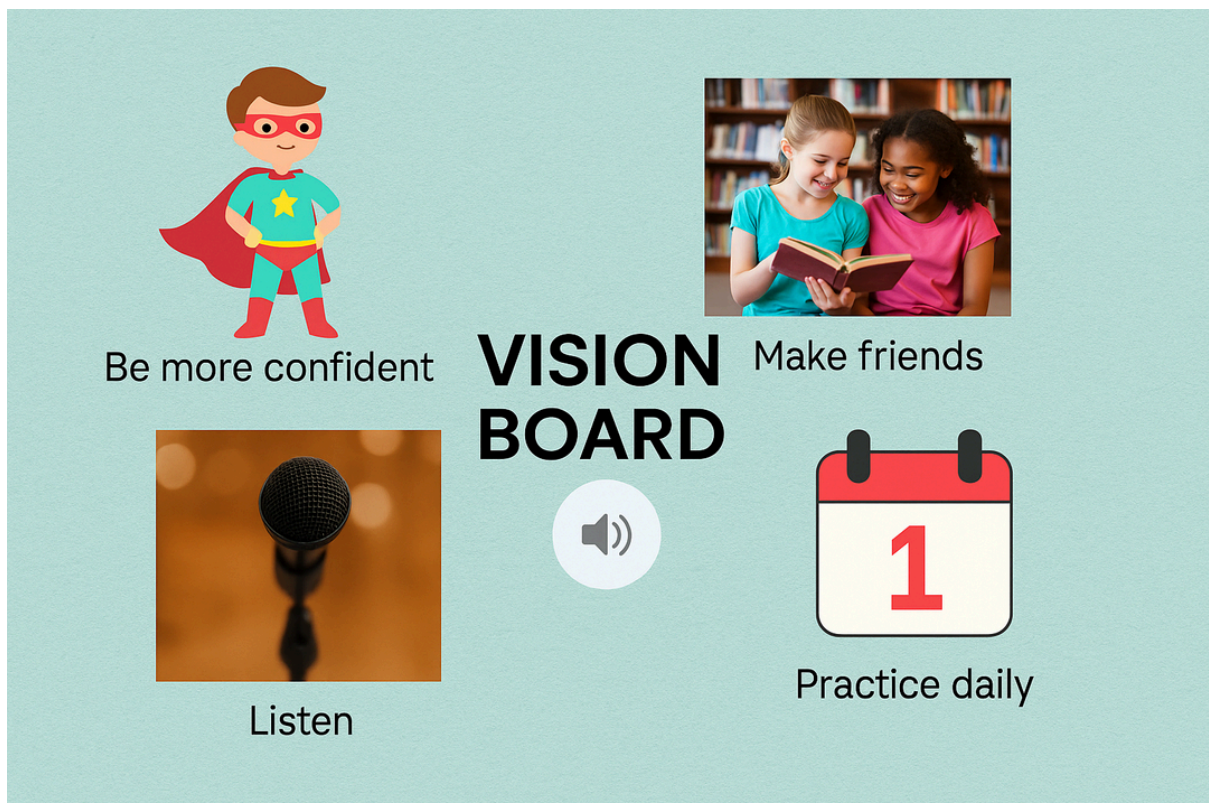
Description:

This activity helps students create digital vision boards that express their personal growth goals, combining visuals, keywords, and self-recorded voice messages. They use free AI tools to design and articulate their hopes for the future. This boosts motivation, planning skills, and self-expression. The use of multiple media formats (visual, audio, text) ensures inclusive participation for diverse learners, including those with special needs.

Instructions:

1. Introduction – What is a Vision Board? (10 minutes)

- T explains that a vision board is a collection of images, words, and ideas that represent what you want to achieve or become.



- Next, T shows a sample using [Canva](#) or a printed version.
- Finally, T introduces the idea of combining AI tools to create a personalized digital vision board.

Adaptation for special needs students:

T shows both visual and physical examples. For students with processing difficulties, use simplified language and printed samples with icons

- e.g.,  = learn more,  = make friends

2. Brainstorming – Goals That Matter to Me (10 minutes)

- Ss respond to a few goal-setting prompts using [ChatGPT \(free version\)](#) or a teacher-created [Google Form with adaptive prompts](#), such as:
 - *What is something you want to improve about yourself?*
 - *What makes you feel strong and proud?*
- AI suggests simple goal ideas in friendly, student-level language.

Adaptation for special needs students:

T provides verbal support or assistive technology. Students may dictate their ideas instead of typing, using voice-to-text tools or drawing their ideas first.

3. Design – Create My Vision Board (15 minutes)

- Ss open [Canva Free](#) (no login needed in education mode) or use [Google Slides](#) with pre-made templates.
- They search for or upload 3–5 images that reflect their goals and add short labels or keywords.
 - e.g., *Be more confident* with a picture of a superhero or a microphone.

Adaptation for special needs students:

T provides a simplified version of the template with fewer sections and large visuals. Students may work with a peer or assistant and use image banks with fewer choices to reduce overload.

4. Voice Integration – Record My Goal Message (10 minutes)

- Using [Vocaroo](#) (a free voice recording tool, no login), each student records a short voice message:
 - *Hi, I'm [Name]. One of my goals is to...*
- The message is saved as a link and added to their vision board via hyperlink or QR code.

Adaptation for special needs students:

T can assist with recording, or students may choose from a set of pre-written messages to read or play back. For non-verbal students, symbolic audio clips or visuals can be substituted.

5. Sharing – Gallery Walk & Voice Wall (10 minutes)

- Ss share their boards in a classroom gallery (on screen, printed, or on the wall with QR codes to their audio).
- Classmates walk around, view, and leave one compliment using sticky notes or a Google Form.

Adaptation for special needs students:

T T facilitates viewing in small, quiet groups. Provide sentence starters:

- *I like your goal about ___.*

Compliment cards can consist of emojis or picture symbols.

Teaching Materials:

- Devices (tablets/laptops)
- Internet access
- Free AI Tools, like [ChatGPT](#), [Canva Free](#), [Vocaroo](#)
- Sticky notes or digital feedback form (Google Form)

Duration:

55 minutes

Activity 5: My Inner Hero – AI Storytelling for Self-Expression

Description:

In this activity, students create a short fictional story where they are the main character—a hero facing a personal challenge or growth moment. With the help of free AI storytelling tools, they build a narrative that reflects their inner strengths, values, and goals. The story becomes a safe and creative space to process emotions and boost self-awareness.

Instructions:

1. Introduction – We All Have a Hero Inside (10 minutes)

- T starts by asking:
 - *What does it mean to be a hero?*
- A brief discussion:
 - Heroes are not just in movies—they're also people who keep trying, help others, or overcome fears.
- T presents a simple example: *a shy student who becomes brave by speaking up in class.*
- Explains that students will write a short story with themselves as the hero.

Adaptation for special needs students:

T provides illustrated mini-books or comic panels as examples. Use visual aids like capes, stars, or feeling icons to help explain abstract ideas.

2. Idea Generation – AI Sparks My Story (10 minutes)

- Ss open [Storywizard.ai](https://www.storywizard.ai) (free AI text continuation tools) or [Sassbook AI Story](https://www.sassbook.com).
- They write a sentence starter like:
 - *There was once a student who was afraid to try new things...*
 - *I woke up and discovered I had a new power: the power of ___.*
- The AI continues its story, giving them a fun starting draft.

Adaptation for special needs students:

T offers sentence starters on paper or aloud. Students can dictate ideas, choose images first, or select from pre-written sentence options to use in the AI.

3. Story Shaping – My Hero's Journey (15 minutes)

- Ss use the AI text and edit it to reflect themselves more accurately.
- Add a beginning (the problem), a middle (what the hero does), and an end (what they learned).
- They can write or type the final version.

Adaptation for special needs students:

T offers story-building templates (with visual cues for beginning/middle/end). Use symbol-supported writing or drawing instead of full text.

4. Voice It – Tell Your Story Out Loud (10 minutes)

- Ss use [Vocaroo](#) to record their story.
- Optionally, they can upload it to a shared classroom folder or print a QR code to paste on their notebooks.

Adaptation for special needs students:

T helps with recording. For non-verbal students, use audio clips with sound effects or symbolic background narration. Students can also listen instead of speaking.

5. Story Circle – Celebrate Your Inner Hero (10 minutes)

- In small groups, Ss take turns playing their recordings or reading a part of their story.
- Peers give positive feedback:
 - *I liked when you...*
 - *Your hero was brave because...*

Adaptation for special needs students:

T prepares sentence starters for compliments. Use emojis or colored cards for non-verbal feedback (e.g., 👍 = great story, ✨ = inspiring, 💬 = I relate to this).

Teaching Materials:

- Devices with internet access
- Free AI story tools: [StoryWizard AI](#), [Sassbook AI Story Writer](#), [Vocaroo](#)
- Headphones, microphones (optional)

Duration:

55 minutes

Activity 6: My Mood Tracker – Understanding My Emotional Patterns

Description:

This activity supports students in recognizing and understanding their emotions using a daily AI-assisted mood tracker. Through visual reflections and guided questions, students explore emotional triggers and patterns. The aim is to promote emotional literacy, self-regulation, and a deeper connection to their personal development journey.

Instructions:

1. What Are Emotions Telling Us? (10 minutes)

- T introduces basic emotions using [a visual emotion wheel](#) (happy, sad, angry, calm, anxious, proud, etc.).
- Discusses how emotions help us understand ourselves, situations, and others.
 - *Have you ever been upset and not known why?*
 - *How do you usually feel on Mondays?*

Adaptation for special needs students:

T uses emotion icons or real-life emotion photo cards. T reads aloud and gives examples from daily school life.

2. Track My Mood with AI (10 minutes)

- Ss use [DailyBot AI Mood Tracker](#).
- They input how they feel and why. The AI provides reflective questions like:
 - What made you feel this way?
 - What would help you feel better?
- Students do this privately and receive instant feedback.

Adaptation for special needs students:

T assists in using the interface. Students can select from printed emotion cards or use emojis on a paper tracker. Alternative: students draw their mood.

3. Patterns in My Feelings (10 minutes)

- Ss look at their mood entries across a few days (if using app) or imagine how their moods might change during the week.
- They complete a mood reflection worksheet:
 - *I feel best when...*
 - *I feel upset when...*
 - *One thing that helps me feel better is...*

Adaptation for special needs students:

T uses simplified sentence stems or yes/no checklists. Ss can draw instead of writing or pointing to visuals.

4. Design My Coping Toolbox (15 minutes)

- Based on mood reflection, Ss create *My Coping Toolbox* – a list or visual collage of things they can do when they feel overwhelmed, sad, or angry. For example,
 - *Take deep breaths,*
 - *Talk to a friend*
 - *Listen to music*
 - *Use a fidget toy...*
- They can use [Canva](#) to create a poster or draw it on paper.

Adaptation for special needs students:

T provides printed icons of coping strategies. Students choose and glue/tape their “tools” into a visual box template.

5. Regulation Routine Practice (10 minutes)

- T guides the class through a short regulation routine: breathing exercise, stretching, or mindful coloring.
- Ss choose one technique to try next time they feel a strong emotion.

Adaptation for special needs students:

T models each technique with physical prompts or sensory supports (e.g., calming visuals, breathing balls, music). Students follow along with support.

Teaching Materials:

- Devices or tablets
- AI Tools:
 - [DailyBot Mood Tracker](#)
- [Visual emotion wheel](#)
- Coping toolbox templates (digital or paper)
- [Canva](#)

Duration:

55 minutes

Activity 7: Future Me Meme Lab – Laugh, Create, Reflect!

Description:

This light-hearted activity invites students to create funny, AI-enhanced memes or comic strips about their “future selves.” By imagining humorous but meaningful scenarios (e.g., Future me trying to wake up early), students explore personal goals, habits, and values while building digital skills, working collaboratively, and expressing themselves in a playful way.

Instructions:

1. What Is a Meme (5 minutes)

- T shows a few clean, [school-appropriate memes](#) (about school life, motivation, etc.).
- T explains how memes use images + short text to express a feeling, joke, or idea.
 - *Have you ever seen a meme that described your life perfectly?*

Adaptation for special needs students:

T T uses visual examples only, no complex humor. *This is funny because...*

2. AI Predicts My Future Me (10 minutes)

- Ss open [MagicStudio](#) or use [Canva Free’s AI Avatar Generator](#).
- They upload a selfie or pick a character and let the AI create a *Future Me* photo/avatar.
- Prompt ideas:
 - Me as a successful pizza chef,
 - Me trying to be a morning person

Adaptation for special needs students:

T assists with image selection. Students who do not want to use a photo may choose from preset avatars or draw their *Future Me*.

3. Create the Meme! (15 minutes)

- Ss insert their AI image/avatar into [Canva Free](#) or [Imgflip Meme Generator](#).
- They write a short, funny caption
 - e.g., *When Future Me realizes coffee isn’t dinner.*
- The meme should reflect a goal, habit, or trait they want to develop—or laugh at.

Adaptation for special needs students:

T provides sentence starters and visual supports. Students can use ready-made funny phrases or collaborate with a partner.

4. Present & Vote – Meme Wall! (10 minutes)

- Ss present their memes in a gallery format (projector, printed, or on Padlet).
- Everyone votes on categories like:
 - Most Creative
 - Funniest
 - Most Like Me
 - Most Inspiring

Adaptation for special needs students:

T supports presentations. Students may use emoji stickers for voting or clap/tap for their favorite meme.

5. Reflection – What Did We Learn? (10 minutes)

- T guides a short class reflection:
 - What made these memes funny?
 - Did anything about your future self surprise you?
 - Can humor help us talk about serious things?
- Ss write 1 sentence:
 - One thing I want *Future Me* to be is...

Adaptation for special needs students:

T gives pre-filled cards: *Future Me will be...* with pictures. Students complete it by drawing or pointing.

Teaching Materials:

- Internet-connected devices
- Free AI tools:
 - [MagicStudio AI Headshot Generator](#)
 - [Canva Free](#)
 - [Imgflip Meme Generator](#)
 - Printable meme templates
 - Emoji stickers or voting tokens

Duration:

50 - 55 minutes

Activity 8: The Secret Strength Mystery – Decode, Discuss, Discover

Description:

In this fun and interactive challenge, students work in teams to solve a mystery that can only be cracked by identifying emotional clues, understanding social dynamics, and applying their personal strengths. AI-generated characters and situations guide the activity, and students must collaborate to uncover “Who helped the class succeed?” The activity promotes critical thinking, empathy, teamwork, and personal growth awareness—all in a mystery game format!


Instructions:

1. Here’s a Mystery in Our Class! (5 minutes)

- T tells students:
 - *Someone in our fictional class helped solve a big problem yesterday... but we don’t know who it was. You will work in teams to figure out who the secret strength hero is.*
- T introduces the mystery game objective:
 - Teams will receive clues about different students (AI-generated profiles), and they must work together to figure out which showed the most helpful personal strength


1. Lina

 **Strength:** Empathy & Humor

 **Clue:** Lina noticed that one of her classmates was sitting alone during group work. She quietly joined them, told a silly joke, and made them laugh. After that, the student felt ready to join the rest of the group.


2. Tariq

 **Strength:** Calm Problem-Solving

 **Clue:** When the group couldn’t agree on an answer and everyone was getting frustrated, Tariq took a deep breath and said, “Let’s each share one idea calmly.” His voice helped everyone slow down and work together.


3. Sofia

 **Strength:** Responsibility & Leadership

 **Clue:** Sofia arrived early and noticed the chairs were still messy from the previous class. Without being asked, she arranged everything, made sure each team had their materials, and helped her group stay organized.

4. Amir

 **Strength:** Creativity & Support

 **Clue:** When the group got stuck, Amir drew a picture to explain the idea in a different way. His drawing helped others understand the problem. He also encouraged a classmate who was shy to share their opinion.

Adaptation for special needs students:

T introduces characters using visual cards. Each character includes an icon or symbol for accessibility (e.g., star = leadership, heart = kindness).

2. Meet the Characters (10 minutes)

- Each group receives 4–5 short character descriptions generated with [ChatGPT](#) ahead of time. Each “student” has a unique personality and strength (e.g., one is shy but observant, another is funny but easily distracted).
 - e.g., Lina noticed someone was sad and made them laugh
 - Tariq solved the group puzzle calmly when others were stressed.

Adaptation for special needs students:

T reads descriptions aloud or provides pictorial versions. Characters can be printed on colored cards with large icons or keywords.

3. Solve the Mystery (15 minutes)

- Teams read the clues and discuss which character showed the personal strength that made the biggest positive impact.
- They must justify their decision by naming the strength
 - e.g., *Lina used empathy and humor to help*
- and explaining how it helped the group.

Adaptation for special needs students:

T facilitates group discussion. Students may use sentence strips:

- *I think it's ___ because ___.*

Non-verbal students can vote with cards or icons.

4. “Debrief & Strength Reveal” (10 minutes)

- Each group presents their chosen “hero” and the reasoning behind it.
- T reveals that *all* characters were helpful in their own way and there’s no one correct answer—just different ways of showing personal development.
- Discussion:
 - What strengths do you use in real life?
 - Which character reminds you of yourself?

Adaptation for special needs students:

T allows choice boards or emotion cards for expression. Use thumbs up/down for agreement and group celebration.

5. Create Your Own Character Card (15 minutes)

- Each student designs a character card of themselves as *a secret strength hero*, including:
 - Their name
 - A strength (e.g., helpful, creative, calm)
 - A situation where they used it
 - A symbol or drawing

Adaptation for special needs students:

T provides pre-filled templates. Students select from images or draw their card. They can write, type, or record audio if needed.

Teaching Materials:

- AI-generated student characters
- Printable templates for “Your Strength Hero” cards
- Visual icons for strengths (e.g., 🦵 = brave, 🤝 = teamwork, 💡 = creative)
- Sentence starters and reflection strips
- Timer or bell for gamified pacing

Duration:

55 minutes

Activity 9: Gratitude Wall – Uplift with AI Compliment Cards

Description:

In this activity, students focus on recognizing positive qualities in themselves and others. With the help of AI complement generators, students create personalized, uplifting cards for classmates. These are then added to a classroom Gratitude Wall, helping build a supportive, kind, and emotionally safe environment.

The activity fosters self-esteem, peer connection, emotional intelligence, and a sense of belonging – all in a fun, colorful way.

Instructions:

1. Let's Talk About Appreciation (10 minutes)

- T starts with a short discussion:
 - How do you feel when someone notices something good about you?
 - Why is it important to appreciate others?
- T shows examples of compliments beyond looks:
 - *I admire how you always help others.*
 - *You stayed calm when the group was confused – that was cool.*

Adaptation for special needs students:

T uses visuals: thumbs up 👍, heart ❤️, star ⭐.

T provides complementary sentence strips or picture-based cues for students with limited literacy.

2. AI Writes a Compliment for Me (10 minutes)

- Ss go to free [ChatGPT](#), and input a prompt like:
 - Write a kind and simple compliment for someone who is a good listener.
 - Write a funny compliment for a creative student.
- Students pick one AI-generated compliment and adapt or rewrite it for a classmate.
- If tech is limited, T can pre-generate compliments from ChatGPT and give a mix for students to choose from.

Adaptation for special needs students:

T provides printed compliments or allows AI use with adult support. Ss can choose a card, draw a symbol, or give a thumbs-up sticker instead of writing.

3. Create a Compliment Card (15 minutes)

- Using paper or [Canva Free](#), students write their compliment onto a card.
- They decorate it with emojis, colors, or symbols. Each card must include:
 - The classmate's name
 - One compliment or appreciation sentence
 - A symbol or doodle

Adaptation for special needs students:

T gives a template with name boxes and pre-written sentence starters. Ss can draw, use stickers, or dictate their message.

4. Gratitude Wall Setup (10 minutes)

- Ss place their finished compliment cards on the classroom wall, bulletin board, or virtual board (e.g., Padlet).
- Optionally, the T reads 3–4 cards aloud anonymously each day throughout the week.

Adaptation for special needs students:

T helps attach cards. Students can choose where to place theirs or point to where they want it hung.

5. Reflecting on Kindness (10 minutes)

- Individually or in pairs, Ss write or discuss:
 - How did it feel to give a compliment?
 - What is something kind someone said to you that made your day better?

Adaptation for special needs students:

T provides reflection cards with sentence starters or yes/no choices (e.g., “Did you feel happy?”). Students may draw or use visuals instead of writing.

Teaching Materials:

- Devices with internet access
- Free AI Tool: [ChatGPT Free](#)
- Printed or digital compliment templates
- Markers, stickers, art supplies
- Large space on the wall or board

Duration:

55 minutes

Activity 10: My Personal Growth Showcase – This Is Me Now

Description:

This final activity invites students to create and present a *Personal Growth Portfolio*, combining highlights from all activities in Module 7. Using creative formats (videos, posters, slides, or AI-generated visuals), students reflect on their development and express who they are now. The showcase ends with a peer celebration and certificates of completion. The activity helps solidify learning, build confidence, and acknowledge each student’s unique journey.

Instructions:

1. Let’s Look Back (10 minutes)

- T reviews all 9 previous activities using visuals or a slideshow, asking Ss guiding questions:
 - What was your favorite activity?
 - What did you learn about yourself?
 - What strengths do you use more often now?

Adaptation for special needs students:

T uses a timeline visual with icons from each activity. Students use thumbs up/down, point to visuals, or use communication cards to respond.

2. Build Your Personal Growth Portfolio (20 minutes)

- Ss select 3–5 things to include in their portfolio. Choices can include:
 - Their *Power Card* (from Activity 3)
 - AI-generated *Future Me* meme (Activity 7)
 - *Gratitude card* (Activity 9)
 - A favorite journal entry or strength
 - A voice reflection (recorded on Vocaroo)
- Students can create their portfolio as:
 - A mini-poster
 - A short video (e.g., [Canva](#) or [Clipchamp](#))
 - A digital slide
 - Or a physical booklet

Adaptation for special needs students:

T provides portfolio templates. Ss may select and paste visuals, dictate reflections, or record a short voice message with support.

3. My Voice: Record or Write a Final Message (10 minutes)

- Students write or record a message answering:
 - One thing I'm proud of about myself is...
 - One thing I want to keep working on is...
- Students use [Vocaroo](#) or write on the last page of their portfolio.

Adaptation for special needs students:

T offers visuals, sentence starters, or symbols. Ss can draw, speak, or use icons to share their thoughts.

4. Showcase & Celebrate (10 minutes)

- Ss present their portfolios to small groups or the whole class.
- Classmates give one positive comment per presentation (T can guide).
- T distributes the *Creative Voice Certificate* or the *Personal Growth Badge* to each student.

Adaptation for special needs students:

T helps students present with support. Peers can offer compliments using cards or emojis. All students are celebrated equally.

5. Our Class Collage (5 minutes)

- Each student contributes one word or image that represents their journey to a shared collage (physical or digital).
- This becomes a visual summary of the group's growth as a whole.

Adaptation for special needs students:

T prepares word/picture cards to choose from. Ss point, paste, or draw to participate.

Teaching Materials:

- Devices or paper for portfolios
- [Vocaroo](#) for recordings
- [Canva](#), [Google Slides](#), or [Clipchamp](#) for digital formats
- Portfolio templates (poster/booklet/slides)
- Materials for class collage (paper, scissors, visuals)

Duration:

55 minutes

Closure: My Creative Voice – Reflections from 10 Journeys

Description:

This final closure activity is a reflective and celebratory session where students revisit highlights from all 10 activities. They identify personal growth in creativity, communication, and emotional expression through adaptive and AI-supported methods. The session includes a collective gallery, peer appreciation, a personal reflection timeline, and a symbolic *Creative Voice Certificate* to honor each learner's journey.

Instructions:

1. Welcome & Circle Reflection (10 minutes)

- T invites students to sit or stand in a circle.
- Each student shares one thing they learned about themselves during the module.
- Option: Use a soft ball or a talking object to take turns.

2. Gallery Walk of Growth (15 minutes)

- T displays key outputs from each activity (Power Cards, Meme Boards, Hero Stories, Vision Boards, etc.) around the room or digitally via Padlet or slides.
- Ss walk around, leave sticky notes or emoji stickers with compliments or questions.

3. My Journey Timeline (15 minutes)

- Students complete a blank timeline template showing:
 - One moment, they felt proud
 - One thing they found difficult
 - One thing they want to keep doing
 - A sentence to their future self
- This can be drawn, written, or created using Canva or Google Slides.

Certificate Ceremony & Celebration (10 minutes)

- Each student receives a *Creative Voice Certificate* or badge for completing the module.
- Optional: Add a student-chosen title (e.g., *Empathy Explorer*, *The Calm Thinker*, *Visionary Voice*).

Final Mood Check & Group Photo (5 minutes)

- Ss do a quick emotion check using mood cards or emojis:
 - *How do you feel finishing this journey?*
- Group photo/selfie with certificates (optional).

Teaching Materials:

- Printed or digital reflection timeline template

Reflection Timeline Template – My Personal Development Journey

My Personal Development Journey

Name: _____

Date: _____

1. One moment, I felt proud:
2. One thing I found difficult:
3. One strength I discovered about myself:
4. Something I want to keep doing:
5. A message to my future self:

"Dear Future Me,

Love, Me."

- Student work samples from previous activities
- Sticky notes or emoji stickers
- [Creative Voice Certificate](#)
- Optional: music, balloons, digital slideshow, class camera

Duration:

55 minutes