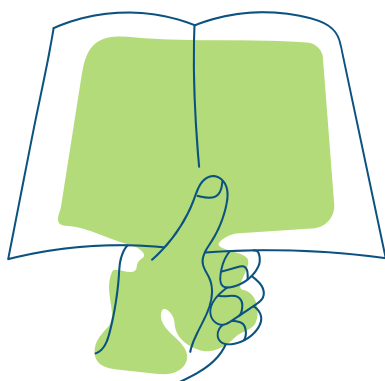
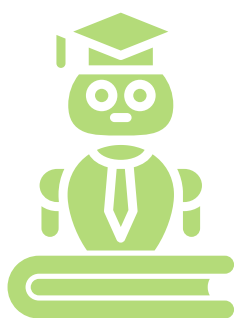




AI-EMPOWERED GREEN SKILLS EDUCATION



TEACHER'S HANDBOOK



About

This handbook is designed to support high school teachers to bringing green skills into their classroom with the help of AI. This handbook is a part of a KA220 SCH project titled “**EcoAI EduNetwork Initiative (EAIEN)**” and is a supplementary for an online course title “**AI-Empowered Green Skills Education**”. It offers a comprehensive overview of the course modules, objectives, and activities, while providing practical guidance for integrating green skills and artificial intelligence (AI) into teaching practice.

Structured around four key modules, the course explores the global relevance of green skills, introduces the fundamentals of AI, demonstrates how to create open educational resources with AI tools, and empowers teachers to design student-centered, sustainability-focused projects. Each section of this handbook aligns with the course content and includes summaries, key concepts, and reflection prompts to help teachers translate what they learn into meaningful classroom applications.

Whether used during or after the course, this handbook is a practical resource to inspire and guide educators in shaping future-ready learners.



**Funded by
the European Union**



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PART 1



INTRODUCTION TO GREEN SKILLS



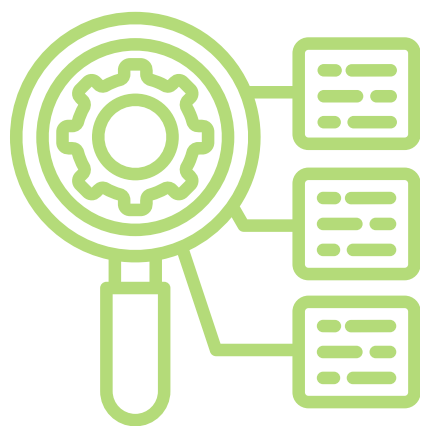
What are Green Skills?

Green skills are the knowledge, abilities, and attitudes we need to live and work sustainably. They help us protect the environment, use resources wisely, and adapt to a changing world.

Green skills are essential across a wide range of sectors, including energy, agriculture, construction, transportation, and education. These skills encompass practices such as **conserving energy, minimizing waste, and designing environmentally sustainable products**. However, green skills are not limited to technical competencies alone. They also involve **critical thinking, creativity, problem-solving, and collaboration, all of which are crucial for developing innovative and sustainable solutions to today's environmental challenges**.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/58vjnzfz>





Classification of Green Skills

Green skills can be broadly classified into **two categories: core green skills and sector-specific green skills.**

Core green skills are transferable across disciplines and include environmental awareness, critical thinking, creativity, collaboration, and adaptability. These skills enable individuals to make sustainable decisions in both personal and professional contexts.

Sector-specific green skills refer to technical competencies required in particular industries. For instance, renewable energy involves solar panel installation and smart grid development, while agriculture demands sustainable farming and water management techniques. The construction and transportation sectors require knowledge in eco-friendly design, energy efficiency, and emission reduction. In addition to technical skills, soft skills such as leadership, ethical reasoning, and systems thinking are essential for promoting sustainability. These abilities support responsible decision-making and holistic problem-solving in addressing environmental challenges.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/58vjnzfz>



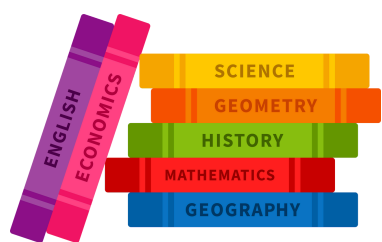


Why Teach Green Skills at High School Level

- **Critical Development Stage:** High school is a formative period when students begin shaping their identities, values, and worldviews.
- **Lifelong Competencies:** Green skills promote critical thinking, problem-solving, and responsible decision-making — essential for life and learning.
- **Environmental Awareness:** Students learn to understand the impact of their actions and make choices that support sustainability.
- **Career Readiness:** Early exposure to green skills prepares students for emerging opportunities in the green economy (e.g., renewable energy, sustainable design).
- **Global Citizenship:** Green education fosters awareness of global interdependence and encourages students to think across borders and generations.
- **Creativity & Innovation:** Green skills encourage students to design sustainable solutions and think creatively about real-world challenges.
- **Empowerment & Leadership:** Educators empower students to become changemakers capable of building a more sustainable and equitable future.

Click on the video icon to learn more or
go to the following link:
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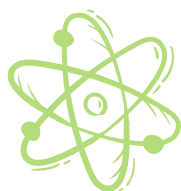




Green Skills in Your Subject Area

Green skills can be integrated into every subject area — not just science or environmental studies. With thoughtful planning, all disciplines can contribute to sustainability education and help students develop critical, creative, and responsible thinking.

Here are a few examples:



- **Science:** Students can explore renewable energy sources through hands-on experiments or investigate local water conservation strategies.



- **Literature:** Environmental themes in novels or poems can spark discussion, or students can write essays on how literature inspires action.



- **Math:** Learners can analyze real-world environmental data or calculate the cost-efficiency of sustainable technologies.

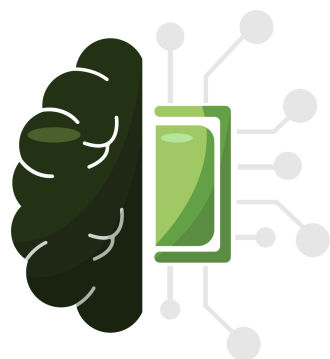


- **Art:** Students might create upcycled art or design posters promoting sustainable living.

PART 2



INTRODUCTION TO ARTIFICIAL INTELLIGENCE



How does AI work?

AI systems mainly rely on machine learning and deep learning to function.

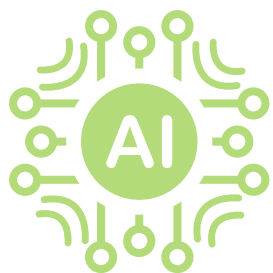
- In **traditional programming**, humans define rules step by step.
- In **machine learning**, the system learns from data by identifying patterns and forming its own rules based on examples. For instance, an AI trained on animal images can learn to recognize cats or dogs in new photos.
- **Deep learning**, a subset of machine learning, uses artificial neural networks inspired by the human brain. It processes data through layers to detect increasingly complex features — from edges to full objects. Modern applications like voice assistants or image recognition systems use deep learning to operate effectively.



Data is essential for AI. The quantity and quality of data directly affect performance. Poor or biased data can lead to inaccurate or unfair results — hence the phrase: “**Data is the fuel of AI.**”

Click on the video icon to learn more or
go to the following link:
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Artificial Intelligence and Its Types

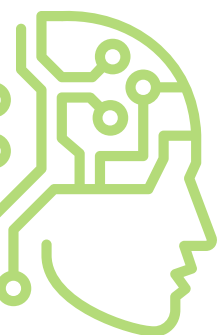


Artificial intelligence (AI) refers to computer systems designed to perform tasks that typically require human intelligence, such as learning, reasoning, and problem-solving. Introduced as a scientific field in 1956, AI has advanced significantly with developments in data, algorithms, and computing power. Today, AI includes subfields like machine learning, natural language processing, robotics, and computer vision—enabling machines to interpret data, make decisions, and operate with minimal human input.



AI is commonly classified into three categories: **Artificial Narrow Intelligence (ANI)**, **Artificial General Intelligence (AGI)**, and **Artificial Super Intelligence (ASI)**.

- **ANI** refers to AI systems that perform specific tasks, such as voice recognition or recommendation algorithms. This is the type of AI used today.
- **AGI** describes a hypothetical AI capable of human-like reasoning and learning across a wide range of tasks. It has not yet been realized.
- **ASI** refers to a future concept where AI would surpass human intelligence in all areas, including creativity and emotional understanding. This remains speculative and theoretical.



Click on the video icon to learn more or go to the following link:
<https://tinyurl.com/nehzk97u>





Artificial Intelligence in Everyday Life

Artificial intelligence is already integrated into many aspects of daily life:

- **Healthcare:** AI analyzes medical images to assist in early diagnosis and accurate treatment planning.
- **Finance:** AI detects fraud by monitoring real-time transactions and unusual activity.
- **Social Media & E-commerce:** Platforms use AI to personalize content, suggest products, and enhance user experience.
- **Smart Technologies:** AI powers smart homes, navigation apps, and self-driving vehicles.

➤ **In education,** AI enables personalized learning by adapting content to each student's needs and pace. It can analyze performance, correct pronunciation, and provide feedback. For teachers, AI offers support in planning, content creation, and simplifying complex topics.

➤ When used thoughtfully, AI enriches education — not by replacing teachers, but by enhancing their impact and empowering students as active learners.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/nehzk97u>





Using AI Responsibly

- **Data Privacy:** AI systems rely on large datasets, often including personal information. User data — especially in education — must be protected and handled securely.
- **Algorithmic Bias:** AI can unintentionally reproduce biases found in training data. Users should question AI outputs and understand that accuracy depends on the quality of the data.
- **Workforce Impact:** While AI automates routine tasks, it may also displace certain jobs. At the same time, it creates new roles. Educators should prepare students with adaptable skills and emphasize lifelong learning.
- **Avoiding Anthropomorphism:** AI is not human — it does not have feelings, intentions, or desires. It processes data based on programming. Misinterpreting AI as human-like can lead to confusion.
- **Ethical Awareness:** Users and students must be encouraged to think critically, consider the broader social implications of AI, and engage with the technology ethically.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/4un9mb4v>



Ideas for Introducing AI Concepts in the Classroom

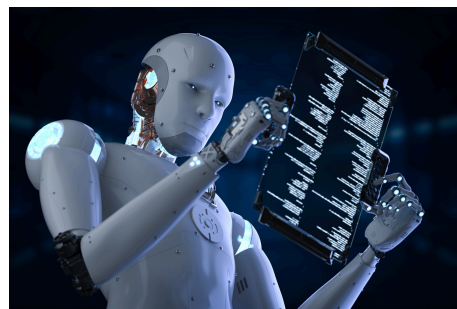
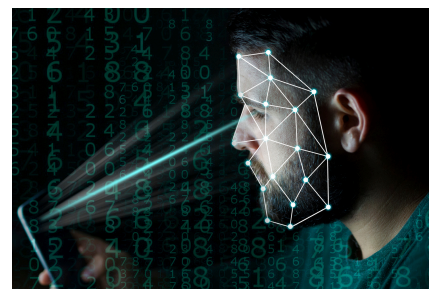
As artificial intelligence becomes increasingly present in our daily lives, it is essential to help students understand what AI is, how it works, and why it matters. Introducing AI concepts in the classroom not only builds digital literacy but also encourages critical thinking, ethical awareness, and future-ready skills. In the following pages, you are going to find practical and engaging ideas to help educators introduce AI in ways that are age-appropriate, accessible, and connected to real-world applications.



Activity 1: Discovering Artificial Intelligence

PART 1

Look at the tech examples below. What do you think they have in common?



PART 2

Discuss in small groups. What makes something intelligent?

1. What does it mean to be intelligent?
2. Can a machine be intelligent? Why or why not?

PART 3

Based on your group discussion, write a definition of Artificial Intelligence (AI):



Teacher's Notes for Activity 1

Objectives

Students will explore and develop a working definition of Artificial Intelligence (AI) through observation and group discussion.

Materials Needed

·Printed worksheet OR
Printed or projected
images/descriptions of
various AI powered
technologies

Lesson Outline

1. Mystery Investigation (10 min): Show students some AI powered tech examples. In groups, students identify what these have in common.
 2. Class Brainstorm (10 min): Discuss what it means to be intelligent. Note down traits (learning, problem-solving, etc.).
 3. Define AI (10 min): Guide the groups to build a shared definition of AI. Then, collect all the definitions to have a shared definition of AI as a class.
- Optional Extension:
Ask students to research a real AI tool and show it in class or explain what it does in one paragraph.

Activity 2:

How does AI work?



In traditional programming, a human writes out the instructions for the computer to follow — step by step. In contrast, machine learning allows a computer to learn from data. The computer finds patterns in the data and uses them to make decisions or predictions. Deep learning is a special kind of machine learning that uses structures called neural networks, which are inspired by the human brain.

PART 1

Fill in the blanks using the following words:

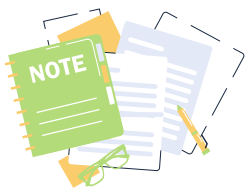
programming, data, machine learning, patterns, deep learning

1. In _____, a computer learns from examples instead of being given direct instructions.
2. Traditional _____ tells a computer exactly what to do, step by step.
3. AI systems find _____ in large sets of data to make predictions or decisions.
4. _____ is a technique that uses neural networks to help machines understand complex information.
5. AI systems need large and diverse amounts of _____ to work well.

PART 2

Imagine you are training a computer to tell the difference between cats and dogs using photos. You need to show it many labeled examples so that it can analyze the images to learn pattern and to predict new images.

1. What kind of examples would you give the computer?
2. How does the computer decide if a new image is a cat or a dog?
3. What might happen if the training data only had pictures of brown dogs and white cats?



Teacher's Notes for Activity 2

Objectives

- Understand the basics of how AI works.
- Define key concepts: machine learning, deep learning, data, and pattern recognition.
- Reflect on the role of training data and its impact on AI performance.

Materials Needed

- Printed worksheet

Lesson Outline

1. Activate prior knowledge and introduce key concepts. (5-10 minutes)

Write on the board: “Traditional Programming” vs. “Machine Learning”

- Programming: A person gives the computer step-by-step instructions.
- Machine learning: The computer learns from examples and finds patterns.
- Deep learning: A special type of machine learning using neural networks inspired by the brain.

2. Reinforce key vocabulary and concepts with Part 1 on worksheet.

(Answers: 1. machine learning, 2.programming, 3. patterns, 4.deep learning, 5.data

) (10 minutes)

3. Have students work in pairs or groups to discuss the questions in Part 2.

Facilitate discussion and emphasize the importance of diverse data and the problem of bias in AI training. (10 minutes)

Optional Extension: On the board, draw a simple concept map with three branches labeled Programming, Machine Learning, and Deep Learning, and ask students to collaboratively add brief definitions or real-life examples under each category to help visualize the differences.

Activity 3:

AI in Everyday Life

PART 1

Below are several activities. Which of these involve AI? Mark each with Yes or No and explain your reasoning.

1. A streaming app recommends movies you might like: YES / NO
2. A microwave heats your food when you press a button: YES / NO
3. Google Maps suggests a faster route due to traffic: YES / NO
4. An app gives you feedback on your grammar in an exercise: YES / NO
5. A classroom projector displays slides: YES / NO

PART 2

List two examples of how you have interacted with AI in the last 24 hours.

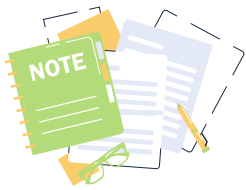
1.

2.

PART 3

Discuss the following questions in small groups.

1. Which example of AI surprised you the most? Why?
2. Do you think AI makes life better or more complicated? Explain.
3. Would you trust AI to help you make a big decision (like a medical diagnosis or financial advice)? Why or why not?



Teacher's Notes for Activity 3

Objectives

- Understand how AI is used in everyday contexts like healthcare, finance, social media, and education.
- Identify real-life examples of AI around them.
- Reflect on the role of AI in improving or challenging aspects of daily life.

Materials Needed

- Printed worksheet
- Board or projector
- Markers or pens

Lesson Outline

1. Warm-up (5–10 min): Ask students: “Where do you think you see AI in daily life?” List their ideas on the board.
2. Teacher Explanation (10 min): Briefly explain different domains where AI is used (healthcare, finance, shopping, education).
3. Worksheet Activity (20 min): Students work individually or in pairs to complete the worksheet.
4. Class Discussion (10 min): Review answers, encourage students to share their examples and insights.
5. Wrap-up (5 min): Ask students to reflect: “How do I feel about AI being part of my life?”

Optional Extension:

Homework: Interview a family member about how they encounter AI and share interesting findings with the classmates.

Activity 4: Using AI Responsibly



AI REJECTED HER IN 10 MINUTES – WITHOUT READING HER RESUME



When Julia Reynolds applied for a tech job in Berlin, she expected an interview. With a master's degree, fluent German, and years of experience, she seemed like a strong candidate.

Instead, she got an instant rejection.

“I didn't know AI was screening my application before a human,” she said.

Julia later learned that the AI also ranked resumes by keywords—like “data-driven” or “strategic mindset.” Without them, strong applicants were dismissed.

The reason? An AI recruitment tool couldn't read her PDF resume. The formatting confused the system, which missed key information like her job titles.

“I didn't know AI was screening my application before a human,” she said.

Read the news story above and answer the following questions. Discuss your answers with your classmates.

1. Why was Julia rejected from the job so quickly?
2. What mistakes did the AI system make when reading her resume?
3. What did Julia learn about how the AI system ranked applicants?
4. What are some risks of using AI to screen job applications?



Teacher's Notes for Activity 4

Objectives

- Understand how AI is used in recruitment and its potential risks.
- Reflect on the ethical challenges of using AI in decision-making.
 - Develop critical thinking about fairness, transparency, and data bias in AI systems.

Materials Needed

- Printed worksheet (optional)

Lesson Outline

1. Warm-up: Ask students if they've ever applied for a job or internship online (5–10 min).
2. Read the news story and answer the questions (10 min).
3. Group discussion: Ethical challenges of AI in hiring (10–15 min).

Optional Extension: Write a short paragraph on whether AI should be used in recruitment.

PART 3



CREATING OPEN EDUCATIONAL RESOURCES WITH ARTIFICIAL INTELLIGENCE



Open Educational Resources (OER)

- Open Educational Resources (OER) are freely accessible teaching, learning, and research materials that anyone can use, adapt, and share. These include textbooks, videos, lesson plans, quizzes, and full courses.
- What makes OER unique is their openness—many come with Creative Commons licenses, allowing legal and ethical reuse and modification with proper attribution. OER platforms such as OER Commons, OpenStax, MERLOT, and MIT OpenCourseWare offer thousands of resources for educators and learners.
- With the support of AI tools like ChatGPT, Canva AI, or Synthesia, educators can also create customized OER tailored to their needs—and contribute to a more inclusive, collaborative educational landscape.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/2smrutzw>





Creating Educational Materials with Artificial Intelligence

AI tools make it easier and faster to design engaging educational content such as posters, presentations, videos, quizzes, and worksheets.

- **Visuals:** Tools like Canva AI, Adobe Firefly, and DALL-e help create infographics and posters by generating layouts, visuals, and icons based on your text or topic.
- **Presentations:** Platforms like Tome, Gamma App, and Beautiful.ai create ready-to-edit slide decks with structure and design included.
- **Videos:** Synthesia, Lumen5, and HeyGen turn text into short videos with voiceovers, visuals, and subtitles.
- **Text-based Content:** AI tools like ChatGPT and Gemini support tasks such as writing lesson plans, simplifying texts, creating prompts, and translating materials.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/eb6s6ace>



Tips for Using AI in Educational Settings



Start with Purpose, Not the Tool

Before selecting a tool, ask yourself: What do I want my students to learn or achieve? Choose tools that align with your learning objectives rather than adapting your lesson to fit a tool.



Model Ethical and Critical Use

AI-generated content is not always accurate, neutral, or suitable for the students' age group. Therefore, it is important to teach students how to critically approach such content. Encourage them to fact-check the information produced by AI, to recognize possible biases or limitations, and to understand that AI should be used as a co-creator to support their thinking, not as a replacement for it.



Balance Creativity with Guidance

AI tools can spark creativity, but they still need human direction. Provide prompts, examples, and rubrics to ensure students stay focused and critical in their use of AI.



Protect Privacy and Data

Use platforms that comply with data protection policies, especially when working with students. Avoid requiring logins or personal data unless you're confident in the tool's privacy standards.



Reflect and Adjust

Consider what went well, what challenges emerged, and how the tool supported—or didn't support—your instructional goals. Based on these reflections, don't hesitate to make adjustments, explore alternative tools, or try new strategies to better meet the needs of your students. Flexibility and continuous improvement are key to making the most of AI in education



Smart Prompts, Better Content

While using AI tools to create content or materials , a "prompt" is the instruction or input you provide to guide the tool's output. Think of it as a dialogue: the clearer and more precise your question or request, the more useful and relevant the AI's answer will be. In this sense, prompt writing is not a technical task but a pedagogical one, requiring clarity of purpose, audience awareness, and instructional intent.

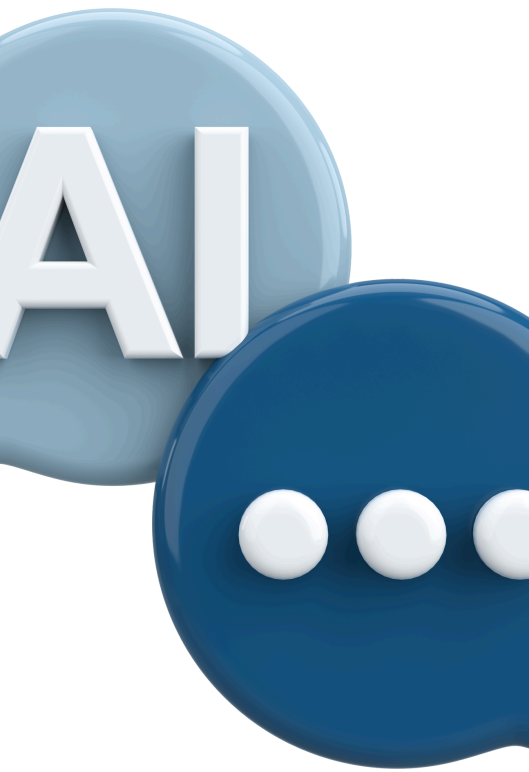
Generative AI models do not “think” or “understand” in the way humans do—they operate based on probability and learned patterns. This means:

- ***Vague or overly general prompts often result in shallow, off-target outputs.***
- ***Clear, structured prompts tailored to your educational goal can produce meaningful, classroom-ready materials.***
- ***The same tool can generate vastly different outputs depending on how the prompt is phrased.***

By mastering prompt design, teachers can ensure AI tools remain pedagogically aligned, age-appropriate, and goal-oriented.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/t2pjta7e>





Key Elements of a Quality Prompt

- **Task Definition:** What exactly do you want the AI to do? (e.g., write, summarize, create a quiz)
 - **Content Focus:** Specify the topic, subject area, or theme.
 - **Audience:** Indicate who the material is for (e.g., 10th-grade students, A2 English learners).
 - **Format:** Define the desired output type (e.g., paragraph, list, dialogue, infographic).
 - **Tone and Style:** Clarify whether the output should be formal, engaging, conversational, academic, etc.
 - **Constraints:** Include word limits, number of examples, specific vocabulary, etc.
- 
- A decorative green wavy line that starts from the bottom left and curves upwards and to the right, ending near the bottom right corner of the slide.

Prompting as an Iterative Process

Prompt writing is not a one-time task but an iterative process. You may need to:

- Test multiple versions of a prompt to get the desired result,
- Refine wording to improve clarity,
- Add or remove constraints depending on the output quality.

This reflective approach helps you gain better control over AI outputs and ensures alignment with your pedagogical goals.

Example Comparisons

✗ Basic Prompt:

“Write a paragraph about renewable energy.”

✓ Enhanced Prompt:

“Write an informative paragraph (80–100 words) for 10th-grade students explaining what renewable energy is, why it is important, and give at least two examples. Use clear and simple language suitable for classroom use.”



Exploring AI Tools

In this section, you will explore a variety of AI tools that can support you in designing engaging and creative learning materials. These tools can help you produce visuals, presentations, videos, texts, and interactive activities—quickly and effectively.

For each tool introduced, you will find:

- A brief explanation of what the tool does and how it works
- Practical suggestions on how to use the tool to create green skills-related content

Whether you're designing a poster about recycling, a video explaining climate change, or a student project on sustainable energy, these tools can bring your ideas to life and help make green education more impactful.



1. ChatGPT



What does it do?

ChatGPT is an advanced language model developed by OpenAI that can generate human-like text based on prompts. It can be used to create educational content such as lesson plans, reading texts, writing prompts, comprehension questions, explanations, summaries, images and more. It supports multiple languages and can tailor its output to different age levels, subject areas, and learning goals.



How to use it to create materials

- **Step 1:** Define your learning objective (e.g., teaching students about climate change or sustainable consumption).
- **Step 2:** Write a clear prompt describing what kind of content you want.
- **Step 3:** Review, revise, and adapt the output to your class needs.
- **Step 4:** Use it as part of a lesson, a worksheet, a discussion starter, or a student project.

 **Tip:** Always review the content for accuracy and appropriateness before using or sharing.



How to access ChatGPT

You can access ChatGPT through the official OpenAI platform. The tool is available online and can be used without installation. A free version is available, though some advanced features may require a subscription.



chat.openai.com



Example Uses of ChatGPT in the Context of Green Skills Education

- **Generate a reading passage/ text or a scenario :** Ask ChatGPT to create a text for high school students on topics such as the importance of recycling and how it contributes to sustainability.
- **Create discussion questions:** After reading an environmental text in class, you can prompt ChatGPT to generate five open-ended questions that encourage critical thinking and classroom debate on issues like climate change.
- **Design a writing prompt:** Use ChatGPT to develop creative and meaningful writing tasks. For instance, you might ask for a writing activity in which students reflect on how they can reduce their environmental footprint at school or in their communities.
- **Create a quiz:** Teachers can request a short multiple-choice quiz — such as a 5-question test on renewable energy — designed for a specific grade level. This helps assess understanding and reinforce key concepts.
- **Generate an image:** DALL·E, an AI-powered image generation tool developed by OpenAI, is fully integrated into ChatGPT. You can simply type a prompt describing the image you need — such as a “sustainable city with solar panels and green rooftops” — and ChatGPT will generate a matching image in seconds. This is ideal for class posters, visual writing prompts, green skills storytelling and student project visuals.

2. Gemini



What does it do?

Google Gemini is an advanced generative AI tool developed by Google. Similar to ChatGPT, it can help teachers generate written content such as texts, summaries, questions, lesson ideas, images and more. It supports multiple languages and can adjust its tone and complexity to fit your classroom needs, including sustainability-focused lessons.



How to use it to create materials

- **Step 1:** Open Google Gemini with your Google account.
- **Step 2:** Type a clear prompt describing the teaching material you want to create.
- **Step 3:** Review the output and edit or copy it into your lesson documents.
- **Step 4:** Use the generated content in your worksheets, slides, activities, or student projects.



How to access Gemini

You can try Google Gemini for free using your Google account.



gemini.google.com



Example Uses of Gemini in the Context of Green Skills Education

- **Generate a reading passage:** Ask Gemini to write a short reading text (e.g., 150 words) for high school students on topics such as the impact of deforestation or the benefits of renewable energy. This can be used as a warm-up text, a comprehension passage, or part of a thematic unit on sustainability.
- **Create discussion questions:** After using an article or video on an environmental issue, prompt Gemini to generate 4–5 open-ended questions. These can be used to encourage classroom debate, develop critical thinking, and help students reflect on climate-related challenges in their communities.
- **Create a quiz:** Teachers can ask Gemini to generate a 5-question multiple-choice quiz on green skills topics like recycling, sustainable consumption, or water conservation. This is useful for quick formative assessments or digital quiz platforms like Google Forms.
- **Generate an image prompt:** Although Gemini itself doesn't yet generate images directly, you can ask it to create a detailed visual description—such as “a community garden where students are learning about composting and planting herbs.” This description can then be used in visual tools like Google ImageFX, Canva AI, or even DALL·E, allowing teachers or students to turn it into an actual image for classroom use.

3.Canva

What does it do?

Canva is a user-friendly design platform that now includes powerful AI tools to help teachers create engaging, professional-looking educational materials in minutes. Canva's AI features like Magic Write, Text to Image, and Magic Design can generate content, visuals, layouts, and more, saving time and boosting creativity.

How to use it to create materials

- Register or log in to [Canva.com](https://www.canva.com)
- Choose a template or start from scratch.
- Use the **Magic Write** tool in Canva Docs to generate text.
- Use **Text to Image** to turn a prompt into a classroom visual.
- Try **Magic Design** to create layouts instantly based on your content.

How to access Canva

Most AI features are available in the Canva Docs, Presentation, and Text to Image tools. Canva for Education is free for teachers and students. AI features may vary depending on account type and regional availability.



www.canva.com



Example Uses of Canva in the Context of Green Skills Education

- **Generate written content with Magic Write:** Ask Canva's Magic Write to generate educational content, such as a list of "5 sustainable habits for students" or "a paragraph explaining the importance of reducing single-use plastics." This can be used directly in a worksheet or slide.
- **Create custom visuals with Text to Image:** Type a detailed prompt like "a futuristic eco-friendly city with solar panels, green rooftops, and bike lanes", and Canva will generate original images you can use in presentations, posters, or student projects.
- **Design infographics on sustainability:** Input the key points (e.g., "steps to recycle properly at school") and let Canva generate a clear, student-friendly infographic. You can use AI-suggested layouts with Magic Design to speed things up.
- **Develop educational posters:** Use AI to generate slogans like "Protect Our Planet, One Action at a Time" and combine them with Canva templates and visuals to create impactful classroom posters or campaign materials.
- **Create interactive worksheets:** Combine Magic Write for text + Canva's templates to design beautiful, printable worksheets that include eco-tips, fill-in-the-blanks, or reflection questions.



4. Adobe Firefly



What does it do?

Adobe Firefly is Adobe's powerful generative AI tool that allows you to create images, text effects, design elements, and templates from simple text prompts. With Firefly, teachers can design custom visuals tailored to classroom themes like environmental protection, green cities, or renewable energy without needing any design skills. It's especially useful for enhancing project-based learning, visual storytelling, and sustainability education through high-quality, copyright-safe visuals.



How to use it to create materials

- Visit firefly.adobe.com and sign in with your Adobe or Google account.
- Select a feature (e.g., "Text to Image").
- Enter a descriptive prompt such as:
- "An illustrated poster of students planting trees in a green schoolyard with wind turbines in the background."
- Choose a style (e.g., watercolor, photo-realistic, 3D) and generate.
- Download or copy the image to use in presentations, posters, or worksheets.

 **Tip:** All images generated with Adobe Firefly are safe for educational use and are designed to respect copyright and usage rights.



How to access Adobe Firefly

Most features are free to try with an Adobe ID.

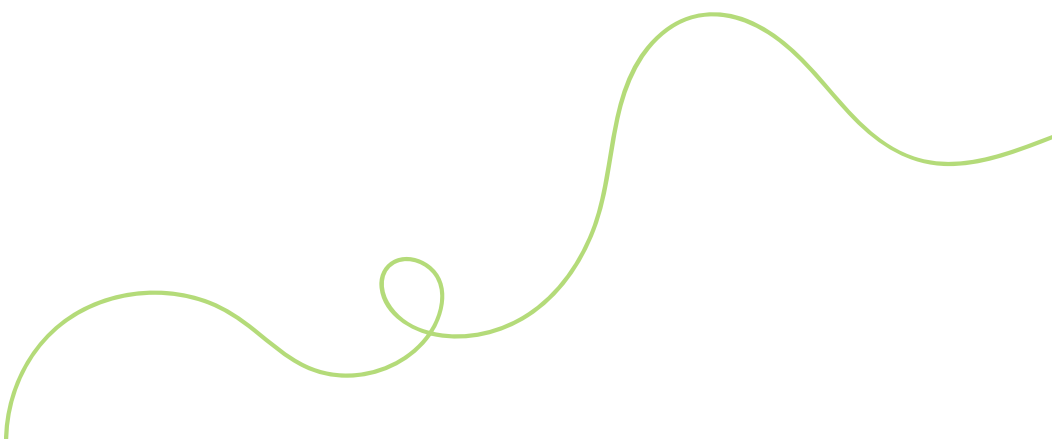


firefly.adobe.com



Example Uses of Adobe Firefly in the Context of Green Skills Education

- **Generate educational posters:** Ask Firefly to generate a poster background showing a sustainable city or classroom garden. You can later add your own slogans or text using PowerPoint, Canva, or Google Slides.
- **Create visual prompts for writing or discussion:** Use AI-generated images (e.g., “a polluted river vs. a clean river after restoration”) as visual stimuli for writing tasks, group discussions, or debate sessions on sustainability topics.
- **Design illustrations for student projects:** Support student storytelling, digital portfolios, or green innovation ideas with unique illustrations they can’t find in stock libraries — like “a biodegradable school lunch container made by students.”
- **Visualize complex concepts:** Turn abstract or scientific topics like “carbon footprint,” “circular economy,” or “green energy transition” into visual infographics or scenes that aid comprehension and memory.
- **Make your own classroom icons and assets:** Use Firefly to create matching icons, badges (e.g., “Eco Hero of the Week”), and stickers that promote student engagement in green challenges or school-wide campaigns.



5. Gamma



What does it do?

Gamma is a generative AI tool designed to help users quickly create professional-looking presentations, visual documents, and webpages from a simple prompt. For educators, Gamma offers a fast, intuitive way to build visually engaging lesson materials, student assignments, and project presentations—without needing design experience. It's ideal for green skills education, digital storytelling, and interactive student work.



How to use it to create materials

- Go to <https://gamma.app> and sign in with your email or Google account.
- Type a prompt like:
- “Create a 6-slide presentation about sustainable farming practices for high school students.”
- Gamma will instantly generate a themed deck including text, images, and layout.
- Edit the content, add questions or links, and present directly or export to PDF or PowerPoint.
- Share via link for remote access or collaborative student review.



How to access Gamma

No software installation required. All work is done in-browser and can be accessed anywhere. Presentations can be shared online or downloaded and opened with tools like PowerPoint or Google Slides for offline use or further editing.



gamma.app



Example Uses of Gamma in the Context of Green Skills Education

- **Create a lesson presentation:** Ask Gamma to generate a slide deck on topics like “What is a circular economy?” or “10 ways to reduce energy use at school.” Each slide comes with visuals and editable explanations.
- **Design a student-led project brief:** Prompt Gamma to produce a project outline — such as “a presentation template for students proposing a school sustainability initiative” — which students can complete and present.
- **Develop explainer decks:** Use Gamma to build micro-presentations on key terms (e.g., carbon footprint, sustainable consumption), turning definitions into interactive visual resources.
- **Convert a reading passage into slides:** Paste an AI-generated or textbook text about climate change into Gamma, and it will transform the content into a clean, engaging visual summary.



6. HeyGen



What does it do?

HeyGen is a powerful generative AI platform that allows users to create high-quality, realistic talking-head videos from written scripts. It uses virtual avatars and text-to-speech technology to produce professional video content without the need for cameras, microphones, or editing skills. For teachers, HeyGen is ideal for delivering lesson introductions, student instructions, flipped classroom content, and digital storytelling—especially in green skills and sustainability education, where visual impact and clear communication matter.



How to use it to create materials

- Visit <https://www.heygen.com> and create an account.
- Choose an avatar, select your preferred voice and language.
- Paste your script (e.g., a short explanation about recycling or climate action).
- Preview and generate the video.
- Download or share the video link for classroom or online use.



How to access HeyGen

Free version includes limited exports and watermark; paid versions offer more avatars, voices, and longer videos. Videos can be downloaded and embedded in slides, learning platforms, or shared via link.



[heygen.com](https://www.heygen.com)



Example Uses of HeyGen in the Context of Green Skills Education

- **Introduce a green skill or a concept:** Use HeyGen to create a concise video where an AI avatar explains a specific green skill—such as energy efficiency, waste reduction, or sustainable transportation. These videos can serve as engaging micro-lessons that introduce key concepts in a clear, visual, and student-friendly format.
- **Create a lesson opener:** Generate a short video with an avatar explaining the day's topic, such as “What is sustainable consumption?” Use this at the start of class to grab attention and provide context.
- **Explain project instructions:** Instead of giving written guidelines, turn them into a clear, friendly video presentation for a student-led activity like a “Green Innovation Fair.”
- **Promote school sustainability campaigns:** Create engaging announcement videos featuring avatars to introduce recycling competitions, green week challenges, or school-wide eco-projects.

7. Synthesia



What does it do?

Synthesia is a leading AI video generation platform that allows you to produce videos from text using life-like avatars and natural-sounding voices. With a wide range of templates, voices, and languages, Synthesia enables educators to create high-quality, engaging video content for lessons, flipped classrooms, student projects, and more. It's especially effective for green skills education, where visual explanations and consistent messaging enhance understanding and student interest.



How to use it to create materials

- Go to <https://www.synthesia.io> and sign in.
- Choose a video template or start from scratch.
- Select an avatar, language, and voice.
- Paste your script (e.g., an explanation of composting or renewable energy).
- Generate the video and download or share it.



How to access Synthesia

Sign up with your email to start creating videos. A free trial is available, which includes limited video exports and basic avatar options. For full functionality—such as longer videos, additional avatars, and branding tools—a paid plan is required.



[synthesia.io](https://www.synthesia.io)



Example Uses of Synthesia in the Context of Green Skills Education

- **Introduce a Green Skill or Concept:** Use Synthesia to create a short explainer video where an avatar introduces a topic like sustainable transportation or the concept of zero waste. These videos can replace traditional lecture segments or be shared online as standalone microlearning resources.
- **Guide Project-Based Learning:** Create a video briefing that outlines a student assignment such as a Green Innovation Challenge. This helps ensure consistency of instruction and supports self-paced learning.
- **Generate Multilingual Resources:** Take advantage of Synthesia's language options to produce the same video in multiple languages—ideal for inclusive classrooms or international collaborations focused on sustainability.
- **Create Project/ Campaign Messages:** Design short, persuasive videos with avatars to promote recycling programs, green weeks, or student-led environmental initiatives. These videos can be shared on screens, in assemblies, or on digital platforms.

8. Eleven Labs



What does it do?

ElevenLabs is an advanced AI text-to-speech platform that transforms written text into highly realistic, human-like speech. It supports multiple languages, accents, and voice styles, allowing teachers to create audio materials for listening tasks, accessibility support, flipped classrooms, and audio-enhanced lessons—all without needing to record their own voice. It is especially useful for supporting inclusive education, language learning, and green skills content where auditory learning can enhance engagement and comprehension.



How to use it to create materials

- Visit <https://www.elevenlabs.io> and create a free or paid account.
- Choose a voice (select from existing voices or create your own).
- Paste the script or lesson content you want to convert to audio.
- Select the language and voice settings.
- Generate and download the audio file.
- Integrate the audio into slides, videos, online platforms, or listening activities.



How to access Eleven Labs

A free plan is available with limited usage. Paid plans allow longer audio generation, voice cloning, and commercial use. All audio files can be downloaded and used in educational platforms or multimedia materials.



[elevenlabs.io](https://www.elevenlabs.io)



Example Uses of Eleven Labs in the Context of Green Skills Education

- **Create audio reading materials:** Convert a short passage about recycling, sustainable cities, or renewable energy into an audio file. Use the audio as part of a listening activity, embed it in a student podcast project, or convert it into a QR code linked to a spoken message on a classroom poster or display board.
- **Support language learners:** Generate green skills-related vocabulary lists or explanations with clear pronunciation in English or another language, helping multilingual learners better understand sustainability content.
- **Narrate student projects:** Turn student-written green-themed essays or stories into narrated audio for a classroom podcast, presentation, or digital storytelling project.
- **Make content more accessible:** Provide audio versions of written worksheets or project instructions to support students with reading difficulties or visual impairments.

9. Lumen5



What does it do?

Lumen5 is an AI-powered platform that turns text into short, visually engaging videos. It automatically selects stock images and footage, adds animations, highlights key phrases, and pairs it all with music and transitions—creating dynamic videos in minutes. Lumen5 offers a simple way to transform written educational content into attention-grabbing videos that support flipped classrooms, digital storytelling, and environmental awareness campaigns. It's particularly effective for green skills education, where visual narratives help connect students to real-world sustainability issues.



How to use it to create materials

- Go to <https://www.lumen5.com> and sign up for a free account.
- Choose a video template (landscape, square, vertical, etc.) depending on your platform or use case.
- Paste in your content—this could be a short article, list, script, or even lesson summary.
- Lumen5 will generate a first draft video with visuals, highlighted phrases, and music.
- Customize the visuals, transitions, and text as needed.
- Export the video and share it with students via your LMS, social media, or classroom screen.



How to access Lumen5

The free plan includes basic features with branding. Paid plans offer high-definition video, advanced customization, and brand removal.



[lumen5.com](https://www.lumen5.com)



Example Uses of Lumen 5 in the Context of Green Skills Education

- **Introduce a Green Concept Visually:** Turn a short script or article into a video introducing topics like sustainable farming, climate change, or zero-waste lifestyles. Use it as a lesson opener or a learning resource.
- **Create a Summary of a Classroom Campaign:** Document the highlights of a school sustainability week or student-led green initiative. Include visuals, stats, and student quotes to celebrate and share the impact.
- **Design Awareness Videos for Social Media:** Use Lumen5 to produce short vertical videos like “5 Simple Ways to Save Water at School” for your school’s Instagram or YouTube channel. These are ideal for student engagement and real-world relevance.
- **Turn Student Work into Multimedia:** Have students write articles or reflections on environmental topics, then use Lumen5 to turn their work into short educational videos as part of a digital portfolio or project presentation.



From Tools to Transformation

You've just explored a powerful collection of generative AI tools designed to support your journey as an educator in the age of sustainability and digital transformation.

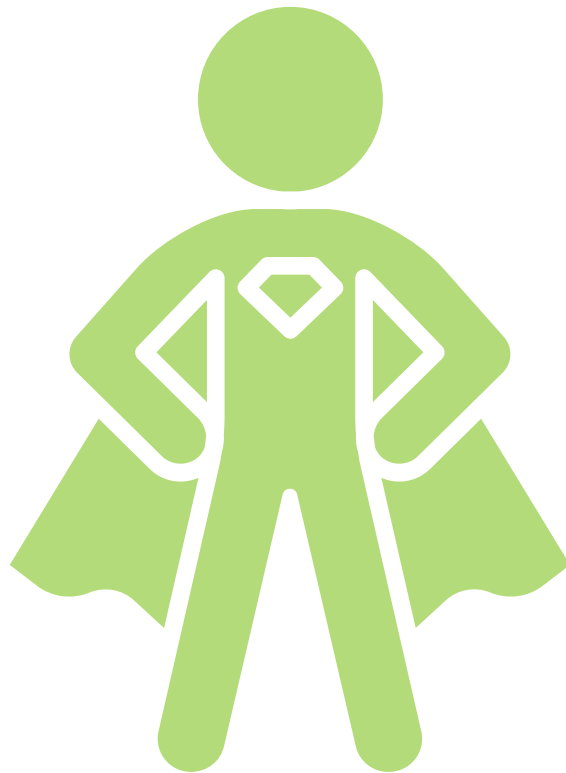
WHAT IS NEXT?

- Start small: Choose one tool and try it in a simple activity.
- Experiment freely: Not everything will work perfectly the first time — and that's okay.
- Empower your students: Let them co-create, reflect, and explore with AI too.
- Keep green skills at the heart: Let every task and tool support sustainability awareness.

You don't need to be an expert in AI to begin. You just need to be curious, creative, and open to change.



PART 4



**SUPERCHARGE YOUR CLASSROOM
WITH GREEN SKILLS & AI**

Teaching Green Skills with Project-Based Learning and AI



In this section, we will explore how to teach green skills through project-based learning (PBL)—a student-centered approach that connects classroom learning with real-world environmental challenges. When paired with AI tools, PBL becomes even more powerful, enabling students to design creative, impactful, and digitally enhanced solutions.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/fxz9d3kf>





AI-Enhanced Green Skills Projects for Students

The following pages present a series of sample project ideas that combine green skills education with the creative use of AI tools. Each project is designed to support real-world learning through hands-on, student-driven activities.

These ideas aim to:

- Foster environmental awareness and systems thinking
- Encourage collaboration, creativity, and responsible action
- Help students explore sustainability challenges using AI-supported solutions

You are encouraged to adapt these examples to suit your subject area, classroom context, and student needs. Use them as inspiration to design your own meaningful learning experiences that empower students to engage with sustainability in innovative ways.

Click on the video icon to learn more or
go to the following link:
<https://tinyurl.com/5b7r9tec>





1. Design an Eco-Awareness Poster

Project Idea: Students use AI-powered design tools to create posters on environmental topics like water conservation, renewable energy, or climate change. This builds communication skills and sustainability awareness while engaging students in persuasive visual storytelling.

Suggested AI Tools: Canva, Adobe Firefly

Green Skills: Sustainability Awareness, Visual Communication, Critical Thinking



2. Create a Green Storybook

Project Idea: Learners develop an illustrated story about an environmental problem and a solution (e.g., stopping deforestation, cleaning oceans). They use ChatGPT for storytelling support and Firefly for visuals. This fosters creativity, systems thinking, and responsible citizenship.

Suggested AI Tools: ChatGPT, Adobe Firefly

Green Skills: Storytelling, Systems Thinking, Environmental Literacy



3. Sustainable City Visualization

Project Idea: Students envision future eco-friendly cities and use AI to generate images and narratives. They explore ideas like public green spaces, smart transport, and energy-efficient buildings, reflecting sector-specific green skills.

Suggested AI Tools: Adobe Firefly, DALL·E

Green Skills: Urban Sustainability, Innovation, Visual Design



4. Awareness Video on Climate Action

Project Idea: Students create an awareness video on issues like plastic pollution or global warming. Using Lumen5 or Synthesia, they combine data, AI narration, and visuals to convey their message effectively.

Suggested AI Tools: Lumen5, Synthesia

Green Skills: Climate Literacy, Media Literacy, Collaboration



5. Green Innovation Project Pitch

Project Idea: Learners design an eco-innovation (e.g., compostable packaging, green energy solutions), then prepare and deliver a pitch presentation. This mirrors real-world entrepreneurship.

Suggested AI Tools: Gamma, ChatGPT

Green Skills: Problem Solving, Eco-Innovation, Communication



6. Green Week Campaign Video

Project Idea: Students create a campaign video to promote sustainability events such as tree-planting or zero-waste lunch challenges. Using avatars or text-to-speech tools, they lead peer awareness initiatives.

Suggested AI Tools: Lumen5, Synthesia, HeyGen

Green Skills: Leadership, Ethical Engagement, Advocacy



7. Sustainability Podcast

Project Idea: Students research topics like sustainable agriculture, circular economy, or clean energy and develop podcast episodes. They use Eleven Labs for narration and ChatGPT for script writing.

Suggested AI Tools: ChatGPT, Eleven Labs

Green Skills: Research, Digital Communication, Collaboration, Problem Solving, Eco-Innovation, Communication



8. Design a Circular Economy Infographic

Project Idea: Learners create infographics explaining how circular economy principles apply to real-world scenarios (e.g., fashion, electronics). Canva helps with layout while ChatGPT supports idea development.

Suggested AI Tools: Canva, ChatGPT

Green Skills: Circular Thinking, Visual Communication, Analysis



9. Eco-Hero Digital Comics

Project Idea: Students invent a green-themed superhero and create a comic strip that showcases challenges and sustainable solutions. This activity reinforces creative problem-solving and values-based thinking.

Suggested AI Tools: Adobe Firefly, ChatGPT

Green Skills: Creativity, Values Education, Critical Thinking



10. Design a Sustainable Product Prototype

Project Idea: Learners design and digitally prototype an eco-friendly product, explaining its impact and materials. They present their work as a slideshow or animation.

Suggested AI Tools: Gamma, Canva

Green Skills: Design Thinking, Resource Efficiency, Innovation



11. AI-Powered Green Journalism

Project Idea: Students become school journalists covering green practices in their school or community. They generate articles and newsletters featuring interviews, statistics, and calls to action.

Suggested AI Tools: ChatGPT, Canva

Green Skills: Civic Engagement, Information Literacy, Ethical Communication



12. Interactive Recycling Guide

Project Idea: Learners produce a school-based recycling guide with AI visuals and simple instructions. This promotes systems awareness and responsible behavior.

Suggested AI Tools: ChatGPT, Canva

Green Skills: Design, Sustainable Practice, Systems Thinking



13. Sustainable Fashion Campaign

Project Idea: Students explore fast fashion's impact and promote sustainable alternatives through visual media or social posts. They create lookbooks, reels, or campaigns with AI tools.

Suggested AI Tools: Lumen5, Canva

Green Skills: Knowledge Transfer, Collaboration, Visual Storytelling



14. Green Skills Explainer Animation

Project Idea: Learners choose one core green skill (e.g., teamwork, systems thinking) and create an animated explainer video to teach peers its value.

Suggested AI Tools: Synthesia, ChatGPT

Green Skills: Knowledge Transfer, Collaboration, Visual Storytelling



15. Eco-Friendly Travel Guide

Project Idea: Students research and produce an eco-travel guide including low-emission transport, responsible tourism, and carbon-saving tips.

Suggested AI Tools: ChatGPT, Canva

Green Skills: Sustainable Mobility, Research, Systems Thinking



16. Green Skill Quiz Creation

Project Idea: Learners create interactive quizzes on sustainability topics. These can be used as peer learning or awareness tools.

Suggested AI Tools: ChatGPT, Google Forms

Green Skills: Environmental Literacy, Assessment Design, Peer Education



17. Future of Food Visual Report

Project Idea: Students will investigate future trends in food production and consumption — such as plant-based diets, sustainable farming, food waste reduction, and alternative proteins. Using their research, they will create a visual report that communicates these insights through infographics, illustrated timelines, and creative visual storytelling.

Suggested AI Tools: Adobe Firefly, Canva

Green Skills: Food Systems Literacy, Communication, Innovation



18. Nature Soundboard or Audio Diary

Project Idea: Students produce a sound-based diary or calming nature soundboard with AI voices to promote mindfulness and nature appreciation.

Suggested AI Tools: Eleven Labs, Canva

Green Skills: Well-being, Environmental Connection, Digital Audio Literacy



19. Carbon Footprint Awareness Toolkit

Project Idea: Students will create a multi-platform awareness campaign to encourage their community to take small but effective actions for reducing carbon footprints. They will research key carbon reduction strategies (energy saving, sustainable mobility, waste reduction), then design engaging materials such as infographics, short videos, and social media posts.

Suggested AI Tools: Gemini, Chat GPT, Canva

Green Skills: Carbon Literacy, Action Planning, Systems Awareness



20. Green Entrepreneurship Pitch

Project Idea: Students form startup ideas that solve real-world ecological problems and develop pitches complete with logos, value propositions, and branding assets.

Suggested AI Tools: Gamma, Firefly, Canva, Gemini, ChatGPT

Green Skills: Entrepreneurship, Strategic Thinking, Communication

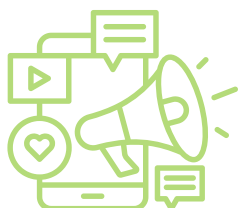
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Our course titled “**AI-Empowered Green Skills Education**” has enabled open enrollment. Anyone can self-enroll in the course by signing up at <https://canvas.instructure.com/register> and use the following join code: **THYRN8**



Want to dive deeper into the course content, explore additional resources, or stay updated with our latest activities? Visit our website: **eaien.eu**



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