



WE ARE EUROPE

Sustainable Development

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Action Kit
English Version

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Introduction

In a world facing unprecedented challenges, from climate change to social inequality, the pursuit of sustainable development has never been more critical. As we stand at the crossroads of our future, it's imperative that we equip ourselves with the knowledge and tools needed to create a better world for generations to come. This Action Kit aims to provide educators across Europe with concrete ideas on how to design and implement small classroom projects which are connected to the Sustainable Development Goals. The projects were co-designed by teachers and students of the participating schools.

The projects can be implemented exactly as they are described, but we welcome teachers willing to adapt them to their needs and, why not, share their ideas with the consortium in order to further enrich the Action Kit after the end of the project.

Material in the Action Kit

The core material in this document are the proposed project plans. All are included in Appendix II. For your convenience, an empty project template is included in Appendix I. It can be utilized in case you wish to create your own, appropriate projects or adapt the ones proposed here to your classroom's specific needs.

APPENDIX I
Activity Description Template

Project Title	
Project overview/ description	Please provide a brief overview of the project, referring also to the corresponding SDGs
Age group	May be ages of grade
Project goals	Please list learning/teaching goals, focusing also on skills and/or competencies
Material needed	Eg papers, markers, board, etc
Digital Resources needed	Videos, presentations, etc
Proposed duration	Class hours or days
Class distribution	Plenary/Groups (proposed number and size)
Activity Description	<p>Step by step description with proposed duration of each step (how to implement it). A proposal is the following structure:</p> <ul style="list-style-type: none"> - Introduction - Implementation (may be more than 1 phases) - Assessment <p>It is proposed that this section is split in 2 parts:</p> <ol style="list-style-type: none"> 1. Teacher's role/actions 2. Students' roles/actions
Comments – Additional ideas	<p>Anything else worth mentioning (e.g. extension ideas, possible variations (e.g. if something needed is missing from the class, how can it be done otherwise)</p> <p>It would be good to have some variation ideas for other age groups</p>

APPENDIX II

Activities

Project Title	EcoReporters – The Voice of the Young Generation for Climate Action
Project overview/ description	As part of the EcoReporters project, students will take on the role of environmental journalists, investigating current climate and ecological issues. Working in groups, they will delve into topics related to the UN Sustainable Development Goals (SDGs), such as Climate Action (SDG 13), Life on Land (SDG 15), Life Below Water (SDG 14), and Sustainable Cities and Communities (SDG 11). Using various media formats – articles, videos, podcasts, and photo essays – students will develop research and storytelling skills, culminating in publications or an exhibition to raise climate awareness within their school and local community.
Age group	9-10 years old
Project goals	<ul style="list-style-type: none"> • Enhance research and critical thinking skills. • Improve communication skills: clearly conveying complex environmental issues. • Promote climate awareness: understanding global and local ecological challenges. • Develop media literacy and journalistic ethics.
Material needed	<ul style="list-style-type: none"> • Notebooks, pens, and markers. • Printed or digital copies of relevant SDG resources (SDG 13, 14, 15, and 11). • Access to newspapers or environmental magazines for journalism examples. • Cameras or smartphones for photo or video production. • Audio recorders for podcast creation (can also be smartphone apps). • Basic art supplies for creating posters or exhibition materials.
Digital Resources needed	<ul style="list-style-type: none"> • Computers or tablets with internet access for research. • Presentation software (e.g., PowerPoint, Canva) for organizing information. • Video editing software (e.g., iMovie, Windows Movie Maker, or online tools like WeVideo). • Audio editing software for podcasts (e.g., Audacity or Anchor). • Photo editing tools (e.g., Adobe Lightroom, Canva, or free tools like GIMP). • Cloud storage or a learning management system (e.g., Google Drive, Microsoft Teams) for collaborative work and file sharing. • Access to online resources: <ul style="list-style-type: none"> • UN Sustainable Development Goals website. • Examples of environmental journalism (e.g., National Geographic, The Guardian, or local equivalents). • Educational videos on climate action or environmental challenges.
Proposed duration	5 lessons (45 minutes each) + independent student work

Class distribution	Plenary for introduction and reflection; small groups for research, production, and feedback.
Activity Description	<p><u>1. Introduction and Topic Selection</u></p> <p>Begin with an overview of relevant SDGs (13, 14, 15, and 11).</p> <p>Present examples of environmental journalism, discussing the style and impact of various formats, such as news articles, documentaries, and social media campaigns.</p> <p>Help students select topics of interest, preferably tied to local issues they can observe or investigate themselves. Alternatively, provide a prepared list of topics or organize a draw.</p> <p>Example Topics:</p> <ul style="list-style-type: none"> • The impact of climate change on local communities. • How can we protect our planet? • Reducing waste in daily life. • Choosing environmentally friendly clothing. • The role of renewable energy in combating climate change. • Everyday water-saving techniques. • Biodiversity: why protecting plants and animals matters. • Cities of the future: designing eco-friendly spaces. • Public transport’s role in reducing pollution. • Fighting poverty and inequality. • How students can drive change in their surroundings. • Effective waste segregation at home and school. • The importance of forests and their preservation. <p><u>2. Research and Interviews</u></p> <p>Teach students how to conduct research using reliable sources, gather data, and analyze information.</p> <p>Support students in reaching out to local experts, environmental activists, officials, or community members for interviews. Encourage them to record conversations, take notes, and ask open-ended questions.</p> <p>Optional: Organize a meeting with a professional journalist or climate activist to give students insights into journalism and climate advocacy.</p> <p><u>3. Production and Content Creation</u></p> <p>Help students choose the media format for their journalistic material:</p> <ul style="list-style-type: none"> • Written Articles: Teach students how to write informative and opinion pieces using clear and concise language with an engaging style. • Video Reports: Students can create short documentaries or interviews while learning the basics of filming and editing.

	<ul style="list-style-type: none"> • Podcasts: Record discussions or interviews, applying storytelling techniques suitable for audio formats. • Photo Essays: Create a series of photos with captions to tell a story and highlight local environmental issues. <p>Preparation Process:</p> <p>Students will create drafts of their work and receive feedback from peers and teachers to refine their projects.</p> <p><u>4. Editing, Review, and Finalization</u></p> <p>After implementing revisions, students will finalize their projects, focusing on accuracy, content balance, and ethical considerations.</p> <p>Organize peer-review sessions to encourage constructive feedback and improve the quality and impact of the final materials.</p> <p><u>5. Publication and Presentation</u></p> <p>Compile students' works and present them in a school publication (printed or online) or an exhibition at school or within the local community.</p> <p>Encourage students to showcase their projects in venues like community centers, city council meetings, or events organized by environmental organizations.</p> <p>Consider publishing students' works on the school's social media profiles or website to reach a broader audience.</p>
<p>Comments – Additional ideas</p>	<p><u>Evaluation and Reflection:</u></p> <p>Students' work will be assessed based on the quality of research, accuracy, creativity, and the effectiveness of their final projects.</p> <p>During reflection sessions, students will share what they've learned about climate issues, how media influence public perceptions, and their feelings about being environmental advocates.</p> <p><u>Expected Outcomes:</u></p> <p>Through this project, students will:</p> <ul style="list-style-type: none"> • Create professional journalistic materials addressing environmental issues. • Gain a deeper understanding of local and global ecological challenges. • Build confidence in using their voice and skills for climate action. • Raise awareness among peers and the local community about environmental problems and the need for sustainable actions.

	<p><u>Additional Opportunities:</u></p> <ul style="list-style-type: none">• Collaborate with local environmental organizations to provide additional resources and publishing opportunities for students.• Encourage students to submit their work to local media outlets, school newsletters, or youth activism platforms.
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Project Title	Building a Sustainable City of the Future
Project overview/ description	In this project, students will explore the concept of sustainable cities by engaging in research, design, and model creation. Focusing on the UN's Sustainable Development Goal 11 (SDG 11), their aim will be to design a city that integrates environmental care, social justice, and economic efficiency. By the end of the project, students will create physical or digital models of cities that demonstrate principles of sustainable urban planning and innovative ideas for a greener future.
Age group	6–7 years old: Simplified tasks focusing on basic concepts of sustainability, creating simpler models using LEGO or basic craft materials. 8–10 years old: More advanced concepts, including digital modeling and in-depth research on sustainable city principles.
Project goals	<ul style="list-style-type: none"> • Understanding Sustainable Cities: Students will learn why sustainable cities are important and what makes a city sustainable. Key topics will include renewable energy, eco-friendly buildings, public spaces, and effective waste management. • Developing Critical and Creative Thinking: Students will analyze real-world urban challenges and apply creative methods to devise sustainable solutions. • Collaboration and Teamwork: In groups, students will share ideas, discuss solutions, and collaboratively build models that showcase their vision of a sustainable city. • Using Recycled and Digital Materials: Students can use recycled materials, LEGO bricks, or design software to create physical or digital city models.
Material needed	<ul style="list-style-type: none"> • Recycled items: cardboard, plastic bottles, paper, string, bottle caps. • Craft supplies: scissors, glue, tape, markers, colored paper. • LEGO bricks (optional, if available).
Digital Resources needed	<ul style="list-style-type: none"> • Design tools: Tinkercad, SketchUp, Minecraft Education Edition, City Skylines. • Presentation tools: PowerPoint, Google Slides, or Canva. • Research resources: access to articles, videos, and real-world examples of sustainable cities. • Devices: tablets, laptops, or desktops with internet access.
Proposed duration	5 lessons (45 minutes each)
Class distribution	Plenary for introduction; small groups for planning, building, and presenting.
Activity Description	<p>1. Introduction to Sustainable Cities</p> <ul style="list-style-type: none"> • Research and Discussion: Students will start by discussing the characteristics of sustainable cities. They will research aspects such as renewable energy, green spaces, sustainable construction, waste management, and public transportation.

	<ul style="list-style-type: none"> • Guest Speaker or Virtual Tour: If possible, invite an expert in sustainability, an ecologist, or an urban planner to discuss real-world sustainable city initiatives. Alternatively, students will take a virtual tour of eco-friendly cities (e.g., via Google Maps' Street View in Copenhagen or Singapore) to draw inspiration from best practices. • Brainstorming: Students will discuss and exchange ideas, then list features they would like to include in their ideal sustainable city. <p>2. Project Development and Planning</p> <ul style="list-style-type: none"> • Project Teams: Students will be divided into groups, with each focusing on a specific aspect of the city, such as transportation, housing, green spaces, waste management, or public services. The teams will collaborate to ensure their designs align with the overall city plan. • City Planning: Each group will create a detailed plan for their area, including how it connects to other parts of the city (e.g., housing integrated with public transport and green spaces). Plans can be drawn on large sheets of paper or digitally created using tools like Tinkercad or SketchUp. • Feedback Round: Teams will present their plans to the class, receive constructive feedback, and make improvements to enhance sustainability and coherence across the city design. <p>3. Building the Sustainable City Model</p> <ul style="list-style-type: none"> • Material Selection and Model Building: Students will decide whether to use recycled materials, LEGO bricks, or digital design software, depending on availability and preference. • Recycled Materials: Cardboard, plastic bottles, and other recyclable items can be used to construct buildings, transport systems, green roofs, etc. • LEGO Bricks: Students can create detailed city models using LEGO. • Digital Models: Using tools like Minecraft Education Edition or City Skylines, students can build virtual city models, simulating sustainable practices. • Model Refinement: Teams will improve their models based on feedback from peers, ensuring all elements adhere to sustainability principles. <p>4. Presentation and Reflection</p> <ul style="list-style-type: none"> • City Model Presentation: Each team will present their sustainable city model, explaining the features and solutions they implemented. The presentation will cover both the model and the benefits of their designs. • Peer Review and Reflection: Students will exchange feedback on the presented models, reflect on challenges encountered, and discuss what they learned during the project. • Documentation and Report: Each team will write a short report or create a poster describing the features of their sustainable city, highlighting inspirations from real-world examples, and explaining the benefits of their solutions.
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<p>Comments – Additional ideas</p>	<p><u>Evaluation Criteria:</u></p> <ul style="list-style-type: none"> • Creativity: The innovation and originality of the proposed solutions. • Sustainability: How well the model incorporates sustainable development principles. • Collaboration: The effectiveness of teamwork and integration of ideas. • Presentation: The clarity and effectiveness of the students' explanations and city model. <p><u>Additional ideas:</u></p> <p>1. Role-Playing Stakeholders</p> <ul style="list-style-type: none"> • Assign each group a stakeholder perspective: urban planners, environmentalists, business owners, residents, or government officials. • Groups design their section of the city while considering the priorities and challenges of their assigned roles.
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Project Title	Climate Study – How Local Weather Conditions Connect with Global Climate Change
Project overview/ description	In this hands-on project, students will collect, record, and analyze local meteorological data over a set period to better understand climate patterns and the impact of climate change. By using basic weather measurement tools and analyzing historical and global climate data, students will expand their knowledge of meteorology, data analysis, and the role of local atmospheric conditions in the broader context of environmental changes.
Age group	6–10 years old: The extent of data collection depends on the age of the students. The teacher can customize the cards according to the group's skill level and abilities.
Project goals	<ul style="list-style-type: none"> • Data Collection: Students will learn to use meteorological instruments such as thermometers, rain gauges, barometers, and anemometers to gather weather data. • Data Analysis: Students will analyze collected data to identify changes and irregularities in local weather conditions. • Global Climate Context: Students will compare their findings with historical records and global climate trends to understand how climate change impacts the world. • Critical Thinking and Collaboration: Through analyzing data from various locations, students will develop critical thinking skills and learn to collaborate to interpret data within the broader context of climate change.
Material needed	<p><u>Physical materials:</u></p> <ul style="list-style-type: none"> • Meteorological instruments, e.g.: <ul style="list-style-type: none"> – Thermometer – Rain gauge – Barometer – Anemometer • Optional materials for constructing DIY instruments: • Plastic bottles, rulers, glue, straws, string, etc. (as per Appendix 2 instructions from www.ekokalendarz.pl). • Observation sheets (customized by the teacher - Appendix 1). • Stationery: pens, colored markers, rulers, graph paper. <p><u>Optional Resources:</u></p> <ul style="list-style-type: none"> • A school weather station (if available). • Access to historical weather archives and global climate data (e.g., printed charts, tables).
Digital Resources needed	<p><u>Online Resources and Tools:</u></p> <ul style="list-style-type: none"> • Websites providing real-time weather data, such as government meteorology sites or weather apps. • Historical weather data archives (e.g., local meteorological offices). • Video tutorials on using meteorological instruments and creating DIY tools.

	<ul style="list-style-type: none"> Climate data visualization tools (e.g., Excel, Google Sheets, or online graphing platforms). <p><u>Digital Presentation Tools:</u></p> <ul style="list-style-type: none"> Software for creating slideshows or visual presentations (e.g., PowerPoint, Google Slides).
Proposed duration	4 lessons (45 minutes each) + individual observations
Class distribution	Plenary for introduction; individual for observations and data collection; small groups for analyzing and presenting.
Activity Description	<p><u>1. Introduction to Weather and Climate Basics</u></p> <ul style="list-style-type: none"> Class Discussions: Explore the difference between weather and climate, analyze the factors influencing both, and introduce the topic of climate change. Practical Activities: Demonstrate the use of each measurement tool. If specialized equipment is unavailable, educational resources such as photos, videos, or online materials can be utilized (e.g., descriptions of tools in Appendix 2 from www.ekokalendarz.pl). <p>Optionally, students may create their own measurement instruments using instructions from Appendix 2.</p> <p>If feasible, organize a visit to a meteorological station for students to observe professional data collection methods.</p> <p><u>2. Identifying Weather Aspects and Data Collection Methods</u></p> <ul style="list-style-type: none"> Analyze weather observation sheets (adapted by the teacher to the students' levels). Determine data collection methods based on available school resources, such as: <ul style="list-style-type: none"> Setting up a mini weather station equipped with available tools (e.g., thermometer, hygrometer, rain gauge, barometer) or creating tools based on provided instructions. Utilizing a school weather station, if available. Accessing data from meteorological websites. <p><u>3. Data Collection</u></p> <ul style="list-style-type: none"> Regular Observations: Establish the frequency and location for data collection (e.g., daily, weekly; at school or home) to ensure consistent weather monitoring. Additional Data: Encourage students to note unusual weather phenomena (e.g., storms, heatwaves). Optional: Compare meteorological forecasts with actual conditions. <p><u>4. Data Analysis and Trend Identification</u></p> <ul style="list-style-type: none"> Input and Organization: Students will input data into a shared classroom weather observation sheet for collaborative analysis.

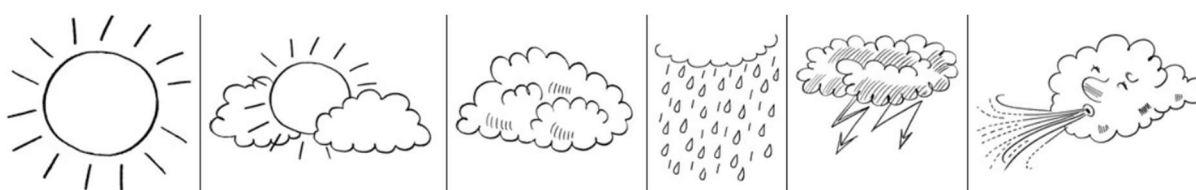
	<ul style="list-style-type: none"> • Charts and Visualization: Learn to create simple charts (e.g., line graphs for temperature, bar charts for precipitation) to illustrate trends. • Identifying Patterns: Analyze and discuss aspects such as: <ul style="list-style-type: none"> – Changes in average daily temperature over the collection period. – Precipitation patterns (e.g., days with highest or lowest rainfall). – Relationships between atmospheric pressure and weather phenomena. – Comparisons of local data, such as temperature variations across different locations. <p><u>5. Historical Data Comparison and Climate Change Analysis</u></p> <ul style="list-style-type: none"> • Accessing Historical Data: Provide students with historical weather data for their region and discuss reliable sources, such as government websites or meteorological archives. • Global Climate Data: Present students with global datasets showing trends in temperature increases, changes in precipitation, and other indicators of climate change. • Comparative Analysis: Students will: <ul style="list-style-type: none"> • Compare their data with historical records to identify trends in temperature and precipitation over the years. • Analyze how their observations relate to global climate changes and identify potential causes for observed differences. <p><u>6. Presentation and Reflection</u></p> <ul style="list-style-type: none"> • Group Presentations: Students will prepare presentations focusing on: <ul style="list-style-type: none"> – Local weather patterns and identified trends. – Connections between collected data and global climate trends. – Reflections on the impact of climate change on their community. • Class Discussion: The teacher moderates a discussion on the importance of climate data monitoring and the role of individuals and communities in understanding and mitigating climate change.
<p>Comments – Additional ideas</p>	<p><u>Skills and Competencies Developed</u></p> <ul style="list-style-type: none"> • STEM Skills: Students will gain foundational knowledge in meteorology, environmental science, and data analysis. • Data Interpretation: Students will learn to interpret data and create visualizations to enhance understanding. • Critical Thinking: Students will analyze and synthesize information from various sources to gain a comprehensive view of the topic. • Environmental Awareness: Students will develop an understanding of the global importance of climate change and its impact on local weather patterns. <p><u>Additional materials:</u></p> <ul style="list-style-type: none"> • Weather Phenomena Models:

	<ul style="list-style-type: none">– Build simple models of weather phenomena, such as a tornado in a bottle or a water cycle in a jar, to demonstrate natural processes.• Climate Change Detective:<ul style="list-style-type: none">– Present students with case studies of extreme weather events and ask them to analyze if these could be related to climate change trends.• Weather Diary:<ul style="list-style-type: none">– Encourage students to keep a daily weather diary to document their personal experiences of local weather alongside the collected data.
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Attachment 1: Sample Weather Observation Cards for Different Age Groups
The teacher can freely modify the cards depending on the group's level and abilities.

Example 1

Date	Temperature (°C)	Weather Phenomena



Instructions for Students:

- **Date:** Enter the date of observation.
- **Temperature:** Measure and record the temperature in degrees Celsius.
- **Weather Phenomena:** Choose an appropriate icon representing the observed weather phenomenon (e.g., sun, partial cloudiness, overcast, rain, storm, strong wind, etc.). Cut it out and paste it in the designated space or draw a simple symbol of the phenomenon.

Example 2

Date	Temperature (°C)	Precipitation (Yes/No)	Type of Precipitation (e.g., rain, snow)	Wind (Weak/Moderate/Strong)	Cloud Cover (Sunny, Partial, Overcast)	Other Phenomena (e.g., storm, fog)

Instructions for Students:

- **Date:** Enter the date of observation.
- **Temperature:** Measure and record the temperature in degrees Celsius.
- **Precipitation:** Indicate whether it rained or snowed (Yes/No).

- **Type of Precipitation:** If there was precipitation, specify the type – rain, snow, hail.
- **Wind:** Evaluate the wind's strength (Weak, Moderate, Strong).
- **Cloud Cover:** Choose one: Sunny, Partial, Overcast.
- **Other Phenomena:** Record any other observed phenomena, such as storms, fog, or hail.

Example 3

Date	Temperature (°C)	Pressure (hPa)	Humidity (%)	Precipitation (Yes/No)	Total Precipitation (mm)	Type of Precipitation (e.g., rain, snow)	Wind Speed (km/h)	Wind Direction (N, S, E, W, etc.)	Cloud Cover (Sunny, Partial, Overcast)	Additional Notes (e.g., storms, fog)
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Instructions for Students:

- **Temperature:** Measure the air temperature in degrees Celsius.
- **Pressure:** Check and record the atmospheric pressure in hectopascals (hPa).
- **Precipitation:** Indicate whether precipitation occurred (Yes/No).
- **Total Precipitation:** If it rained or snowed, record the amount of precipitation in millimeters (mm).
- **Type of Precipitation:** Specify the type of precipitation (e.g., rain, snow, hail).
- **Wind Speed:** Measure the wind speed in kilometers per hour (km/h).
- **Wind Direction:** Identify the wind direction (e.g., N – North, S – South, E – East, W – West).
- **Wind Strength:** Assess the wind's strength – Weak, Moderate, Strong.
- **Cloud Cover:** Indicate the degree of cloud cover – Sunny, Partial, Overcast.
- **Additional Notes:** Note any unusual weather phenomena, such as storms, fog, or strong winds.

We learn about professions: meteorologist

Have you wondered how a TV weatherman knows what the weather will be like in the coming days? Want to know who does weather observation and forecasting and how they do it? Learn about the profession of a meteorologist.

A meteorologist, also known as a synoptician, is a person who conducts scientific research related to observing and analyzing the weather, creating climate patterns, and preparing weather forecasts. People have been observing and trying to predict the weather for hundreds or even thousands of years, over time, in addition to the observations themselves, they also began to study it using various instruments. However, it was only with the invention of the telegraph and, more recently, computers that the data collected by meteorologists from different places around the world can be compared, collated with each other. After all, weather knows no boundaries, air masses travel around the world bringing with them beautiful weather, or frost or downpours. Nowadays, thanks to systematic observations at weather stations, modern technologies that facilitate these observations (some of the research is done by itself), meteorological satellites and computers that allow rapid processing of data, forecasts are increasingly accurate and reliable.



IMGW meteorological garden in Ustka , photo by Kapsuglan, CC BY-SA 3.0

Observations of the atmosphere are carried out in **meteorological gardens**. Airplanes, rockets, weather balloons, weather satellites and weather radars are also used to collect data.

In order for the measurements to be correct, all meteorological gardens are arranged according to established rules. Fenced gardens should be located in an open area. In the vicinity of the garden there can be no buildings, trees, shrubs and artificially watered crops. The garden area outside the specially designated section should be overgrown with regularly mowed grass. In the garden a measuring apparatus is placed. In the center there is usually a **meteorological cage** set up on a two-meter frame, in which **sensors** are placed that **automatically record air temperature and humidity**, as well as various **thermometers**. The garden also has a measuring plot in which **temperature at the ground surface and ground temperatures** at depths of 5, 10, 20, 50 and 100 cm are measured. In addition, the garden has **rain gauges** and electric **wind gauges** installed on a 10-meter mast to measure wind direction and speed. In addition, there are **barometers** in the meteorologists' rooms. In the gardens we can find other sophisticated equipment used, for example, to **study the time of sunshine, the amount of cloud cover or the height of the cloud base**. Meteorologists also study the degree of air pollution, the amount of pollen, smog.

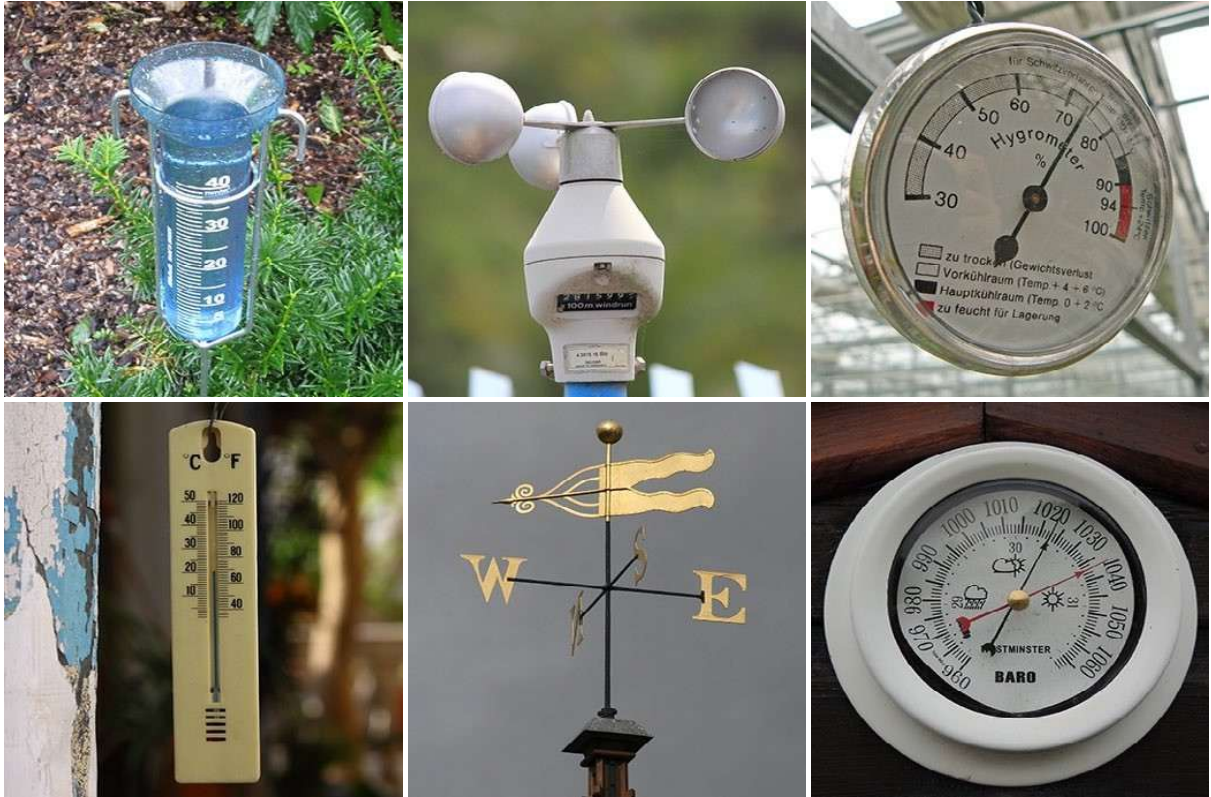
At 60 meteorological stations in Poland, observations are carried out every hour, and the results of observations and measurements are recorded in special logbooks and sent to "headquarters," where the data are used, among other things, to create weather forecasts.

Thanks to the work of meteorologists, not only do we know what to wear the next day and whether it's worth taking an umbrella with us, but most importantly, people can be warned of difficult weather conditions such as severe frost, glaze, thunderstorms, severe heat, gales, storms, tornadoes. Synopticians prepare warnings about flood, avalanche or fire danger, if necessary. Weather forecasts allow sailors, pilots, drivers, but also ice cream vendors, umbrella sellers, construction workers, farmers, gardeners and even leaflet distributors to protect themselves from many dangers, but also to plan their work better. Climate analysis helps to manage cities, better plan development and economy in areas prone to natural disasters, create efficient renewable energy or water supply systems, or protect people from the effects of extreme weather events such as heat and floods. The work of meteorologists affects many aspects of our lives.

If you would like to become a meteorologist then you will need knowledge of physics, geography, mathematics and computer science as well as patience, accuracy and regularity. You can give it a try right now. Create your own set of measuring tools, observe the weather and keep your own weather log.

Meteorological station equipment

Cut out all the items and match the pictures of the devices with their names and descriptions.



BAROMETER	THERMOMETER	RAIN GAUGE
ANEMOMETER	WIND VANE	HYGROMETER
tests the humidity of the air	examines the amount of precipitation	determines the wind direction
examines the strength of the wind	shows the pressure value	indicates temperature

Barometer

The air surrounding the Earth has a certain mass, and although it is hard to believe, it is quite heavy. Atmospheric pressure is the force with which the air presses against the Earth's surface. A barometer is used to measure the value of atmospheric pressure. The value of pressure constantly changes due to the influence of temperature and air movement. A decrease in pressure heralds a worsening of the weather. In areas where pressure is low, it is cloudy, rainy and windy, and in winter comes warming and thawing. In high-pressure areas it is sunny and cloudless, and in winter it is cold. When you notice that the barometer readings are rising, you can expect nice weather. Systematic barometer readings will give you an idea of how the weather will change. The current and forecasted pressure value is given in weather forecasts. You can also check the pressure at your home weather station or home barometer.



Home weather station, photo by only_point_five, CC BY-NC 2.0

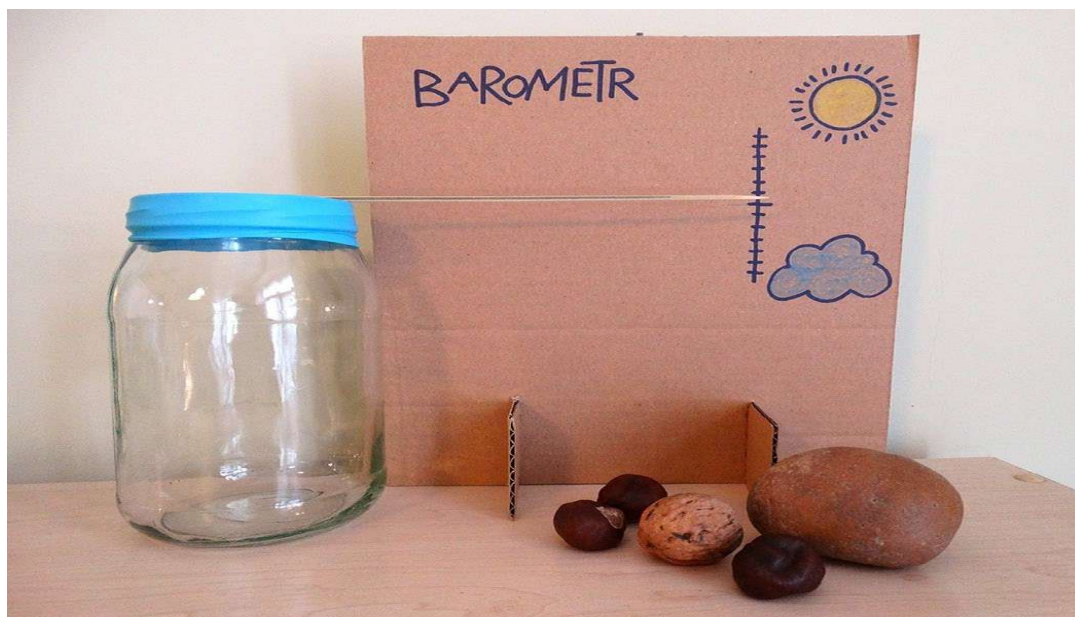
We encourage you to make a simple barometer yourself.

Materials:

Large jar or can (e.g., coffee can), balloon, rubber band, skewer stick, duct tape, cardboard, marker, scissors

Cut off the top part of the balloon and stretch it over the jar, so that something like a drum is formed. Additionally, you can put a prescription rubber band on the jar so that it holds the balloon in place. Using duct tape, glue a skewer stick to the balloon so that its end is in the center of the jar's opening, and the other - sharpened - sticks out of the jar. This will be the indicator of the barometer. Place the jar on a table and next to it put cardboard. On the cardboard, mark the point, which is indicated by the indicator-stick, which is placed horizontally. Above the marked point draw the sun and below it a cloud. Make "feet" cardboard, that is, cut from cardboard two rectangles with a height of 3-4 cm and a length of 8- 10 cm, cut from the bottom of the cardboard with a scale to a height equal to the height of the cardboard, put the feet in the holes. Set the barometer a place that is shaded throughout the day away from the radiator and other heat sources, where there are no large temperature spikes.

How this barometer works: when the pressure rises, the air puts more pressure on the surface of the balloon, which sucks inside the balloon, the indicator stick tilts so that the end of the indicator rises indicating the sun. When the pressure decreases, the balloon bulges, has the indicator falls down. It really works!



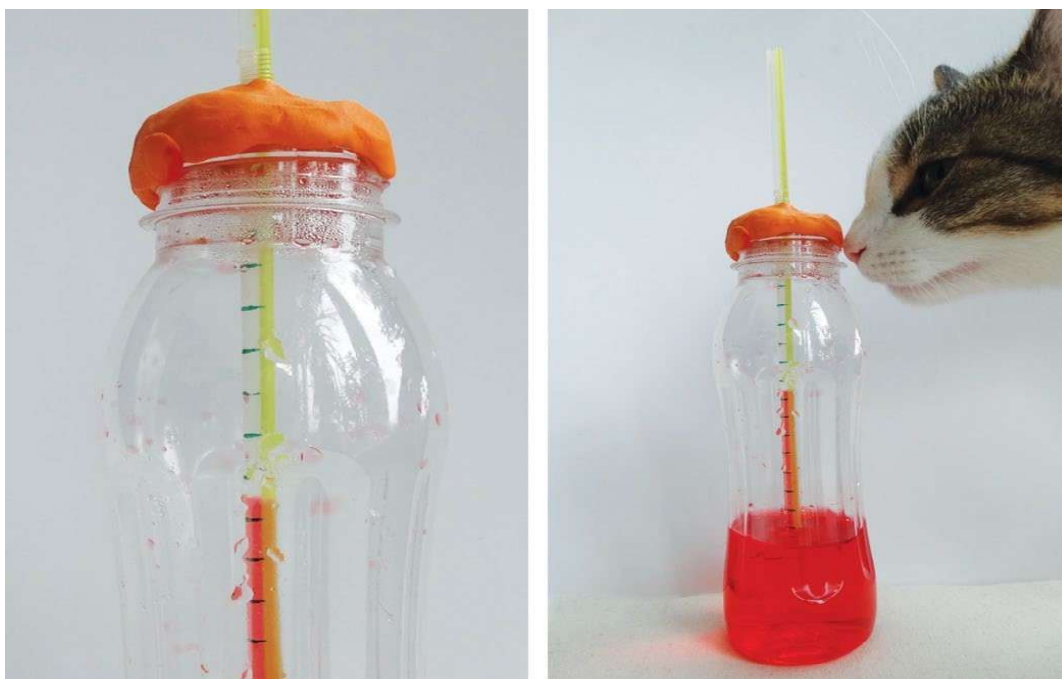
Bottle thermometer

Materials:

A jar or bottle with a plastic cap, a transparent drinking straw, food colored or inked water at room temperature (!), plasticine, a waterproof marker, a ruler.

Fill the dish to $\frac{1}{4}$ of its height with colored water at room temperature. Make a measuring tape on the straw, draw dashes at 0.5 cm intervals. Insert the straw into the bottle, to such a depth that it does not touch the bottom (a few millimeters above). See at which dash on the tube is the water level. Take out the tube and write zero at this height, write above and below the next values. Make a hole in the jar cap and put the straw through it. Cap the jar and, using plasticine, fix the straw at such a height that the zero on the scale is equal to the water level. Thoroughly seal the area around the connection between the cap and the straw with plasticine.

How it works. The thermometer uses the properties of the liquid, which under the influence of temperature increases or decreases its volume, so the level of water in the tube rises or falls. Ne same principle mercury and alcohol thermometers work.

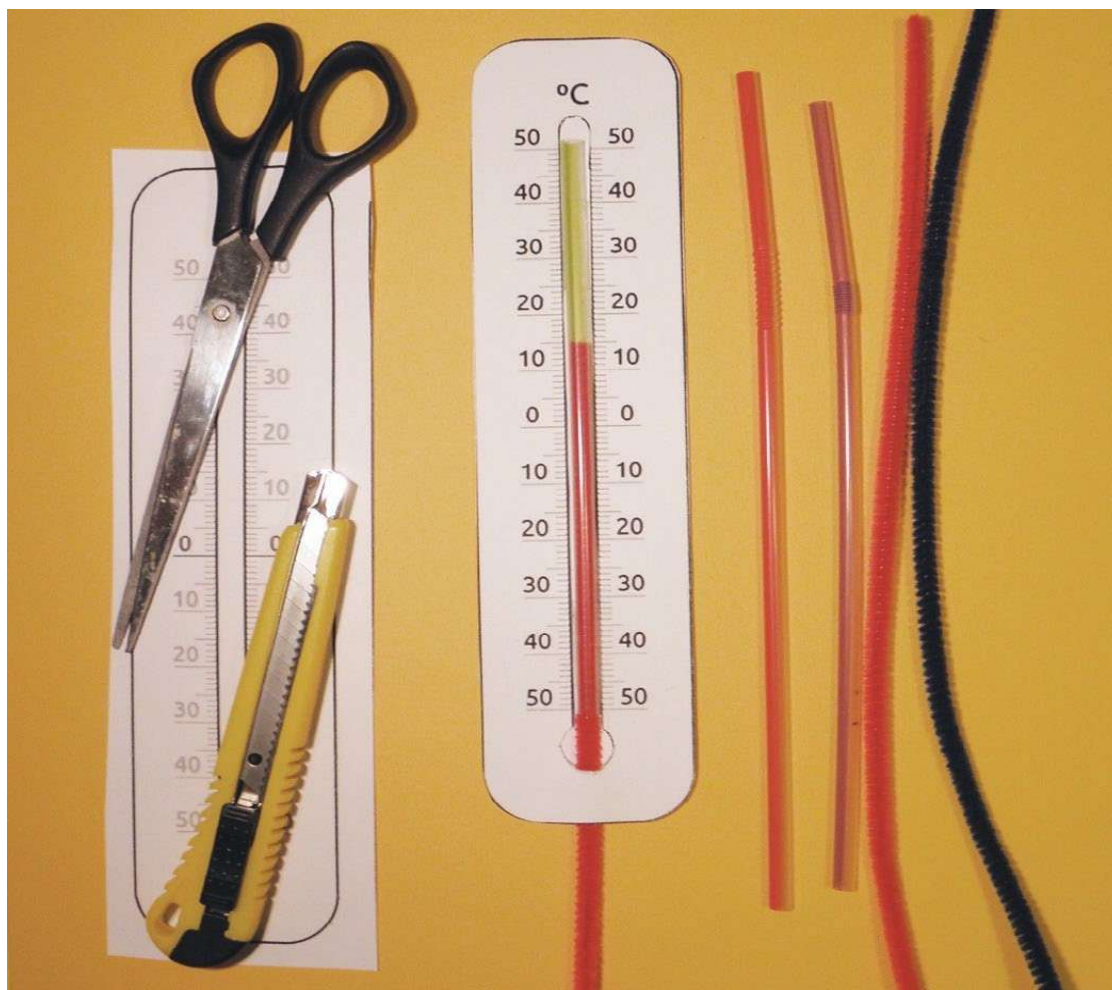


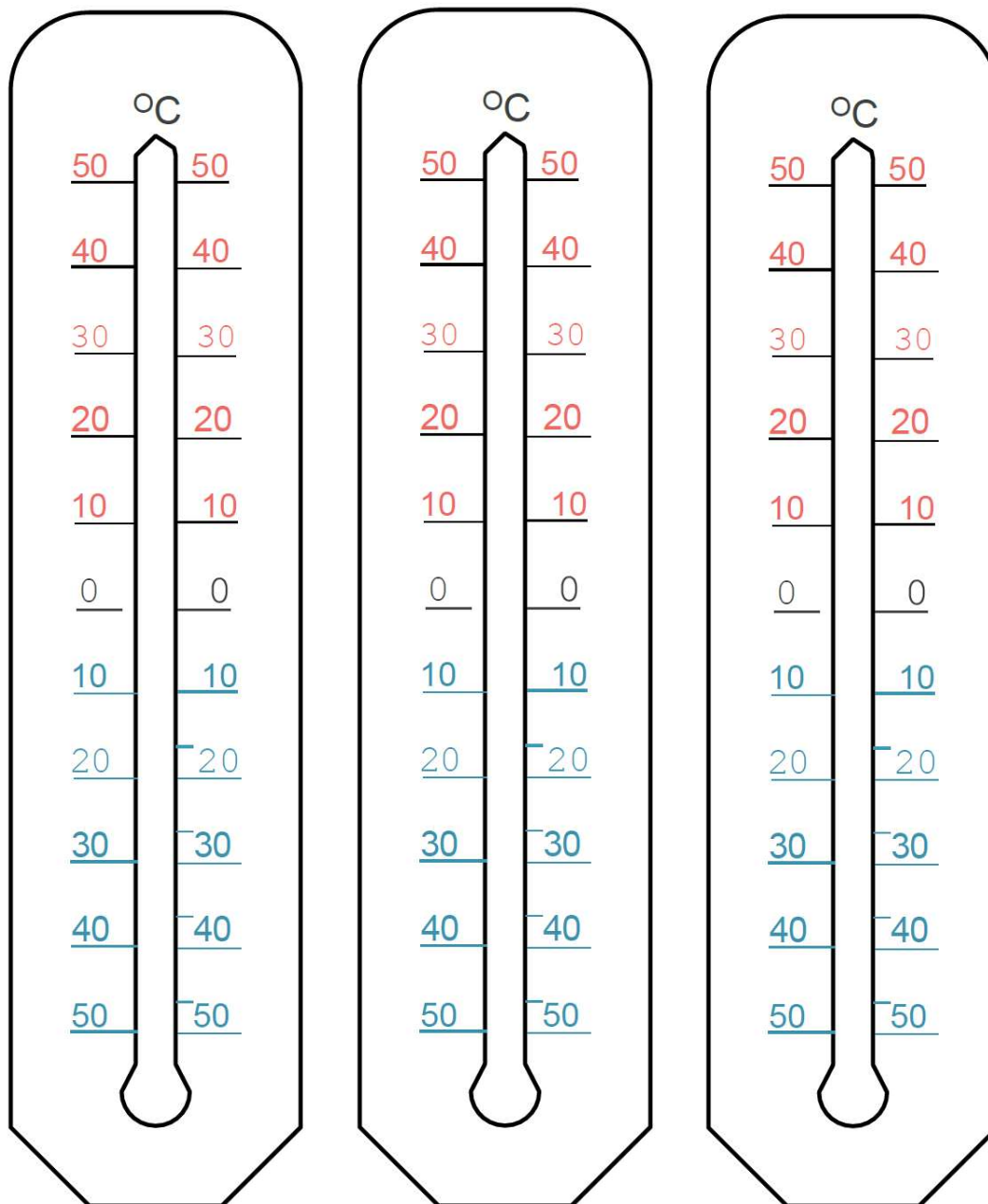
What is the temperature?

Materials:

Thermometer diagram printed on thicker paper (from the appendix), rectangle of about 7 x 25 cm of bristol or cardboard, transparent drink straw, transparent adhesive tape, creative wire of intense color, scissors, paper cutter

Cut out the printed thermometer. Use a knife to cut a hole the width of a beverage tube in the part with the measuring cup. Cut the tube to the length of the scale in the thermometer. Lay it in the middle of the cardboard or bristol and use adhesive tape to stick the tube. Then put the top of the thermometer on the tube. Glue the cardboard with the thermometer with glue or double-sided adhesive tape. Trim the cardboard to the shape of the thermometer. Insert a creative wire into the tube. You can start practicing reading the temperature.





Rain gauge

Materials:

Large PET-type plastic bottle (or tall jar and funnel), paper cutter or scissors, waterproof marker, ruler

Cut the bottle in $\frac{2}{3}$ of its height, this to make a rain tank and funnel. Put the funnel inside the bottle (if you want, you can glue the funnel to the bottle with duct tape or plasticine). Instead of a PET bottle, you can use a larger jar and a funnel. Directly on the water container or on the sticky paper tape stuck to it, draw a measure. Put the rain gauge outside and place it in such a place that nothing is covering it from any side (often the rain is jamming, so if the rain gauge was standing against a wall, the result would be unreliable if the rain was jamming from the side of the wall).

How it works. Rainwater collects in the tank, and a funnel allows it to flow in but impedes evaporation, making the result more accurate.



Windward

A weathervane is an instrument that indicates the direction of the wind (the direction from which the wind is blowing). You are sure to have seen many weathervanes on old houses, churches, offices or at the airport. Ask the children to recall what these weathervanes look like. Look at the weathervanes in photos. You can also encourage the children to track down wind indicators in their immediate area.



Mug windsock

Materials:

1 sturdy cardboard, 4 paper or plastic cups, long pin, pencil with eraser, narrow-necked bottle, wickol-type glue, plasticine, scissors

From a technical block or cardboard cut two strips of 5 x 45 cm. In the center of each strip make a slit about halfway up. Then insert one strip into the other, so that- they form a cross. Cut off the top part of the cups (so that they are shallower), glue the bottom part on each end of the paper cross. Stick a pin through the center of the made cross, then stick it into the eraser of a pencil. Place the pencil in the bottle. The wind meter is now ready. Put the wind gauge outside. Observe the rotation of the paper cross. If, despite the noticeable wind, the cross would not rotate, make a larger hole in the center of the cross.

The cups catch the force of the wind and rotate under its influence. The speed of the wind is higher the more times per minute the cross rotates. Take regular measurements. The results of the measurements will be used to discuss: are there conditions for harnessing wind energy where you live?

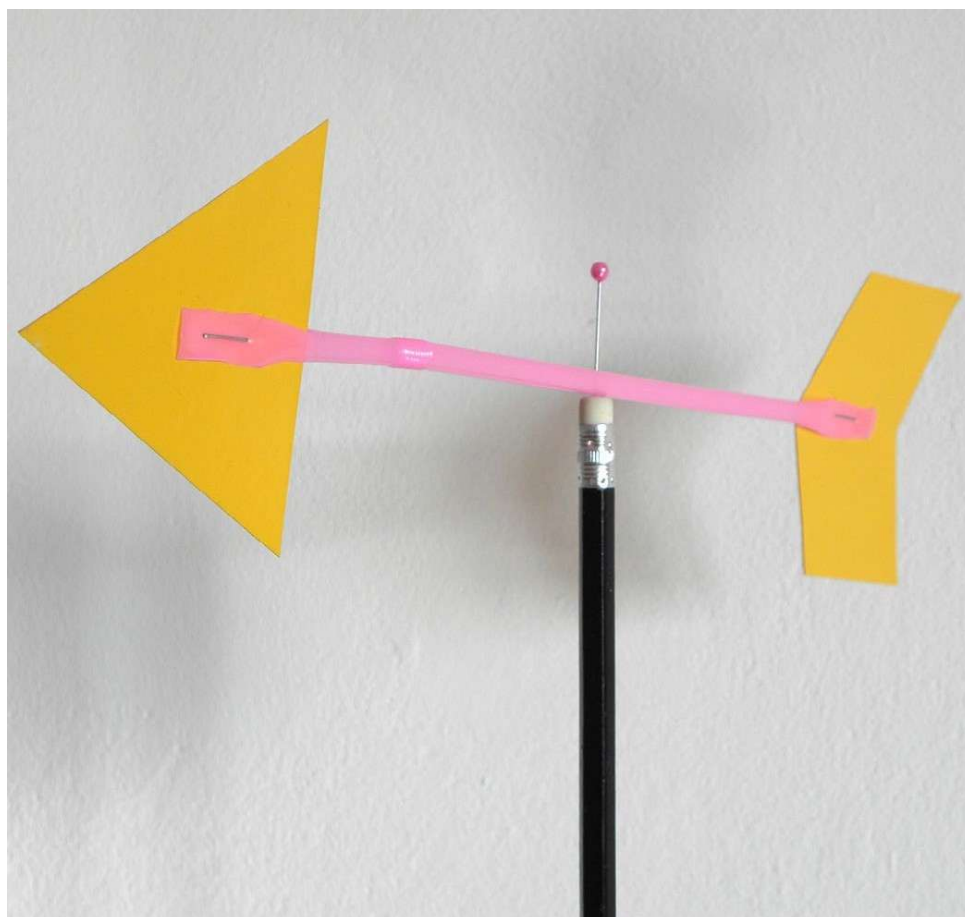


Arrow wind vane

Materials:

Pencil with eraser, straight drink tube, cardboard or a piece of flat plastic such as from toy or electronics packaging, pin, scissors, optional knife

Cut out the arrow and tail of the arrow from cardboard or plastic. You can use a template. Cut the beverage tube from both ends to a depth of about 1.5-2 cm. Make sure that the cuts are in the same line. In the notches, insert the arrow and tail. In the middle of the length of the tube, make a hole with a pin, so that the arrow and tail are aligned vertically. Fix the pin in the eraser of the pencil. Go outside and, holding the pencil vertically in your hand stretched above your head, check where the wind is blowing from. Take a compass with you to see what direction the wind is blowing from. If you want to repeat the observations, draw a wind rose on the sidewalk. Remember to make your observations of wind direction in an open area not covered by houses or tall vegetation.



Project Title	Second Life of Waste – Eco Fashion Show
Project overview/ description	"Second Life of Waste – Eco Fashion Show" is a project that encourages students to explore the idea of sustainable fashion by designing and creating clothing from waste materials. As part of this initiative, students will learn about the impact of the clothing industry on the environment and the role of recycling and upcycling. They will have the opportunity to trace the life cycle of clothing – from production to disposal – and then create their own eco-friendly collections, which they will present at a fashion show organized by the students.
Age group	6-10 years old (note: younger students will need more assistance)
Project goals	<ul style="list-style-type: none"> • Understanding the environmental impact of fashion: Learning about the waste generated by the clothing industry and the effects of fast fashion on the environment. • Promoting creative reuse: Raising students' awareness about using waste materials as valuable resources to create new products. • Supporting collaboration and innovation: Developing teamwork skills and creative problem-solving during the design and creation of clothing. • Inspiring responsible consumption and production: Encouraging students to consider sustainable practices both in fashion and everyday life.
Material needed	<ul style="list-style-type: none"> • Clothing and fabric scraps – old clothes, fabric leftovers from other projects, damaged clothing, etc. • Recyclable materials – such as plastic bottles, newspapers, cardboard, magazines, and other waste materials that could be upcycled. • Sewing supplies – needles, threads, sewing machines, pins, fabric glue, etc. • Art supplies – markers, pencils, erasers, rulers, paper for sketches. • Cutting tools – scissors, fabric cutters, utility knives (for non-fabric materials). • Stitching materials – ribbons, buttons, zippers, and other small details. • Stage setup materials – stage props, chairs, or any items needed to set up for the fashion show. • Display materials – mannequins or stands to display finished clothing. • Lights, sound, and music equipment – for the fashion show (speakers, lighting). • Posters/invitation materials – either for printing or digital design.
Digital Resources needed	<ul style="list-style-type: none"> • Presentation tools – PowerPoint, Google Slides, or any other platform for the teacher's introduction to eco-fashion and discussing the impact of fast fashion. • Project management tools – Google Docs or Trello for collaboration and idea-sharing between students. • Design software (optional) – If students want to use digital tools to create or refine their designs, software like Canva, Adobe Illustrator, or SketchUp can be used. • Invitation or promotional materials – Design tools like Canva for creating posters or digital invites for the fashion show.

	<ul style="list-style-type: none"> • Video/photography equipment – for documenting the event or creating a presentation to educate the audience about eco-fashion. • Online platforms – For sharing presentations or having discussions (Google Meet, Zoom, or Microsoft Teams if necessary for remote learning).
Proposed duration	4/5 lessons (45 minutes each) + independent student work
Class distribution	Plenary for introduction and reflection; groups for other phases
Activity Description	<p><u>1. Introduction to Eco-fashion</u></p> <ul style="list-style-type: none"> • Teacher Presentation: Start the lesson with examples of designers who use recycled and upcycled materials, such as Stella McCartney, Eileen Fisher, and Patagonia. • Discussion on the life cycle of clothing: Discuss how clothes are made, the raw materials used, and what happens when clothing is discarded. Emphasize the negative environmental impact of "fast fashion." • Interactive Analysis: Bring examples of clothing to the class and analyze their quality, durability, and the materials from which they are made. <p><u>2. Collecting Materials</u></p> <ul style="list-style-type: none"> • Material Collection: Students collect materials at home, school, or from members of the community (e.g., old clothes, fabric scraps, plastic bottles, newspapers, and other recyclable materials). • Sorting and Brainstorming: In class, students sort the collected materials and think about how to use them creatively. The teacher can advise on which materials are most suitable for creating various clothing items. <p><u>3. Design Phase</u></p> <ul style="list-style-type: none"> • Sketching and Planning: Students create sketches of their designs, focusing on the creative use of recycled materials. Their ideas may include clothing (e.g., dresses, shirts), accessories (bags, jewelry, hats), or avant-garde fashion elements. • Group Ideation: Organize a group discussion where students present their initial ideas, receive feedback, and refine their designs. Encourage collaboration to develop ideas and create more ambitious concepts. <p><u>4. Production Phase</u></p> <ul style="list-style-type: none"> • Assembling the Pieces: Depending on students' skills and available resources, they may sew, glue, or assemble their designs. Organize workshops where students learn the basics of sewing or working with waste materials. Consider inviting local artisans to demonstrate their skills.

	<ul style="list-style-type: none"> • Team Projects: For more complex designs, students can work in groups, sharing tasks such as cutting, sewing, and assembling. Teachers can assist when needed, especially with more complicated projects. <p><u>5. Event Planning</u></p> <ul style="list-style-type: none"> • Fashion Show Preparation: Plan the event, considering details such as stage setup, music, lighting, and seating arrangements. Students can also create posters or digital invitations to promote the event. • Rehearsals: Students rehearse presenting their creations, focusing on confidence and presentation skills. Emphasize the importance of showcasing the creative use of materials in their designs. <p><u>6. Final Event: Eco Fashion Show</u></p> <ul style="list-style-type: none"> • Presentation of Creations: Each student or group presents their finished designs on the runway or stage, explaining which materials were used and what inspired their design. • Audience Education: Organize a short presentation or slideshow to educate the audience about the principles of eco-fashion and explain why sustainable fashion is important. • Reflection and Feedback: After the show, conduct a discussion where students share their experiences. What challenges did they face? What did they learn about creatively reusing materials? What principles of sustainable production can they apply to other areas of life?
<p>Comments – Additional ideas</p>	<p><u>Project Outcomes:</u></p> <ul style="list-style-type: none"> • Eco-fashion Awareness: Students will better understand how the clothing industry affects the environment and why it's important to extend the life of materials. • Creative and Design Skills: Students will learn practical skills such as sketching, combining, and modifying materials, which will help them develop creativity and ingenuity. • Advocacy and Awareness: Through the fashion show, students will become ambassadors for responsible consumption, encouraging their peers and the community to make eco-friendly choices in everyday life. <p><u>Additional ideas:</u></p> <ul style="list-style-type: none"> • Invite local designers or artisans. • Provide students with a brief history of eco-fashion and its evolution. • Organize a “challenge day” where students take an old, worn-out piece of clothing (like a T-shirt or jeans) and transform it into something new and fashionable, using eco-friendly techniques.

Project Title	Compost in a Jar: Watching Food Waste Turn into Soil
Project overview/ description	The project teaches students how to transform food waste into compost through a hands-on experiment. Using simple materials, students create compost jars and observe the process of decomposition, understanding its environmental benefits. This activity connects to Sustainable Development Goal (SDG) 12 – Responsible Consumption and Production, by promoting waste reduction and sustainable practices
Age group	6-10 years old
Project goals	<ul style="list-style-type: none"> • Understand the science behind decomposition and the role of microorganisms in composting. • Develop environmental awareness and promote sustainable practices. • Foster STEM skills, including observation, data recording, and scientific inquiry.
Material needed	<ul style="list-style-type: none"> • Glass/plastic jars with lids • Vegetable and fruit scraps • Eggshells, tea/coffee grounds • Paper towels/newspapers • Small shovels (optional)
Digital Resources needed	None
Proposed duration	3 class hours (over a few weeks)
Class distribution	In small groups
Activity Description	<p>Introduction: The teacher introduces the central question: "How can we transform food waste into something useful for the environment?" Students discuss their experiences with food scraps and learn about composting and its environmental benefits.</p> <p>Preparation: Students work in groups to gather materials and set up their compost jars. The teacher explains what items are suitable for composting and guides students in layering the materials to optimize decomposition.</p> <p>Observation and Monitoring: Over several weeks, students monitor their jars, noting changes and recording observations in a compost journal. They reflect on what they see and answer weekly prompts about the decomposition process.</p> <p>Presentation: Students bring their jars back to class, compare results, and discuss their findings in groups. They create short presentations to share their experiences and insights about composting and sustainability.</p>

Comments – Additional ideas	<ul style="list-style-type: none">• Encourage students to set up a compost bin at school or in their community.• Explore advanced composting techniques like vermicomposting.
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Project Title	Harnessing Wind Energy: Building a Wind Turbine
Project overview/ description	The project introduces students to the concept of renewable energy with a focus on wind power. Students participate in a hands-on challenge to design and construct a simple wind turbine capable of lifting a weighted cup, using materials such as scrap card, pencils, and string. This activity emphasizes the potential of wind energy as a clean and sustainable power source, directly aligning with Sustainable Development Goal (SDG) 7 – Affordable and Clean Energy. Through experimentation, students explore key variables affecting wind turbine efficiency and reflect on the importance of sustainability by minimizing material waste.
Age group	8-11 years old (4th Grade)
Project goals	<ul style="list-style-type: none"> • Understand the principles of renewable energy and its importance in addressing global energy challenges. • Develop STEM skills, including design thinking, problem-solving, and teamwork. • Explore variables affecting wind turbine efficiency, such as blade size, shape, and number. • Foster sustainability by promoting the reuse of materials and reducing waste.
Material needed	<ul style="list-style-type: none"> • Scrap card • Pencils • String • Tape • Paper clips • Small cups • Weights (e.g., coins, small objects) • Scissors
Digital Resources needed	None
Proposed duration	3 class hours
Class distribution	In groups of 3-4 students
Activity Description	<p>Project-Based Learning Approach:</p> <ul style="list-style-type: none"> • Project Launch (Day 1 – 30 minutes): <ul style="list-style-type: none"> ○ The teacher introduces the central question: "How can we use wind energy to lift objects?" ○ Students discuss their prior knowledge of renewable energy and brainstorm ideas about wind power. ○ The teacher presents a brief demonstration of a simple wind turbine and explains the goals of the project. • Investigation and Planning (Day 2 – 45 minutes):

	<ul style="list-style-type: none"> ○ In groups, students explore materials provided and brainstorm design ideas for their wind turbines. ○ The teacher facilitates a discussion on key variables affecting turbine efficiency, such as blade size, shape, and number. ○ Groups sketch their designs and outline a step-by-step plan for construction. ● Building and Testing (Day 3 – 60 minutes): <ul style="list-style-type: none"> ○ Students construct their wind turbines using the provided materials, testing and iterating on their designs. ○ Each group tests their turbine by seeing how much weight it can lift using a small cup and string. ○ The teacher circulates to provide guidance and ask reflective questions. ● Presentation and Reflection (Day 3 – final 30 minutes): <ul style="list-style-type: none"> ○ Groups present their wind turbines to the class, demonstrating their functionality and explaining design choices. ○ A plenary discussion focuses on lessons learned, the importance of renewable energy, and ways to improve designs. ○ Students complete a reflective worksheet summarizing their experiences and what they learned about wind energy and sustainability.
<p>Comments – Additional ideas</p>	<ul style="list-style-type: none"> ● Extension idea: Students can test their turbines outdoors in varying wind conditions to compare results. ● Variation: If materials are limited, students can create digital designs using simulation software before building physical models. ●

Project Title	Clean Water for Everyone: Designing Solutions to Ensure Safe Drinking Water
Project overview/ description	<p>This lesson plan, focused on SDG 6: Clean Water and Sanitation, is designed for 4th-grade students and emphasizes understanding the water cycle and the importance of water filtration. Students engage in hands-on STEM activities, such as designing and building water filters using simple materials, to explore concepts like sustainability and the need for clean water. Through observation, experimentation, and collaboration, they learn how water circulates in nature and how filters work, reinforcing the critical role of clean water in everyday life and global sustainability.</p> <p>Other SDGs</p> <p>Goal 3: Good Health and Well-being</p> <ul style="list-style-type: none"> Emphasizes the direct link between access to clean water and the prevention of waterborne diseases, highlighting the health benefits of proper water filtration. <p>Goal 12: Responsible Consumption and Production</p> <ul style="list-style-type: none"> Encourages sustainable use of water resources and responsible practices to minimize water waste and pollution, fostering an understanding of water's role as a valuable and limited resource.
Age group	9-10
Project goals	Please list learning/teaching goals, focusing also on skills and/or competencies
Material needed	<p>For Hands-On Water Filter Construction</p> <ol style="list-style-type: none"> Filtration Materials: <ul style="list-style-type: none"> Gravel (various sizes). Sand (fine and coarse). Cotton balls or fabric. Activated charcoal (optional but highly effective for filtration). Coffee filters or paper towels. Containers: <ul style="list-style-type: none"> Transparent plastic bottles (cut in half to serve as the main filter structure).

	<ul style="list-style-type: none"> ○ Clear cups, jars, or beakers (to collect filtered water and observe results). <p>3. Water Sources:</p> <ul style="list-style-type: none"> ○ Tap water mixed with impurities (e.g., dirt, small leaves, food coloring) to simulate contaminated water. <p>4. Tools and Equipment:</p> <ul style="list-style-type: none"> ○ Scissors or utility knives (for preparing bottles; ensure safety precautions). ○ Spoons or scoops (for layering filtration materials).
Digital Resources needed	<p>https://www.youtube.com/watch?v=UJLMwHXUJFQ</p> <p>https://kids.nationalgeographic.com/books/article/water-wonders</p> <p>https://www.jpl.nasa.gov/edu/resources/lesson-plan/water-filtration-challenge/</p>
Proposed duration	6h
Class distribution	Groups 3-4
Activity Description	<p>Introduction (60 minutes)</p> <p>Teacher’s Role/Actions:</p> <ol style="list-style-type: none"> 1. Present the Driving Question: <ul style="list-style-type: none"> ○ "How can we design a simple water filter to ensure clean drinking water for everyone?" 2. Set the Stage with Real-World Context: <ul style="list-style-type: none"> ○ Show a short video or share a story about communities facing challenges with access to clean water. ○ Introduce the importance of clean water (SDG 6) and how filtration works as a solution. 3. Explain the Project Scope: <ul style="list-style-type: none"> ○ Students will design, build, and test water filters to clean simulated dirty water. 4. Organize Students into Groups: <ul style="list-style-type: none"> ○ Assign roles (e.g., designer, builder, recorder, presenter) within each group for collaborative learning. <p>Students’ Role/Actions:</p> <ol style="list-style-type: none"> 1. Engage in a discussion about the importance of clean water and share personal experiences or ideas.

	<ol style="list-style-type: none"> 2. Ask questions about the challenges of water filtration and the role of technology in solving real-world problems. 3. Form groups and discuss how they will work together on the project. <p>Implementation Phase 1: Research and Planning (60 minutes)</p> <p>Teacher's Role/Actions:</p> <ol style="list-style-type: none"> 1. Provide Background Knowledge: <ul style="list-style-type: none"> ○ Use visuals, videos, or simple explanations to demonstrate how natural and artificial filters work (e.g., layers of sand, gravel, and charcoal). 2. Guide Brainstorming: <ul style="list-style-type: none"> ○ Help students identify potential materials for building water filters and their purpose (e.g., sand to remove fine particles, charcoal to absorb impurities). 3. Facilitate Hypothesis Development: <ul style="list-style-type: none"> ○ Encourage each group to predict which materials will be most effective and why. <p>Students' Role/Actions:</p> <ol style="list-style-type: none"> 1. Conduct research using provided resources to understand water filtration methods. 2. Brainstorm as a group and decide on the materials and design for their water filters. 3. Develop a hypothesis about how their filter will perform based on its design. <p>Implementation Phase 2: Hands-On Filter Construction and Testing (120 minutes)</p> <p>Teacher's Role/Actions:</p> <ol style="list-style-type: none"> 1. Provide Materials and Safety Instructions: <ul style="list-style-type: none"> ○ Distribute materials (e.g., bottles, gravel, sand, cotton) and explain how to handle tools safely. 2. Guide the Experiment: <ul style="list-style-type: none"> ○ Check each group's progress, asking guiding questions such as, "Why did you choose this material for your filter?"
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	<ul style="list-style-type: none"> ○ Ensure students follow the procedure for testing their filters using simulated dirty water. <p>Students' Role/Actions:</p> <ol style="list-style-type: none"> 1. Build their water filters by layering materials in the provided containers. 2. Test their filters using the simulated dirty water and observe how clean the filtered water appears. 3. Record their observations, including the clarity of the water, amount filtered, and any issues with their design. <p>Implementation Phase 3: Reflection and Redesign (60 minutes)</p> <p>Teacher's Role/Actions:</p> <ol style="list-style-type: none"> 1. Facilitate Analysis of Results: <ul style="list-style-type: none"> ○ Lead a class discussion on which designs worked best and why. ○ Ask students to reflect on how they could improve their designs for better filtration. 2. Encourage Redesign: <ul style="list-style-type: none"> ○ Allow groups to modify their filters and test again if time permits. <p>Students' Role/Actions:</p> <ol style="list-style-type: none"> 1. Analyze their filter's effectiveness and discuss strengths and weaknesses within their groups. 2. Brainstorm improvements and, if possible, redesign their filters for a second round of testing. 3. Connect their results to real-world scenarios and propose how their designs could help communities. <p>Assessment Phase: Presentation and Peer Review (60 minutes)</p> <p>Teacher's Role/Actions:</p> <ol style="list-style-type: none"> 1. Guide Presentations: <ul style="list-style-type: none"> ○ Ask each group to present their filter design, testing process, results, and lessons learned. 2. Facilitate Peer Feedback:
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	<ul style="list-style-type: none"> ○ Encourage students to ask questions and provide constructive feedback. <p>Students' Role/Actions:</p> <ol style="list-style-type: none"> 1. Create a short presentation explaining their design and results, using diagrams or charts if possible. 2. Present their findings to the class and reflect on what they learned about water filtration and sustainability. 3. Provide feedback to their peers, fostering a collaborative learning environment.
<p>Comments – Additional ideas</p>	

Project Title	Protecting Our World: Understanding and Addressing the Effects of Acid Rain
<p>Project overview/ description</p>	<p>The lesson plan on acid rain for 4th-grade students introduces the concept by discussing the harmful effects of air pollution on the environment. Through hands-on experiments, students explore how acid rain affects natural and man-made objects, such as leaves, egg shells, and metal clips. They use vinegar to simulate acid rain and observe the damage over time, drawing connections between atmospheric pollution and the deterioration of monuments. The lesson promotes understanding of environmental impacts and encourages students to propose solutions for protecting monuments from acid rain.</p> <p>Goal 11: Sustainable Cities and Communities</p> <p>By exploring the damage acid rain causes to monuments and infrastructure, students learn about the importance of preserving cultural heritage and the role of sustainable urban practices in mitigating environmental damage.</p> <p>Goal 12: Responsible Consumption and Production</p> <p>The lesson emphasizes how human activities, like industrial emissions and excessive fossil fuel use, contribute to acid rain, encouraging students to think about sustainable consumption and production practices.</p> <p>Goal 13: Climate Action</p> <p>By discussing atmospheric pollution and its role in acid rain formation, students connect their learning to broader climate change issues, fostering awareness of the need for climate action.</p> <p>Goal 15: Life on Land</p> <p>Acid rain’s impact on vegetation and soil health ties to this goal, emphasizing the need to protect and restore ecosystems for sustainable development.</p>

Age group	9-10
Project goals	<p>Knowledge-Based Goals</p> <ul style="list-style-type: none"> ● Understand what acid rain is, how it forms, and its connection to air pollution. ● Recognize the environmental impacts of acid rain on natural and man-made objects, such as plants, monuments, and buildings. ● Identify human activities that contribute to the formation of acid rain and their environmental consequences. ● Explore how acid rain affects ecosystems and cultural heritage sites, drawing connections to global challenges like climate change. <p>Skills</p> <ul style="list-style-type: none"> ● Develop scientific inquiry skills through hands-on experiments (e.g., observing and analyzing the effects of vinegar as a simulation of acid rain). ● Foster critical thinking and problem-solving skills by proposing solutions to protect the environment and monuments from acid rain. ● Enhance collaborative skills by working in groups to conduct experiments, share observations, and discuss findings. ● Strengthen communication skills through class discussions, presentations, or written reflections on their experiment results. ● Build observation and analytical skills by comparing and interpreting changes in test objects exposed to simulated acid rain.
Material needed	<p>For the Hands-On Experiment</p> <ol style="list-style-type: none"> 1. Simulated Acid Rain Materials: <ul style="list-style-type: none"> ○ Vinegar (to simulate acid rain). ○ Water (to dilute vinegar if needed). 2. Test Objects: <ul style="list-style-type: none"> ○ Fresh leaves. ○ Eggshells (representing calcium-rich materials like marble or limestone in monuments). ○ Small metal clips or coins (representing metal structures). ○ Pieces of chalk (as a substitute for limestone). 3. Observation Containers: <ul style="list-style-type: none"> ○ Transparent cups, jars, or small trays for holding test objects and solutions. 4. Protective Equipment: <ul style="list-style-type: none"> ○ Plastic gloves and safety goggles (to ensure student safety when handling vinegar). 5. Measurement Tools: <ul style="list-style-type: none"> ○ Droppers or measuring spoons (for precise vinegar application).

	<ul style="list-style-type: none"> ○ Rulers or scales (for measuring any changes in size or weight of objects, if applicable). <p>6. Magnifying Glasses:</p> <ul style="list-style-type: none"> ○ For close observation of changes in test objects.
Digital Resources needed	<p>Videos</p> <p>https://www.youtube.com/watch?v=8BoVYJKM1uw</p> <p>https://www.youtube.com/watch?v=TsmTDUUrlq6o</p> <p>https://www.youtube.com/watch?v=sAazkClcO5E</p> <p>https://www.youtube.com/watch?v=cRKQT7DeN-E</p> <p>Webpages</p> <p>https://www.epa.gov/acidrain/effects-acid-rain</p> <p>https://www.nationalgeographic.com/environment/article/acid-rain</p> <p>https://www.usgs.gov/special-topics/water-science-school/science/acid-rain-and-water</p> <p>https://betterplaneteducation.org.uk/factsheets/acid-rain-buildings</p>
Proposed duration	7 h
Class distribution	Groups 3-4
Activity Description	<p>Introduction (60minutes)</p> <p>Teacher's Role/Actions:</p> <ol style="list-style-type: none"> 1. Present the Driving Question: <ul style="list-style-type: none"> ○ "How can we protect our environment and historical monuments from acid rain?" 2. Provide Context: <ul style="list-style-type: none"> ○ Show images or videos of acid rain's effects on forests, lakes, and monuments (digital resources). ○ Briefly explain the formation of acid rain and its link to air pollution. 3. Initiate Student Curiosity: <ul style="list-style-type: none"> ○ Facilitate a class discussion by asking open-ended questions, e.g., "What do you think happens to plants, animals, and buildings when it rains acid?" 4. Set Expectations for the Project:

- Explain that students will investigate acid rain's effects through experiments and propose solutions to protect monuments and ecosystems.

Students' Role/Actions:

1. Engage in the discussion, sharing prior knowledge and ideas.
2. Brainstorm potential questions related to acid rain they want to explore during the project.
3. Organize into small groups, each with a specific role (researcher, experiment manager, recorder, presenter).

Implementation Phase 1: Research and Planning (120 minutes)

Teacher's Role/Actions:

1. Guide students to research:
 - Provide curated resources about acid rain, its effects, and prevention methods (digital and print).
 - Facilitate a discussion on how air pollution contributes to acid rain.
2. Help students develop hypotheses:
 - Encourage each group to form a hypothesis on how acid rain might affect their chosen test object (e.g., leaves, metal, chalk).
3. Provide Experiment Instructions:
 - Introduce the experiment design and safety measures.

Students' Role/Actions:

1. Conduct group research using digital resources and take notes on acid rain effects.
2. Develop hypotheses based on their understanding.
3. Plan their experiment, deciding on materials, procedures, and observation intervals.

Implementation Phase 2: Hands-On Experiment (120 minutes)

Teacher's Role/Actions:

1. Facilitate the Experiment:
 - Provide materials (e.g., vinegar, water, test objects).
 - Monitor safety and ensure students follow the procedure.
2. Ask Guiding Questions:

- E.g., "What changes do you expect to see in your test objects?"
- "How can we measure or record these changes effectively?"

Students' Role/Actions:

1. Conduct the experiment:
 - Simulate acid rain by applying vinegar to their test objects and observing changes over time.
 - Record their observations in their science journals or digital templates.
2. Collaborate within their groups to compare findings.

Implementation Phase 3: Analysis and Reflection (60 minutes)

Teacher's Role/Actions:

1. Lead a Class Discussion:
 - Help students analyze their findings by comparing the effects of vinegar (acid rain) on different objects.
 - Ask reflective questions, e.g., "What surprised you about the results?"
2. Introduce Connections to SDGs:
 - Facilitate a discussion about how their findings relate to Goals 11, 12, 13, and 15.
3. Guide Students Toward Solutions:
 - Encourage them to brainstorm practical solutions to reduce acid rain or protect monuments.

Students' Role/Actions:

1. Analyze their findings and discuss the experiment's outcomes.
2. Connect their observations to real-world problems and the SDGs.
3. Brainstorm and document solutions, e.g., using protective coatings on monuments or reducing pollution.

Assessment Phase: Presentation and Peer Feedback (60 minutes)

Teacher's Role/Actions:

1. Facilitate Group Presentations:
 - Ask each group to present their experiment, findings, and proposed solutions to the class.

	<p>2. Provide Constructive Feedback:</p> <ul style="list-style-type: none"> ○ Highlight strengths and areas for improvement. <p>Students' Role/Actions:</p> <ol style="list-style-type: none"> 1. Present their work creatively, e.g., through posters, slides, or models. 2. Offer feedback to peers, fostering collaboration and critical thinking. 3. Reflect on the overall project, discussing what they learned and how they can apply it in their daily lives.
<p>Comments – Additional ideas</p>	

Project Title	Estimating the Age of Trees
Project overview/ description	The project focuses on teaching students how to estimate the age of trees by measuring the circumference of the trunk. It provides a hands-on approach to math while fostering environmental awareness. This activity aligns with Sustainable Development Goal (SDG) 15 – Life on Land, as it promotes understanding and appreciation of the natural world.
Age group	6-10 years old
Project goals	<ul style="list-style-type: none"> • Develop practical math skills through real-world application. • Enhance environmental awareness and appreciation of nature. • Foster teamwork and collaboration during outdoor activities. • Build measurement and data interpretation competencies. •
Material needed	<ul style="list-style-type: none"> • Measuring tape • Whiteboard • Markers • Worksheets for recording measurements • Notebooks or paper for notes
Digital Resources needed	None
Proposed duration	4 class hours
Class distribution	In pairs
Activity Description	<p>Project-Based Learning Approach:</p> <ul style="list-style-type: none"> • Project Launch (Day 1 – 30 minutes): <ul style="list-style-type: none"> ○ The teacher introduces the central question: "How can we estimate the age of trees in our environment?" ○ Students discuss what they already know about trees, growth, and measurements, brainstorming ideas and questions related to the topic. ○ The teacher explains key concepts such as height, length, and the radius of a circle using visual aids. • Investigation and Skill Development (Day 2 – 45 minutes): <ul style="list-style-type: none"> ○ Students work in pairs to measure objects in the classroom, practicing height, length, and diameter measurements while recording results on worksheets. ○ The teacher explains the formula for calculating tree age (diameter $\times \pi \approx$ circumference) and facilitates guided practice with sample calculations. ○ Students identify materials needed for their outdoor investigation and plan how they will document their findings.

	<ul style="list-style-type: none"> ● Fieldwork and Analysis (Day 3 – 60 minutes): <ul style="list-style-type: none"> ○ Students head to the schoolyard or nearby woodland to conduct their investigation. ○ Each pair measures the diameter of three trees, records data on worksheets, and calculates the circumference and approximate age of the trees. ○ Back in the classroom, students compile their findings, analyze results, and create a visual representation (e.g., bar graph or summary table) of their data. ● Presentation and Reflection (Day 4 – final 30 minutes): <ul style="list-style-type: none"> ○ Pairs present their findings to the class, discussing the methods used and any challenges encountered. ○ A plenary discussion highlights the importance of trees, accuracy in scientific measurement, and the role of math in understanding the natural world. ○ Students reflect on what they learned and suggest ways to extend the project, such as measuring trees in other locations or estimating the age of other natural elements.
<p>Comments – Additional ideas</p>	

Project Title	Drama Activity: Reduce, Reuse, Recycle
<p>Project overview/ description</p>	<p>This project engages participants in creating and performing a short play based on the fable <i>The Ant and the Grasshopper</i>, reinterpreted with a focus on sustainability. Using only recycled and repurposed materials, participants design costumes, props, and sets to creatively retell the story with a message about reducing waste, reusing resources, and recycling.</p> <p>The activity combines storytelling, crafting, and teamwork to emphasize the importance of environmental responsibility and preparation for a sustainable future. Through this hands-on and collaborative process, participants develop practical skills, creativity, and environmental awareness.</p> <p>Connection to the Sustainable Development Goals (SDGs)</p> <p>This project aligns with the following SDGs:</p> <p>SDG 4: Quality Education</p> <ul style="list-style-type: none"> ○ Promotes experiential and interdisciplinary learning, combining arts, environmental education, and teamwork. ○ Encourages creative problem-solving and critical thinking through crafting and performance activities. <p>SDG 12: Responsible Consumption and Production</p> <ul style="list-style-type: none"> ○ Teaches the importance of sustainable practices by using recycled materials for costumes and props. ○ Highlights the benefits of reducing waste and reusing resources in everyday life. <p>SDG 13: Climate Action</p> <ul style="list-style-type: none"> ○ Raises awareness of individual responsibility in combating climate change through sustainable choices. ○ Inspires participants to act locally by reducing waste, which contributes to global environmental efforts. <p>SDG 15: Life on Land</p> <ul style="list-style-type: none"> ○ Addresses the consequences of waste on ecosystems and biodiversity, connecting the story's moral to environmental ethics. <p>This project not only fosters creativity and communication skills but also empowers participants to take actionable steps toward a sustainable lifestyle, contributing to a better future for the planet.</p>
<p>Age group</p>	<p>Mixed group 6 to 10 years old</p>

<p>Project goals</p>	<p>Learning Goals</p> <p>Understanding Sustainability:</p> <ul style="list-style-type: none"> ○ Goal: Teach the importance of reducing, reusing, and recycling materials to promote environmental sustainability. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Awareness of sustainable practices. ▪ Recognizing how creative reuse of materials reduces waste. <p>Appreciating Storytelling as an Educational Tool:</p> <ul style="list-style-type: none"> ○ Goal: Use storytelling and drama to convey messages about sustainability and teamwork. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Understanding how narratives can educate and inspire behavioral change. ▪ Analyzing themes and adapting traditional stories with new perspectives. <p>Promoting Teamwork and Collaboration:</p> <ul style="list-style-type: none"> ○ Goal: Foster cooperative skills through scriptwriting, designing, and performing as a group. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Effective communication and active listening. ▪ Delegation and role-sharing in collaborative environments. <p>Encouraging Creativity and Innovation:</p> <ul style="list-style-type: none"> ○ Goal: Inspire students to creatively repurpose recycled materials for costumes, props, and stage design. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Crafting and artistic design using unconventional materials. ▪ Thinking innovatively to solve design challenges. <p>Enhancing Communication Skills:</p>
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	<ul style="list-style-type: none"> ○ Goal: Develop public speaking and storytelling abilities through dramatic performance. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Expressive verbal and non-verbal communication. ▪ Effective dialogue delivery and stage presence. <p>Building Problem-Solving Skills:</p> <ul style="list-style-type: none"> ○ Goal: Address challenges in script adaptation, material usage, and stage coordination. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Critical thinking and decision-making. ▪ Adapting designs and performance methods when faced with constraints. <p>Raising Cultural and Ethical Awareness:</p> <ul style="list-style-type: none"> ○ Goal: Use the story’s moral themes to explore responsibility, community, and environmental ethics. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Understanding the value of preparation and responsibility in individual and collective contexts. ▪ Reflecting on ethical choices and their consequences. <p>Teaching Goals</p> <p>Guiding the Creative Process:</p> <ul style="list-style-type: none"> ○ Goal: Facilitate students in adapting a familiar fable into a play with an environmental message. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Encouraging student-driven script development and story interpretation. ▪ Providing constructive feedback during rehearsals and crafting sessions. <p>Providing Practical Knowledge:</p> <ul style="list-style-type: none"> ○ Goal: Teach safe and effective methods for crafting with recycled materials.
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	<p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Demonstrating crafting techniques and safe tool use. ▪ Sharing insights about sustainable practices in daily life. <p>Fostering Reflection and Evaluation:</p> <ul style="list-style-type: none"> ○ Goal: Encourage participants to assess their learning and group dynamics after the performance. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Facilitating discussions on project outcomes and lessons learned. ▪ Promoting self-assessment and constructive peer feedback. <p>Encouraging Cross-Disciplinary Learning:</p> <ul style="list-style-type: none"> ○ Goal: Integrate drama, art, and environmental education in a cohesive learning experience. <p>Skills/Competencies:</p> <ul style="list-style-type: none"> ▪ Connecting creative expression with real-world issues. ▪ Encouraging interdisciplinary thinking and application of knowledge. <p>By the end of the project, participants will have developed an understanding of sustainability, improved their creative and collaborative skills, and gained confidence in their ability to communicate important messages through artistic expression.</p>
Material needed	Paper, fabric, plastic bottles, scrap paper, paint, polystyrene tablets to reuse, boxes, cardboard, recycled materials.
Digital Resources needed	none
Proposed duration	5,5 h
Class distribution	Plenary 15 children
Activity Description	<p>Introduction (Duration: 1 Hour)</p> <p>Overview of the Project (15 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Introduce the project and explain how it connects to the themes of sustainability and the fable <i>The Ant and the Grasshopper</i>.

	<ul style="list-style-type: none"> ○ Action: Explain that the participants will create a short play based on the fable, highlighting the importance of reducing, reusing, and recycling materials. <p>Discussion of Themes (15 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Explore the key themes of the play: hard work, preparation, and sustainability. ○ Action: Facilitate a group discussion to reinterpret the story with a sustainability focus. For example, the ant represents responsible recycling and preparation, while the grasshopper learns about reducing waste and reusing materials. <p>Material Overview (30 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Introduce the available recycled materials (e.g., fabric scraps, cardboard, plastic bottles, paper). ○ Action: Discuss how these materials can be used to create costumes, props, and stage settings. Show examples to spark creativity. <p>Implementation (Duration: 4 Hours) Phase 1: Script Development and Roles Assignment (1 Hour) Rewriting the Fable (30 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Adapt the story of <i>The Ant and the Grasshopper</i> to focus on sustainability. ○ Action: Work as a group or in small teams to write dialogue and scenes emphasizing the themes of reducing, reusing, and recycling. <p>Assigning Roles (30 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Distribute roles among participants. ○ Action: Assign characters (e.g., ant, grasshopper, supporting roles), narrators, and backstage roles like costume and prop designers. <p>Phase 2: Creating Costumes and Props (1.5 Hours) Brainstorming Design Ideas (15 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Plan how to use recycled materials to create costumes and props. ○ Action: Each group sketches simple designs for their items using recycled materials like cardboard for hats or plastic bottles for accessories. <p>Crafting Costumes and Props (1 Hour):</p>
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	<ul style="list-style-type: none"> ○ Objective: Create the costumes and props needed for the play. ○ Action: Participants work in teams to craft items using recycled materials. Examples include: <ul style="list-style-type: none"> ▪ Cardboard cut-outs for props like tools or food. ▪ Fabric scraps for costumes like the ant's hardworking attire. ▪ Plastic bottles or paper for musical instruments or decorations. <p>Testing and Adjustments (15 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Ensure costumes and props are functional and visually appealing. ○ Action: Test each item for durability and adjust as needed. <p>Phase 3: Rehearsals (1.5 Hours)</p> <p>Blocking and Scene Rehearsal (1 Hour):</p> <ul style="list-style-type: none"> ○ Objective: Practice stage movements and dialogue delivery. ○ Action: Rehearse scenes to ensure smooth transitions and coordination between characters. Use recycled materials as stage markers to simulate the set. <p>Final Dress Rehearsal (30 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Conduct a full run-through of the play with costumes, props, and narration. ○ Action: Perform the play from start to finish, making notes of any final adjustments needed. <p>Assessment (Duration: 30 Minutes)</p> <p>Performance and Showcase (15 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Present the final play to an audience, such as peers or family members. ○ Action: Perform the play, highlighting the themes of sustainability and the creative use of recycled materials. <p>Reflection and Feedback (15 minutes):</p> <ul style="list-style-type: none"> ○ Objective: Reflect on the process and outcomes of the project. ○ Action: Facilitate a group discussion where participants share what they learned about sustainability, teamwork,
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	<p>and creative problem-solving. Gather feedback on the performance and design.</p> <p>This timeline allows participants to explore sustainability creatively through drama, learn about teamwork and recycling, and reflect on their efforts to promote environmental awareness.</p> <p>Teacher’s Role/Actions Facilitating Understanding and Engagement:</p> <ul style="list-style-type: none"> ○ Introduce the project, explaining the goals and connection to sustainability. ○ Guide a discussion about the themes of <i>The Ant and the Grasshopper</i> and how they relate to reducing, reusing, and recycling. ○ Encourage active participation and ensure everyone understands their role in the activity. <p>Providing Materials and Tools:</p> <ul style="list-style-type: none"> ○ Gather and organize recycled materials (cardboard, fabric scraps, plastic bottles, etc.) for costumes, props, and set design. ○ Demonstrate safe crafting techniques, including how to cut, glue, and assemble materials. <p>Guiding Script Development and Role Assignment:</p> <ul style="list-style-type: none"> ○ Facilitate a brainstorming session for adapting the fable into a sustainability-focused play. ○ Support students in writing dialogue and organizing scenes while encouraging their creativity. ○ Help assign roles based on students’ interests and skills, ensuring a balance between on-stage and backstage tasks. <p>Supporting Creativity and Collaboration:</p> <ul style="list-style-type: none"> ○ Provide suggestions and troubleshooting during costume and prop creation. ○ Offer constructive feedback during rehearsals, helping students refine their performances and coordination. ○ Encourage teamwork, mediating conflicts and ensuring equal participation. <p>Encouraging Reflection and Discussion:</p> <ul style="list-style-type: none"> ○ Lead a reflection session after the performance, asking questions about what students learned regarding sustainability and collaboration.
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	<ul style="list-style-type: none"> ○ Provide feedback on the overall process, focusing on successes and areas for improvement. <p>Students’ Role/Actions</p> <p>Engaging with Themes and Ideas:</p> <ul style="list-style-type: none"> ○ Participate in discussions about the moral of <i>The Ant and the Grasshopper</i> and its connection to sustainability. ○ Contribute ideas to adapt the story into a play that emphasizes reducing waste and environmental responsibility. <p>Collaborating on Scriptwriting and Planning:</p> <ul style="list-style-type: none"> ○ Work in groups to develop the script, creating dialogue and scenes that reflect the sustainability theme. ○ Help organize the play’s structure, including deciding how props and costumes will be integrated into the story. <p>Creating Costumes, Props, and Sets:</p> <ul style="list-style-type: none"> ○ Use recycled materials to craft items needed for the performance, such as character costumes, scenery, or handheld props. ○ Collaborate with peers to ensure designs are functional and align with the play’s vision. <p>Rehearsing and Performing:</p> <ul style="list-style-type: none"> ○ Actively rehearse scenes, practicing dialogue delivery, stage movements, and character interactions. ○ Perform their assigned roles during the final presentation, using their props and costumes effectively. <p>Reflecting on the Experience:</p> <ul style="list-style-type: none"> ○ Share insights about the challenges and successes of using recycled materials creatively. ○ Discuss how the project enhanced their understanding of sustainability and teamwork. ○ Provide feedback on the process and consider ways to apply the lessons learned in real life. <p>This division of roles ensures a balanced and interactive learning experience, empowering both teachers and students to actively contribute to the success of the project.</p>
<p>Comments – Additional ideas</p>	

Project Title	Decomposing Awareness
Project overview/ description	This project introduces students to the concept of decomposition and its role in the environment. Students learn how long it takes for various types of waste to decompose, the impact of non biodegradable items, and explore sustainable alternatives. By participating in interactive games, reflections, and creating a Decomposition Awareness Poster, students gain insight into environmental sustainability and practical solutions.
Age group	Targeted for 5 th graders (Ages 9-10 years old)
Project goals	<p>1. Cognitive Goals:</p> <ul style="list-style-type: none"> • Understand the concept of decomposition and the factors that influence it. • Learn decomposition times for various materials (organic, plastic, metal, glass). • Identify sustainable alternatives to reduce waste. <p>2. Skills Developed:</p> <ul style="list-style-type: none"> • Collaboration through group activities. • Critical thinking by analyzing decomposition times and sustainability solutions. • Creativity in designing educational posters. <p>3. Behavioral Goals:</p> <p>Inspire students to adopt sustainable habits, such as recycling and reducing single-use plastics.</p>
Material needed	<ul style="list-style-type: none"> • Paper, pens, markers, colored pencils • Poster boards • Printed images of waste items (e.g., plastic bottles, banana peels, cans) • Whiteboard and markers • Reference materials for decomposition times (charts or infographics)
Digital Resources needed	Images for inspiration (e.g., decomposition timelines)
Proposed duration	2 days (2 Hours per day)
Class distribution	<p>Plenary: Introduction and discussion.</p> <ul style="list-style-type: none"> • Groups: 5 groups (4-5 students each) to create sections of the poster.
Activity Description	<p>1. Introduction Discussion (30 minutes)</p> <ul style="list-style-type: none"> • Ask students: "What happens to trash after we throw it away?" • Explain decomposition and the importance of sustainability. • Introduce decomposition times for common waste materials. <p>2. Game: "Guess the Decomposition Time" (45 minutes)</p> <ul style="list-style-type: none"> • Students, in groups, guess how long each item takes to decompose (e.g., banana peel, plastic bottle, aluminum can). • Reveal the actual decomposition time and discuss why certain materials take longer. <p>3. Reflection and Sustainability Ideas (45 minutes)</p> <ul style="list-style-type: none"> • Ask students: "What surprised you the most?": "How can we reduce waste in our daily lives?" • Discuss alternatives for items that take a long time to decompose (e.g., reusable bottles, cloth bags).

	<p>4. Creation of the "Decomposition Awareness Poster" (2 hours)</p> <p>Students are divided into 5 groups:</p> <p>Group 1: Organic waste (natural items)</p> <p>Group 2: Plastic materials</p> <p>Group 3: Metal items</p> <p>Group 4: Glass materials</p> <p>Group 5: Non-biodegradable items</p> <p>Each group has to draw examples of their waste items, write the decomposition times, include a "GREEN Choice" alternative to replace the waste item (e.g., cloth bag instead of plastic bag) and combine all sections</p> <p>Teacher's Role</p> <p>As the facilitator the teacher sets the stage by introducing the concept of decomposition and its environmental importance in an engaging and approachable way. By asking thought-provoking questions like "What happens to trash after we throw it away?", the teacher encourages curiosity and critical thinking among the students. During the "Guess the Decomposition Time" game, the teacher guides the conversation, revealing facts in an interactive manner that surprises and educates the class.</p> <p>Throughout the activity, the teacher supports group work, moving around the classroom to provide feedback, answer questions, and encourage collaboration.</p> <p>While students work on their posters, the teacher acts as a mentor, helping them connect their ideas and ensuring each group focuses on their task while leaving room for creativity. Most importantly, the teacher creates a positive atmosphere where students feel empowered to share their thoughts and ideas without hesitation.</p> <p>Students' Role</p> <p>The students take on an active and engaged role throughout the project. During the introduction and discussion, they become critical thinkers, asking questions and reflecting on their daily habits. In the "Guess the Decomposition Time" game, they work together in teams, debating and predicting answers with excitement. Their reactions-whether astonishment or curiosity-drive further discussions and help connect the lesson to real-life situations.</p> <p>When it's time to create the Decomposition Awareness Poster, students take ownership of their learning. They collaborate within their groups, sharing ideas, drawing examples, and brainstorming sustainable alternatives. Some take on leadership roles, organizing the group's work, while others focus on the creative elements, ensuring their message is clear and impactful. As they bring their posters to life, the students build confidence and pride in their work, knowing they are contributing to raising awareness about an important environmental issue.</p> <p>By the end of the activity, students not only gain knowledge but also leave feeling inspired and motivated to make small, positive changes in their own lives and to encourage others to do the same.</p>
<p>Comments – Additional ideas</p>	<p>The students responded to the activity with great enthusiasm and curiosity. During the "Guess the Decomposition Time" game, there were</p>

	<p>moments of surprise and amazement, particularly when they discovered how long some materials, like plastic bottles or glass, take to decompose. Their reactions were filled with questions like, "How can that last so long?" and "What can we use instead?", showing a genuine interest in understanding the environmental impact of everyday waste.</p> <p>As we moved into the reflection phase, the conversation turned thoughtful and proactive. The students eagerly shared ideas for how they could make changes in their own lives, such as using reusable water bottles, bringing cloth bags for groceries, and even encouraging their families to recycle more. It was clear they felt empowered to make a difference.</p> <p>The poster creation was where their creativity and teamwork really shone. Each group worked collaboratively, proudly sharing their section of the poster. They were excited to see their work come together as a complete project, and many students expressed a desire to share what they learned with their friends, siblings, and even teachers. Some even suggested presenting their posters to the rest of the school to inspire others to take action.</p> <p>Overall, the activity sparked curiosity, reflection, and a sense of responsibility among the students. They left the classroom feeling proud of their work and motivated to make small but impactful changes in their daily lives.</p>
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Project Title	Flowerpots with honey and yogurt jars
<p>Project overview/ description</p>	<p>This project encourages participants to creatively reuse old honey and yogurt jars to create personalized flowerpots while learning about upcycling and sustainable practices. Participants decorate the jars using recycled materials and plant seeds, fostering an understanding of environmental responsibility and the importance of greenery in urban and personal spaces.</p> <p>Through this hands-on activity, participants enhance their creativity, fine motor skills, and awareness of how small actions can contribute to environmental sustainability.</p> <p>Connection to the Sustainable Development Goals (SDGs)</p> <p>SDG 12: Responsible Consumption and Production</p> <ul style="list-style-type: none"> ○ Promotes upcycling by encouraging the reuse of jars and recycled materials. ○ Raises awareness about reducing waste and adopting sustainable consumption habits. <p>SDG 13: Climate Action</p> <ul style="list-style-type: none"> ○ Highlights the role of plants in combating climate change by absorbing CO₂ and improving air quality. ○ Encourages participants to take small-scale, actionable steps toward environmental preservation. <p>SDG 15: Life on Land</p> <ul style="list-style-type: none"> ○ Promotes biodiversity and a connection to nature through planting and nurturing seeds. ○ Reinforces the importance of green spaces for ecological balance and well-being. <p>SDG 4: Quality Education</p> <ul style="list-style-type: none"> ○ Combines practical, creative, and environmental education in a single activity. ○ Fosters critical thinking and problem-solving while reinforcing the importance of sustainable habits. <p>This project provides a fun and engaging way to combine creative expression with learning about sustainability and environmental care, directly supporting key global development goals.</p>
<p>Age group</p>	<p>7-8</p>
<p>Project goals</p>	<p>Promote sustainability awareness; Foster creativity and personal Expression; Enhance practical skills; Support learning of Sustainable Development Goals (SDGs); Develop critical thinking and problem-solving skills</p>
<p>Material needed</p>	<p>Glass jars (one per kid), labels, paint, brushes, soil or cotton buds, water, seeds.</p>

Digital Resources needed	none
Proposed duration	1 hour
Class distribution	Plenary/Individual tasks (proposed 19 pupils)
Activity Description	<p>Introduction (Duration: 10 Minutes) Overview of the Activity (5 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Explain the goal of transforming recycled honey and yogurt jars into flowerpots and planting seeds. ○ Action: Highlight the importance of upcycling and growing plants to promote sustainability and environmental care. <p>Materials Introduction (5 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Familiarize participants with the materials: jars, paint, brushes, soil, seeds, and decorative supplies if needed. ○ Action: Provide safety instructions for handling glass jars, paint, and soil. <p>Implementation (Duration: 45 Minutes) Phase 1: Preparing and Decorating Jars (25 Minutes) Cleaning and Base Prep (5 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Ensure jars are clean and ready for decoration. ○ Action: Remove labels, clean jars with a damp cloth, and dry them. <p>Design and Decoration (20 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Create visually appealing flowerpots or clear jars and labels using available materials. <p>Action:</p> <ul style="list-style-type: none"> ▪ Apply paint or markers to create colorful designs on the jars. ▪ Attach ribbons, stickers, or other decorations using glue. ▪ Allow a few moments for the decorations to dry as participants prepare for the next step. <p>Phase 2: Planting Seeds (20 Minutes) Adding Soil (10 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Fill the jars to create a suitable environment for planting. <p>Action:</p>

	<ul style="list-style-type: none"> ▪ Add a small layer of pebbles or stones for drainage (optional). ▪ Fill the jar with soil, leaving about 1–2 inches of space at the top. <p>Planting the Seeds (10 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Plant seeds in the prepared jars. <p>Action:</p> <ul style="list-style-type: none"> ▪ Make small holes in the soil/cotton buds with fingers or a stick. ▪ Place seeds in the holes and cover them lightly with soil. ▪ Sprinkle a small amount of water over the soil. <p>Assessment (Duration: 5 Minutes)</p> <p>Reflection and Showcase (5 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Reflect on the project and its environmental impact. <p>Action:</p> <ul style="list-style-type: none"> ▪ Participants present their decorated flowerpots and share what they learned about upcycling and plant care. ▪ Discuss how reusing materials and planting seeds can contribute to sustainability. <p>Total Duration: 1 Hour</p> <p>This timeline ensures participants engage in both creative and hands-on activities, making the project enjoyable and meaningful within the given timeframe.</p> <p>Teacher’s Role/Actions</p> <p>Introduction:</p> <ul style="list-style-type: none"> ○ Present the activity, explaining the objectives and its connection to sustainability and upcycling. ○ Show examples of decorated flowerpots to inspire students and explain how to handle materials like paint, soil, and seeds safely. <p>Providing Materials:</p>
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	<ul style="list-style-type: none"> ○ Prepare and distribute clean jars, paint, brushes, soil, seeds, and decorative supplies. ○ Ensure that each student has access to all necessary tools and materials. <p>Guiding the Process:</p> <ul style="list-style-type: none"> ○ Demonstrate key steps, such as decorating the jars, adding soil, and planting seeds. ○ Provide tips on effective decoration techniques and proper planting methods. ○ Monitor the activity, offering assistance and troubleshooting as needed. <p>Facilitating Reflection:</p> <ul style="list-style-type: none"> ○ Lead a short reflection session at the end of the activity, encouraging students to share their designs and insights about upcycling and plant care. ○ Provide constructive feedback to students on their creativity and effort. <p>Students' Roles/Actions Engaging in the Activity:</p> <ul style="list-style-type: none"> ○ Actively listen to the teacher's instructions and ask questions if needed. ○ Participate in the discussion about sustainability and the importance of reusing materials. <p>Creative Jar Decoration:</p> <ul style="list-style-type: none"> ○ Use paint, markers, and decorative supplies to design and personalize their flowerpots. ○ Work carefully to ensure the designs are both creative and functional. <p>Planting Seeds:</p> <ul style="list-style-type: none"> ○ Follow instructions to add soil and plant seeds in their decorated jars. ○ Handle materials responsibly, ensuring the seeds are properly covered and the jars are cleanly filled. <p>Reflecting on the Process:</p> <ul style="list-style-type: none"> ○ Present their completed flowerpots and share their design inspirations with the group.
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	<ul style="list-style-type: none"> ○ Discuss what they learned about recycling and the environmental benefits of growing plants. <p>This division of roles ensures the teacher facilitates the process effectively while students take an active part in learning, creating, and reflecting on their contributions.</p>
Comments – Additional ideas	

Project Title	Pick up trash and recycling old shoes boxes to make a wardrobe
Project overview/ description	<p>This engaging project combines hands-on creativity with language acquisition, as participants create a miniature wardrobe from recycled shoeboxes and paper clothing cutouts. The activity focuses on learning Spanish vocabulary for clothes and accessories while promoting sustainability by repurposing materials that might otherwise be discarded and that the students found abandoned in the street or among the rubbish at home. Students decorate their wardrobes, craft paper clothing items, and label them in Spanish, reinforcing their understanding of vocabulary in a fun and interactive way.</p> <p>Connection to the Sustainable Development Goals (SDGs)</p> <p>SDG 12: Responsible Consumption and Production</p> <ul style="list-style-type: none"> ○ Encourages the reuse of materials, reducing waste and promoting sustainable practices. ○ Demonstrates how creative projects can integrate recycling and resourcefulness. <p>SDG 4: Quality Education</p> <ul style="list-style-type: none"> ○ Provides an engaging and practical approach to language learning. ○ Supports the development of fine motor skills, creativity, and cultural awareness. <p>SDG 17: Partnerships for the Goals</p> <ul style="list-style-type: none"> ○ Promotes collaboration and teamwork among students, fostering a sense of shared purpose. ○ Emphasizes the value of global languages like Spanish for cross-cultural understanding and communication. <p>This project not only enhances language skills but also instills sustainable habits and global awareness, contributing to a holistic educational experience aligned with the SDGs.</p>
Age group	8-9 years old
Project goals	<p>Learning Goals</p> <p>Language Skills:</p> <ul style="list-style-type: none"> ○ Learn and memorize Spanish vocabulary related to clothing and accessories (e.g., camisa, pantalón, vestido). ○ Practice correct pronunciation and sentence formation using clothing vocabulary.

	<p>Sustainability Awareness:</p> <ul style="list-style-type: none"> ○ Understand the value of reusing and repurposing materials to reduce waste. ○ Recognize the connection between creative activities and sustainable practices. <p>Cultural Competence:</p> <ul style="list-style-type: none"> ○ Gain exposure to the Spanish language and its application in everyday scenarios, fostering cross-cultural understanding. <p>Creative Expression:</p> <ul style="list-style-type: none"> ○ Develop the ability to creatively design and personalize a project using recycled materials. <p>Teaching Goals</p> <p>Facilitate Active Learning:</p> <ul style="list-style-type: none"> ○ Guide students in applying Spanish vocabulary in a practical and engaging way. ○ Provide clear instructions and demonstrations for the crafting process. <p>Promote Collaboration:</p> <ul style="list-style-type: none"> ○ Encourage peer-to-peer interaction and teamwork in completing the project and practicing language skills. <p>Encourage Critical Thinking:</p> <ul style="list-style-type: none"> ○ Challenge students to think creatively about how to repurpose materials and integrate language learning with crafting. <p>Skills and Competencies</p> <p>Linguistic Skills:</p> <ul style="list-style-type: none"> ○ Vocabulary acquisition and retention. ○ Sentence construction and verbal communication in Spanish. <p>Fine Motor Skills:</p> <ul style="list-style-type: none"> ○ Cutting, decorating, and assembling the wardrobe and paper clothing items.
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	<p>Creativity and Design:</p> <ul style="list-style-type: none"> ○ Developing artistic ideas and applying them in a tangible project. <p>Environmental Awareness:</p> <ul style="list-style-type: none"> ○ Understanding sustainability concepts and the benefits of upcycling. <p>Teamwork and Communication:</p> <ul style="list-style-type: none"> ○ Working collaboratively to share ideas, practice vocabulary, and provide feedback to peers. <p>Self-Expression and Reflection:</p> <ul style="list-style-type: none"> ○ Articulating personal design choices and reflecting on the learning process. <p>By integrating these goals and competencies, the project ensures a well-rounded educational experience that develops linguistic, creative, and critical thinking skills while fostering environmental consciousness.</p>
Material needed	Cardboard boxes, old newspapers and magazines, bottle caps, plastic bags, plastic or metal lids, old elastics or ribbons, old fabrics or fabric scraps, old broken or damaged shoes, torn clothes or fabric pieces, old buttons, pins or zippers, old clothing tags, aluminum foil, boxes, paper, markers, colored pencils, crayons, scissors, glue, old small toys (related to a wardrobe item).
Digital Resources needed	none
Proposed duration	1 hour
Class distribution	Plenary and individual tasks (19 pupils)
Activity Description	<p>Introduction (Duration: 10 Minutes)</p> <ol style="list-style-type: none"> Overview of the Activity (5 Minutes): <ul style="list-style-type: none"> ○ Objective: Explain that participants will create a mini wardrobe from an old shoebox and paper clothing items while learning Spanish vocabulary for clothes and accessories. ○ Action: Discuss how recycled materials can be creatively repurposed and introduce the vocabulary focus (e.g., "camisa" for shirt, "pantalón" for pants). Materials Introduction (5 Minutes): <ul style="list-style-type: none"> ○ Objective: Familiarize participants with the materials: shoeboxes, paper, scissors, glue, and markers. ○ Action: Display examples of completed mini wardrobes and emphasize safe handling of tools. <p>Initial Activity: Pick Up Trash (Duration: 10 Minutes)</p> <ul style="list-style-type: none"> • Objective: Collect recyclable materials from the street or surrounding area to use in the project. • Action: Organize a short pick-up session where students gather discarded items such as plastic bags, cardboard, and paper that

can be repurposed in their project. This will promote sustainability and environmental responsibility.

Implementation (Duration: 45 Minutes)

Phase 1: Creating the Wardrobe (15 Minutes)

1. Building the Base (5 Minutes):

- **Objective:** Transform the shoebox into a wardrobe.
- **Action:**
 - Use scissors to cut doors into the shoebox.
 - Attach a small piece of string or ribbon to act as a door handle.

2. Decorating the Wardrobe (10 Minutes):

- **Objective:** Personalize the wardrobe to make it engaging and unique.
- **Action:**
 - Decorate the outside using paint, stickers, or colored paper.
 - Write the word "armario" (Spanish for wardrobe) on the shoebox.

Phase 2: Creating and Labeling Clothes (30 Minutes)

1. Making Paper Clothes (15 Minutes):

- **Objective:** Cut out clothing items from paper and decorate them.
- **Action:**
 - Trace templates for items like shirts, pants, skirts, shoes, and hats onto colorful paper.
 - Cut out and decorate the items using markers or stickers.

2. Labeling Clothes in Spanish (10 Minutes):

- **Objective:** Learn and label the clothing items with Spanish vocabulary.
- **Action:**
 - Write the name of each item in Spanish (e.g., "sombrero" for hat, "vestido" for dress) on the cutouts.
 - Attach each labeled item to the wardrobe using small hooks or adhesive.

3. Interactive Vocabulary Practice (5 Minutes):

- **Objective:** Use the wardrobe and clothing items for a fun vocabulary game.
- **Action:**
 - Students take turns selecting an item and saying its Spanish name aloud.
 - Practice phrases like "Este es un sombrero" (This is a hat) or "Ponte la camisa" (Put on the shirt).

	<p>Assessment (Duration: 5 Minutes)</p> <p>1. Reflection and Sharing (5 Minutes):</p> <ul style="list-style-type: none"> ○ Objective: Evaluate understanding and creativity. ○ Action: <ul style="list-style-type: none"> ▪ Participants showcase their wardrobes and labeled clothes, saying the Spanish names aloud. ▪ Provide group feedback, focusing on correct pronunciation and creativity in the project. <p>This engaging activity blends hands-on creativity with language learning, helping participants connect vocabulary with visual and tactile experiences while promoting sustainability through the use of recycled materials.</p> <p>Teacher’s Role/Actions</p> <p>1. Introduction:</p> <ul style="list-style-type: none"> ○ Explain the project and its goal: to learn Spanish vocabulary for clothing items while creating a mini wardrobe using recycled materials. ○ Introduce key vocabulary words in Spanish (e.g., camisa, pantalón, vestido) and demonstrate their pronunciation. ○ Show an example of a finished wardrobe and paper clothing items to inspire students. <p>2. Guiding the Creation Process:</p> <ul style="list-style-type: none"> ○ Provide step-by-step instructions on how to turn a shoebox into a wardrobe. ○ Demonstrate how to trace and cut out clothing shapes from paper, decorate them, and label them in Spanish. ○ Ensure materials like scissors and glue are used safely. <p>3. Facilitating Language Practice:</p> <ul style="list-style-type: none"> ○ Encourage students to repeat vocabulary words aloud as they label their paper clothing. ○ Organize a vocabulary practice session where students identify and name items in Spanish using their wardrobes. <p>4. Assessment and Feedback:</p> <ul style="list-style-type: none"> ○ Observe students’ participation during the activity and vocabulary practice. ○ Provide constructive feedback on pronunciation, creativity, and effort. ○ Lead a brief discussion about what they learned and how they felt about the activity. <hr/> <p>Students’ Roles/Actions</p> <p>1. Engaging with the Project:</p> <ul style="list-style-type: none"> ○ Actively listen to the teacher’s introduction and participate in the discussion about Spanish vocabulary for clothing. ○ Ask questions if any instructions or words are unclear. <p>2. Creative Crafting:</p> <ul style="list-style-type: none"> ○ Use the shoebox and provided materials to construct and decorate a personalized wardrobe. ○ Cut out paper clothing items, decorate them, and label them in Spanish using the provided vocabulary.
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	<p>3. Language Practice:</p> <ul style="list-style-type: none"> ○ Practice pronouncing Spanish vocabulary words while labeling the paper clothing. ○ Participate in interactive activities, such as naming items in Spanish and forming sentences using the new vocabulary (e.g., "Este es un vestido"). <p>4. Reflection and Presentation:</p> <ul style="list-style-type: none"> ○ Present their completed wardrobe and demonstrate their knowledge by saying the Spanish names of their labeled items. ○ Reflect on their experience, sharing what they enjoyed and any challenges they faced. <p>This structure ensures that the teacher provides clear guidance and support, while students actively participate in both crafting and language learning.</p>
<p>Comments – Additional ideas</p>	

Project Title	Compost in a Jar: Watching Food Waste Turn into Soil
Project overview/ description	<p>The project teaches students how to transform food waste into compost through a hands-on experiment. Using simple materials, students create compost jars and observe the process of decomposition, understanding its environmental benefits. This activity connects to Sustainable Development Goal (SDG) 12 – Responsible Consumption and Production, by promoting waste reduction and sustainable practices.</p> <p>Goal 12: Responsible Consumption and Production</p> <p>Students learn how composting reduces waste and supports sustainable consumption and production practices. They explore the environmental benefits of turning organic waste into compost, contributing to a circular economy.</p>
Age group	6-10
Project goals	<ul style="list-style-type: none"> ● Knowledge-Based Goals <p>Understand the science behind decomposition and the role of microorganisms in composting. Recognize the environmental benefits of composting, including waste reduction and soil enrichment. Learn how composting aligns with sustainable development and promotes a circular economy.</p> <ul style="list-style-type: none"> ● Skills <p>Develop scientific inquiry skills by observing and analyzing the composting process. Enhance data recording and reflection skills through the use of a compost journal. Foster critical thinking by exploring connections between waste management and sustainability. Build communication skills by presenting findings and insights about composting to peers.</p>
Material needed	<ul style="list-style-type: none"> ○ Glass/plastic jars with lids ○ Vegetable and fruit scraps ○ Eggshells, tea/coffee grounds ○ Paper towels/newspapers ○ Small shovels (optional)

Digital Resources needed	-
Proposed duration	3 h
Class distribution	Groups 3-4
Activity Description	<ul style="list-style-type: none"> ○ Introduction (60 minutes) <p>Teacher’s Role/Actions: Present the Driving Question: "How can we transform food waste into something useful for the environment?" Provide Context: Explain the concept of composting and its importance for waste management and sustainability. Initiate Student Curiosity: Facilitate a discussion about students' experiences with food scraps and introduce the benefits of composting. Set Expectations for the Project: Explain that students will create compost jars and monitor the decomposition process.</p> <p>Students’ Role/Actions: Engage in the discussion, sharing prior knowledge and ideas. Ask questions about composting and brainstorm what they expect to learn. Organize into small groups, each with a specific role (researcher, recorder, presenter).</p> ○ Implementation Phase 1: Preparation (60 minutes) <p>Teacher’s Role/Actions: Guide Students in Setting Up: Provide materials and explain what items are suitable for composting. Demonstrate Layering: Show students how to layer compost materials to optimize decomposition. Monitor Safety: Ensure students handle materials hygienically and safely.</p> <p>Students’ Role/Actions: Collect materials for their compost jars. Work in groups to layer the materials, creating their compost jars. Record the initial setup in their compost journals.</p> ○ Implementation Phase 2: Observation and Monitoring (Over Several Weeks) <p>Teacher’s Role/Actions: Facilitate Weekly Check-Ins: Ask guiding questions, e.g., "What changes have you observed so far?" Provide Prompts: Encourage students to reflect</p>

	<p>on the decomposition process in their journals. Monitor Progress: Ensure students are accurately recording and interpreting their observations.</p> <p>Students' Role/Actions: Observe their jars weekly, noting changes in appearance, texture, and smell. Answer prompts about the decomposition process and its environmental significance. Collaborate with group members to compare findings and discuss progress.</p> <ul style="list-style-type: none"> ○ Implementation Phase 3: Presentation (60 minutes) <p>Teacher's Role/Actions: Facilitate Group Presentations: Ask each group to share their observations and insights about composting. Provide Constructive Feedback: Highlight strengths and areas for improvement. Connect to Broader Context: Discuss how composting supports SDG 12 and sustainable practices.</p> <p>Students' Role/Actions: Present their findings creatively, e.g., through posters, slides, or models. Offer feedback to peers, fostering collaboration and critical thinking. Reflect on their learning, discussing how they can apply composting in their daily lives.</p> <p>Students' Role/Actions:</p> <ol style="list-style-type: none"> 1. Present their work creatively, e.g., through posters, slides, or models. 2. Offer feedback to peers, fostering collaboration and critical thinking. 3. Reflect on the overall project, discussing what they learned and how they can apply it in their daily lives.
<p>Comments – Additional ideas</p>	<p>Encourage students to set up a compost bin at school or in their community. Explore advanced composting techniques like vermicomposting.</p>

Project Title	Theatrical Play
Project overview/ description	The proposed project is a theatrical play co-created by students and teachers within the context of the WAE-SD project. It can be implemented as is or serve as a basis for creating similar plays
Age group	6+
Project goals	Environmental awareness by undertaking roles of animals
Material needed	Optional material needed as stage probes
Digital Resources needed	None
Proposed duration	2-3 class hours
Class distribution	Roles assigned based on the play
Activity Description	<p>Script: "By the Pond Near the Forest"</p> <p>Welcome to a lively, song-filled, dance-packed, wind-swept, sun-kissed, sky-reaching, and boundless ecological spectacle.</p> <p>Song (An Invitation to Watch): A song about Earth, our home.</p> <p>Narrator: Once upon a time, there was a girl and a forest. A girl who didn't care about anything, wasn't interested in anything, and didn't like anything. Nothing except her own phone... Her favorite toy was her smartphone. She played with it every day, took it everywhere, and even slept with it.</p> <p>Everyone: She never parted with it!</p> <p>Narrator: Until one day... She decided to go to the forest. She walked through the forest, which looked different than usual, but she didn't even notice. She walked for so long that she grew tired. Tired, she sat down by the marsh.</p> <p>Poem Foreshadowing What Will Happen Next (The girl looks thoughtful)</p> <p>Everyone: Oh, let it not fall, she thought and turned pale. The girl turned pale, for she guessed Her phone slipped from her hands, Into the green-black marsh, Sinking below the surface... A great silence fell...</p> <p>Girl: (crying) Oh, what will I do without my smartphone? How will I get home? (Looks around) I'm lost!</p> <p>Frog: (touches the girl's shoulder)</p>

	<p>I can help you, girl!</p> <p>Girl: (stands up, shouts in fright, pushes the frog away) Ew! Don't touch me! (Stomps her foot)</p> <p>Frog: If you don't want help... (turns away and starts to leave)</p> <p>Girl: Froggy, dear froggy... If you can help me, please do, and I will reward you generously.</p> <p>Frog: Listen carefully. (Sits next to the girl) I'll retrieve your smartphone, but in return, you must help us.</p> <p>Girl: Us?</p> <p>Frog: Us. The animals who live here. (Fish, a crane, and ducks appear.)</p> <p>Animals (together): The water in the pond is dirty and murky, It will be hard to find your phone—what a pity.</p> <p>Girl: Dirty water, what a shame... Why is the water dirty?</p> <p>Fish: Dirty city sewage flows in, Poisoning the waters of our river. Detergents are something dreadful, Our gills are already sore from them.</p> <p>Girl: Pfft, is that all? That's not much.</p> <p>Duck, Fish, and Crane: There's also trash poisoning our young; Plastic, metal, rubber.</p> <p>Fish: Yesterday, a little roach swallowed a piece of thread, Mistaking it for a worm. Doctor Carp said the stomach ache will pass, But it's getting harder to live in this mess. This mess of trash. I'm worried about my children!</p> <p>Girl: I see... It's not easy to be a fish these days, is it?</p> <p>Crane: It's not just the fish. We cranes suffer too. We worry because plastic bags Fly around the reeds,</p>
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where our homes are.
They glisten in the sun like fish scales,
And our young mistake them for food and eat them.
(Sobs)

Ducks: It's the same for us ducks.
Once, there was a beautiful beach here,
Surrounded by trees and grass.
Children ran and swam,
Now there's only trash, and no one wants to play.

Girl: I'm starting to worry—I must do something!

Animals (together): It's people's fault!
Humans keep polluting and polluting!
We animals don't want to live like this!

Everyone: A poem about Earth and Hope

Girl: (Sits by the water. A boy and a girl walk by.)
Children are talking.

Boy: Did you see that?

Girl 1: What?

Boy: Over there, behind the pine tree, something is lying.

Girl 1: Let's get closer. (They approach the tree.)
What is it? A bag? Is it trash?
Yes, someone dumped trash here!

Boy: (Opens the bag) Look inside—
tires, some parts, a dirty carpet...
(The girl approaches them)

Girl: Hi, what are you doing here?

Boy: We were walking along the path and found this bag behind a tree.
Just trash.

Girl 1: All of this should go to the waste collection point.

Girl: Where? What is that?

Boy: A selective municipal waste collection point—it's a long name.
You can bring tires, carpets, even a refrigerator there.

Girl: How can people dump trash in the forest when they could take it there?

	<p>Girl 1: I don't know! Oh dear, look! There are papers, plastics, and cans everywhere!</p> <p>Boy: Do you remember when this was a beautiful place? We used to come here often. The sand was clean, and we could hear birds singing. Where are the birds now?</p> <p>Boy: I used to fish here with my dad. It was full of anglers. Now the water is dirty, full of bottles and plastic bags. Do you think there's anything we can do? It's so sad and empty here.</p> <p>Girl: I have an idea! I'll do what I can. I'll run to the school with the frog. We'll ask the children for help. They'll come here with the teacher and clean up the forest and the river. (The princess and the frog disappear.)</p> <p>A class enters with their teacher. The children clean up while reciting a poem.</p> <p>Animals (together): A poem about hope—the hope that children bring. Song about Cleaning the World</p>
<p>Comments – Additional ideas</p>	