RENEWABLE ENERGY & FOSSIL FUEL: MONSTER VS CLEAN ENERGY

Digital Educational Mat & Coding







FINISH



EduMat.

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) Teaching program set-up

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Scenario

This project is developed in 4 meetings of about an hour each to be completed sequentially. This kit illustrates the practical indications for each activity and the related timing.

In today's world, teaching children about the importance of renewable energy is more crucial than ever. The future of our planet depends on understanding how pollution from fossil fuels harms our environment and why transitioning to clean energy sources is vital. Through storytelling, kids can learn that they have the power to make eco-friendly choices and protect their surroundings for future generations.

Renewable Energy & Fossil Fuel: Monster vs Clean Energy

In the vibrant land of Ozone Town, once sparkling with green meadows and clear blue skies, trouble began when thick clouds of smoke and soot cast shadows over the villages. Leo and Lia, two smart and adventurous students, knew something had to be done. The town council told stories of giant monsters terrorizing the villages—beasts made of coal, oil, and gas, each spreading pollution wherever they roamed.

Leo and Lia set off on their journey, accompanied by Robo, their wise and inventive robot friend. Their mission was clear: visit each village, defeat the fossil fuel monsters with the help of the villagers, and teach everyone how to use renewable energy. First, they arrived at Windmill Valley, where the Coal Crusher monster belched thick black smoke. With teamwork and Robo's help, they showed the villagers how to harness wind power to clear the air.

As they moved through Sunflower Grove and Riverstone Falls, each step revealed more challenges and more monsters, each tied to the pollution of a particular fossil fuel. But Leo, Lia, and the students they met learned how to replace oil with solar panels and gas with hydropower, driving the monsters away and restoring the villages.

Finally, after defeating the last fossil fuel foe, Ozone Town sparkled with clean energy, vibrant with the hope and joy of a future powered by renewables. Leo and Lia had proven that with knowledge, unity, and action, even the mightiest monsters could be conquered.

Involved subjects



| • Pedagogical needs | For a project target are linked to fost social and envire Critical Think relationships sequencing Hands-On Leastivities. Drawing time Curiosity and applications spark imagin Environment and their rol responsibilit Social Collab communicat action; Real-Life Counderstandi without elec Creativity: O Designing and their solution of the solution | geting children aged tering curiosity, buildin onmental awareness king: Children can an 5. Activities like under biofuel production er earning: They learn b awing energy use in h elines make abstract d Exploration: Childrer . Discussions on the h hation and connect t tal Awareness: They k es. Lessons on polluti y and solutions-orier boration: Group work ion. Collaborative tas ntexts: Linking learnin ng. Reflecting on ene tricity make concept pportunities for expre- nd problem-solving o | 9-10 years, the peo ng critical thinking, These are: alyze cause-and- standing fossil fue nhance logical rec est through tactile nomes, creating flo concepts tangible n are eager to expl nistory of coal and o daily life; begin understandin on and climate ch nted thinking; fosters teamwork sks show the value of to daily experier ergy use at home of s relatable; ession encourage activities enhance | dagogical needs , and developing effect els' impact and asoning; e and visual ashcards, and e; ore real-world solar panels ing global issues hange promote and e of collective inces deepens and imagining life innovation. creative thinking. |
|--------------------------|--|---|---|---|
| O Pedagogical objectives | Understand the difference between renewable and non-renewable energy sources, recognizing their environmental impacts; Identify key energy sources, including coal, petroleum, biofuels, and solar energy, and understand their uses and limitations; Comprehend the importance of clean energy, such as solar power, and its role in reducing pollution and combating climate change; Learn how a solar panel works, including its basic components and how it converts sunlight into electricity; Recognize how energy consumption affects daily life, reflecting on how electricity powers homes and the importance of conserving energy; Develop awareness of historical energy use, from coal's origins to its role in the Industrial Revolution, and its modern implications; Foster critical thinking and collaboration, encouraging group reflection and creative problem-solving on energy-related challenges. | | | |
| O Methodology | The DEMING CY improvements of PLAN | CLE (PDCA Cycle) is c continuously, test cho DO | a method for imple anges and solve p CHECK | ementing roblems. ACT |
| L | | | 03 | 04 |

01_Plan and schedule teaching units/activities.

02_Carry out the activities (teaching units; theoretical training sessions; practical training/laboratory sessions).

03_Continuous control that the objectives are achieved and that all students have acquired new skills in a homogeneous way.

04_At the end of each session the teacher evaluates the work, observes and identifies critical issues and ways to implement corrective actions for the future. THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT



\diamond Section of the map

This section of the map is dedicated to the first lesson. On a graphic level it presents all the elements useful for narration and related activities.



Pedagogical objectives

The objectives for the first part of the project are listed as follows:

- Analyze local and global facts and phenomena by interpreting maps at various scales, thematic maps, graphs, and satellite images;
- Identify and describe the elements that characterize major Italian, European, and global landscapes, noting similarities and differences, including connections to socio-historical contexts of the past and elements of significant environmental and cultural value;
- Understand and apply the multifaceted concept of a geographical region, including its physical, climatic, historical-cultural, and administrative aspects;
- Recognize that the territory comprises interconnected and interdependent natural and human-made elements, understanding that human intervention in any of these elements impacts the others;
- Identify the nature of fossil fuels and the importance of choosing renewable energy sources in order to preserve the environment.

🗘 Necessary aspects

The story and its activities require:

- an educator who will actively participate during the lesson;
- a display on which to screen the map during and after reading the story and to view the videos proposed for some activities;
- a computer/tablet with which children can carry out part of the activities and programming on Scratch (a free programming environment, with a graphical programming language);
- paper and pencils for drawings.

O Methodology

ATTENTION: Time of correction

A mistake in STEAM is a fundamental moment: all mistakes teach something and from them we can learn and improve together. The error must be corrected in a positive way without any penalty (reprimand, negative judgement, etc.) The correction involves the whole group in searching for the best solutions and explaining the reasons (cooperative learning – collective intelligence).

NARRATION (STEP 1) - 5 min

The educator will read the story. During the narration the map will be projected on a screen and kids will be encouraged to participate.

CODING ON SCRATCH (STEP 2) -THROUGHOUT THE LESSON

This part is aimed to introduce block programming on Scratch. All activities will be led by the educator.

ACTIVITY 1 / DISCUSSION - 10 min

The educator will start a discussion with the children in order to give them the practical tools to better understand the environment.

ACTIVITY 2 /DRAWING - 15 min

Children will draw the protagonists of the story and some of the scenarios descripted by the educator.

ACTIVITY 3 /DISCUSSION - 5 min

The educator will make an introduction on the importance of choosing renewable energy to protect the environment.

ACTIVITY 4 /ONLINE QUIZ - 10 min

The educator will explain what fossil fuels are in order to let the class take the online quiz.

ACTIVITY 5 /SUMMARY MAP - 15 min

the class will create a conceptual map to summarize the topics covered.

) Step 1

The educator reads carefully the story to the children encouraging them to participate. In this phase, the educator will show the characterising elements of the map section that will be used for the first lesson. The game starts from the main public garden in the village. Lia goes to the garden where her parents are waiting to take her home: their car is on biofuel. They need to refuel but the gas station nearby has only gasoline and diesel. Defending the gas station is a first "monster": Lia will have to overcome by answering questions about the environmental impact of the two non-ecological fuels. Leo also arrives and together at the gas station they watch a video explaining the heavy emissions that cause air and soil pollution. The gas station attendant approaches and says, «We are a big gas station, ENI, and we produce oil, but our station emits a lot of dirty and volatile chemicals that vaporize during the gas filling process and cause soil pollution. We need to understand why oil is leaking from a pipe in the village». The two brothers head for the pipeline.

The two main characters arrive at the pipeline (first yellow circle with question mark). Clicking on the circle will read «You found the Yellow Circle of Questions, thank you for your help», «Answer this question: it is an object on which we eat our meals and it has 4 legs».

Entering the answer will provide a link to an in-depth video on climate change due to pollutionThrough in-depth work, teachers will explain to pupils the impact of pipelines on the environment (greenhouse effect, global warming)

At the end, pupils will have to answer a questionnaire to show that they understand the topic and then move to the blue circle where they will have the opportunity to replace the gas station with a biofuel station to defeat the first "monster" by piecing together a puzzle.

Step 2

The educator helps children to carry out the block programming code on Scratch.

ACTIVITY 1

The educator starts a discussion with the children in order to give them the tools to better understand the environment with the aim of protecting it with their During this lesson the class led by the educator will use block programming on Scratch following the steps explained in the first chapter of the dedicated additional pamphlet called **MAT8.** Coding literacy for the lessons. The tasks to complete are listed below.

The educator begins by warmly addressing the children, fostering a sense of anticipation and curiosity. «Today, we embark on an exciting journey to understand the world around us—not just here in our own town, but across Italy, Europe, and even the entire globe,» the educator states. «We'll learn to explore local and global places by interpreting

daily choices.

Each child will be involved with engaging questions to make the explanation more participatory maps, graphs, and satellite images that tell us stories about different regions and the unique ways they are connected.»

Understanding Maps and Visual Data

The educator moves to the first topic: understanding and interpreting various forms of visual data. They introduce different types of maps, holding up examples of physical and thematic maps. «Maps are not just tools for finding places,» they explain. «They help us uncover how areas are shaped, what resources they have, and even the challenges they face.» The educator points to a thematic map showing climate zones and explains, «This map can tell us why it might snow in one place and be sunny in another. Learning to read these maps helps us compare pla-ces and understand the world on a much deeper level.»

The educator also introduces satellite images and their importance. «These special images allow us to see how places look from above, showing forests, cities, rivers, and even changes that have happened over time. With this, we can learn about phenomena like deforestation, urban growth, or natural disasters.»

Exploring the Characteristics of Landscapes

The educator shifts the discussion to exploring the key elements that define various landscapes. «Each region has its own story,» they say, their tone measured and reflective. «Italy, for example, is known for its majestic mountains, rolling countryside, and historic cities, while other parts of Europe might be recognized for vast plains or dense forests. By studying these characteristics, we can identify what makes places similar or different, even tracing these features back to their historical and cultural roots.»

They emphasize how landscapes can be tied to past sociohistorical frameworks. «Think about a city like Rome. Its landscapes are not just shaped by hills and rivers but also by centuries of human activity—monuments, ancient roads, and buildings that tell stories of the past. In contrast, natural parks or untouched forests show how the environment looked before human settlements.»

The Multifaceted Concept of a Geographical Region

To deepen understanding, the educator introduces the concept of a geographical region. «A region is not defined solely by borders or landforms; it's a complex idea that includes physical, climatic, historicalcultural, and administrative aspects,» they explain. The educator carefully outlines examples of how different types of regions overlap: «The Alps are a physical region, marked by their towering mountains, but they are also part of a climatic region known for snowy winters, and a cultural region rich in traditions passed down through generations.»

The Interconnectedness of the Territory

The educator's voice becomes more serious as they guide the children to think about the interconnected nature of the world. «Imagine the territory as a giant web,» they say, spreading their fingers to illustrate the idea. «Each element, whether it's a river, a city, or a forest, is linked to the others. When humans intervene by changing one of these elements—perhaps by building a dam or clearing a forest—it sets off a chain reaction that affects everything else. This understanding helps us realize why it's so essential to approach environmental and developmental decisions with care.»

Addressing Environmental and Cultural Heritage

Finally, the educator moves to discussing the importance of protecting natural and cultural heritage. «One of our greatest responsibilities is to identify problems that threaten these valuable areas, such as pollution or neglect, and understand the solutions that have been put in place,» they say. The educator points out examples of global and local conservation efforts, explaining how different regions have adopted various strategies to preserve their natural beauty and historical sites.

They conclude by encouraging the children to think critically and creatively. «In this project, we will not just learn about these solutions; we'll think of our own ways to help protect and enhance our world. You, as young learners, have the power to imagine new solutions and inspire change that will protect our environment and heritage for generations to come.»

ACTIVITY 2

In this step the educator will help the children to make drawings depicting the protagonists of the story and some of the scenarios. The educator begins the activity by setting out a range of art supplies: colored pencils, markers, paper, and even some watercolors for those who want to add a special touch to their work.

Before they start, the educator paints a vivid mental picture of the two characters, Leo and Lia, describing their appearance and personalities. Leo, with his adventurous spirit and a trusty explorer's backpack slung over his shoulder, is depicted as determined and clever. Lia, known for her quick thinking and warm smile, carries a notebook filled with observations and sketches. The educator highlights details such as Leo's sturdy boots, perfect for trekking through different landscapes, and Lia's braided hair adorned with a small charm shaped like a sun, symbolizing her hope for a bright future.

The first scenario the children will illustrate is Windmill Valley, the initial stage of Leo and Lia's journey. The educator describes the landscape in rich detail: rolling green hills dotted with tall, majestic wind turbines that spin gracefully against a backdrop of clear blue skies. In the distance, there are small, cozy cottages with roofs painted in bright reds and yellows. A gentle stream runs through the center, reflecting the soft light of the sun. However, a subtle hint of trouble lies in the dark, smoky silhouette of the Coal Crusher monster hiding behind one of the hills, with glowing, coal-like eyes that peek ominously over the landscape.

The children are encouraged to infuse their own creativity into their illustrations, perhaps adding details like birds flying near the wind turbines or a playful fox peeking out from behind a bush. The educator ensures that each child feels supported in bringing their vision to life. Some children choose to draw Leo and Lia in mid-action.

The educator encourages the children to think about how the scene they are drawing sets the stage for the story's adventure. The activity not only engages the children's artistic skills but also reinforces their understanding of the themes discussed earlier: the importance of recognizing challenges and finding solutions that bring positive change.

ACTIVITY 3

Following is a brief introduction on the importance of choosing renewable energy. This discussion will be useful for the next activity. The educator gathers the children and starts by explaining the importance of energy in powering their daily lives, from their homes to their schools. They introduce the concept of two types of energy: fossil fuels, shown as dark and smoky on a chart, and renewable energy sources, depicted as bright and clean images of solar panels, wind turbines, and flowing water.

The educator explains that, unlike fossil fuels that can run out and pollute the environment, renewable energy sources come from natural processes like the sun and wind, which don't deplete.

To simplify, the educator uses an analogy: «Fossil fuels are like a flashlight with non-replaceable batteries, but renewable energy is like a solar flashlight that works as long as there is sunlight.»

They highlight that choosing renewable energy helps keep the environment clean and sustainable, and encourage the children to imagine a bright future where their town is powered by these endless, non-polluting sources.

The session ends with the children discussing how they can support renewable energy in their own lives, making the lesson engaging and thought-provoking.

) ACTIVITY 4

The educator continues the explanation by going into detail about what fossil fuels are. After making sure that each child has understood, the educator has the class take the online quiz. The educator continues the lesson with a concise overview of fossil fuels, outlining their significance and impact on the environment. Fossil fuels, the educator explains, are natural resources formed from the remains of ancient plants and animals over millions of years. These resources include coal, oil, and natural gas, which are extracted from the earth and used to produce energy. While they have historically been essential for powering industries, transportation, and electricity generation, their use comes with considerable drawbacks.

The educator emphasizes that burning fossil fuels releases significant amounts of carbon dioxide and other pollutants into the atmosphere, contributing to air pollution and climate change. This not only harms ecosystems but also poses risks to human health. Moreover, fossil fuels are finite; as non-renewable resources, they will eventually run out, creating long-term challenges for energy sustainability.

By understanding these points, the educator notes, students will be better prepared to approach the upcoming quiz, equipped with a clearer sense of why the shift toward renewable energy sources is essential for a sustainable future.

panquiz

FOSSIL FUELS (COMBUSTIBLI FOSSILI)

i combustibili fossili derivano dalle trasformazioni di sostanze organiche avventuta imilicii danni it cabno il petrolio el igas naturale sono combustibili fossili noi li utilizziano per scaldare le case per far muovere il mezzi di trasporto per far funzionare gli impianti industriali el ista usando propio adesso che luna barbecue il gas naturale il petrolio hanno la stessa origine derivano dalla decomposizione di organismi vegetali animali morti milioni di anni fa quando questi organismi morivano se mischiavanocon la sabbia e la melma dei fondali marini con il gasare del tempo questi strati di materiale organico suta intoperti da strati di sabbia e roccia il calore e la pressione hanno lavorato su questo materiade organico per milioni di anni trasformando nei glacimenti di petrolio e di qos naturale da questo deriva il nome combustibili fossili si chiamano così perché sono stati originati da organismo prestorio je perconse il petrolio

What are fossil fuels?

Substances derived from organic matter that have undergone transformations over thousands of years
Substances derived from inorganic matter that have undergone transformations over millions of years
Substances derived from inorganic matter that have undergone transformations over thousands of years
Substances derived from organic matter that have undergone transformations over millions of years
What are the three main types of fossil fuels?
Coal, gasoline, and diesel
Oil. agosoline and natural gas

Coal, oil, and natural gas Coal, oil, and diesel

What is the origin of fossil fuels?

Formation of inorganic matter over thousands of years
 Decomposition of dead plant and animal organisms millions of years ago
 Decomposition of dead plant and animal organisms thousands of years ago

Press the button to take the quiz

ACTIVITY 5

The lesson ends with a practical activity in which the class will have to create a conceptual map to summarize the topics covered.

The children will be provided with all the necessary material.

At the end of the session, the educator guides the pupils in constructing a comprehensive map that consolidates all the information they have learned about fossil fuels and renewable energy sources. This collaborative activity serves both as a creative project and a visual summary of their newfound knowledge.

The educator divides the pupils into small groups, each tasked with illustrating a different aspect of what they have learned. One group may focus on depicting the extraction and use of fossil fuels, illustrating oil rigs, coal mines, and smokestacks to show the environmental impact. Another group works on showcasing renewable energy sources, adding images of solar panels, wind turbines, and hydroelectric dams, emphasizing their clean and sustainable nature.

Each group uses markers, colored pencils, and paper to create their section, ensuring that the map is not only informative but visually engaging. The educator encourages the pupils to include labels, arrows, and small fact boxes explaining the key points about each energy source, such as its benefits, limitations, and impact on the environment.

Once each group completes their section, they come together to assemble the map as a large mural. The map might show connections between regions rich in fossil fuels and those adopting renewable energy strategies. The educator helps arrange the pieces so that the map flows logically, providing a clear comparison between the past dependence on fossil fuels and the potential for a future built on renewable energy.

The completed map becomes a collaborative work that the pupils can proudly display in the classroom. It not only reinforces their understanding but also serves as a visual reminder of the importance of choosing sustainable energy sources. The educator encourages the kids to present their map to the class, explaining the key elements and what they learned, fostering public speaking skills.

MANY FORMS OF ENERGY



BIO GAS



\diamond Section of the map

This section of the map is dedicated to the second lesson. On a graphic level it presents all the elements useful for narration and related activities.



> Pedagogical objectives

The objectives for the second part of the project are listed as follows:

- Develop an in-depth understanding of various energy sources, including traditional and alternative options, to build a comprehensive foundation for discussing energy sustainability;
- Identify and describe alternative sources to petroleum, focusing on how these sources contribute to reducing environmental impact and promoting energy security;
- Gain knowledge of biomass as an energy source, understanding its origins, how it is produced, and its role within the broader spectrum of renewable energy;
- Evaluate the advantages and disadvantages of diversifying biofuel production, considering economic, environmental, and social implications to foster critical thinking about sustainable energy solutions;
- Analyze the current state of electricity consumption in Italy, examining patterns, sources of electricity, and the progress toward renewable energy goals within the national context.

• Necessary aspects

The story and its activities require:

- an educator who will actively participate during the lesson;
- a display on which to screen the map during and after reading the story and to view the videos proposed for some activities;
- a computer/tablet with which children can carry out part of the activities and programming on Scratch (a free programming environment, with a graphical programming language);
- paper, markers, scissors, and glue.

O Methodology

ATTENTION: Time of correction

A mistake in STEAM is a fundamental moment: all mistakes teach something and from them we can learn and improve together. The error must be corrected in a positive way without any penalty (reprimand, negative judgement, etc.) The correction involves the whole group in searching for the best solutions and explaining the reasons (cooperative learning – collective intelligence).

NARRATION (STEP 1) - 5 min

The educator will read the story. During the narration the map will be projected on a screen and kids will be encouraged to participate.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON

During the lesson children will do block programming on Scratch. All activities will be led by the educator.

ACTIVITY 1 /DISCUSSION AND VIDEO - 10 min

The educator delves into the discussion started during the previous lesson on renewable and non-renewable energy. At the end of the discussion they will watch a video.

ACTIVITY 2 /CARD DRAWINGS - 10 min

Children create small flash cards related to energy types helped by the educator.

ACTIVITY 3 / DISCUSSION - 10 min

The educator will start a discussion about what are biofuel and why choose instead of petroleum.

ACTIVITY 4 /MATCHING GAME - 10 min

In order to understand the production of biofuels, children will play a matching game wher they have to recognize the steps of the production.

Many forms of energy

) Step 1

The educator reads carefully the story to the children encouraging them to participate. In italics there are some suggestions for the teacher. In this phase, the educator will show the characterising elements of the map section that will be used for this lesson. When we arrive at the Green Question Circle, we'll find the cards with the pictures of biomass sources.

Written on it: «Thanks for cleaning our Earth but we need substitution instead of petroleum, otherwise our gas station cannot work anymore. These are the sources of biomass and you can substitute petrol with them.»

If you agree, kids, wiggle your arms and make a funny face and tell me why do you agree. If you disagre, frown deeply and tell me why.

(Emotional and Social Milestone: Sense of Identity)

(Movement, Hand and Finger Milestones: Refined Motor Ability)

Then we'll find the Orange Question Circle in the village.

** They have interaction with teachers about agreeing or not **

Leo/Lia enters the park, he/she receives a notification that he/she needs to collect the sources of biomass and when he/she arrives at one field of biomass, the robot will be programmed beforehand to go through each stop (at each sources of biomass it will do beep-beep.)

When they arrive at the Orange Question Circle (they go back to the petrol station), we'll find the card with the picture of biomass. Written on it: «Hello geniuses, to implement the new energy which is not harmful to our Earth you have to answer correctly to below multiplication tables. "9*8=63. 10*10=100, 6*4=24, 5*8=40» (Language and Cognitive Milestones: Mastery of More Complex Mathematical Concepts)

At the petrol station we'll have a picture of biomass (clean energy) with the brief explanation of biomass and its benefits. The monster will fade away (*in the app that they use during the game*).

After the monster fades away, Leo/Lia can help his/her parents to put biofuels in their car. Now he/she can go home with his/her parents

Step 2

The educator helps children to carry out the block programming code on Scratch. During this lesson the class led by the educator will use block programming on Scratch following the steps explained in the second chapter of the dedicated additional pamphlet called **MAT8.** Coding literacy for the lessons. The tasks to complete are listed below.

ACTIVITY 1

To begin the lesson, the teacher delves into the discussion started during the previous lesson on renewable and nonrenewable energy.

Children will be engaged with relevant questions. At the end of the discussion they

will watch a video.

To begin the lesson, the teacher revisits the discussion on renewable and non-renewable energy, building on the foundation laid in the previous class. The teacher starts by summarizing key points, such as the differences between renewable sources, which replenish naturally and sustainably, and non-renewable sources, which are finite and contribute significantly to environmental issues like pollution and climate change. This brief review helps to reengage the pupils and reinforce their understanding.

Next, the teacher encourages the pupils to share any thoughts or reflections they have had since the last session. This interactive approach allows the students to connect prior knowledge with new concepts, fostering a sense of continuity and active participation. The teacher highlights examples of both energy types that the pupils might recognize, such as solar panels they've seen in their community or the gas stations that fuel cars, relating these to everyday experiences.

To deepen the discussion, the teacher presents engaging visuals: photos, charts, and short video snippets that illustrate the process of harnessing different energy sources. These resources help make the abstract concept of energy more tangible and relatable. The teacher explains how renewable energy sources, such as wind and solar, work by capturing natural processes, contrasting this with non-renewable sources like oil and coal, which require extraction and combustion that deplete the Earth's resources and emit pollutants.

The teacher poses thought-provoking questions: «Why do you think renewable energy is called sustainable?» and «What might happen if we continue to rely on non-renewable energy without change?» These questions prompt pupils to think critically and engage in a brief discussion, reinforcing the lesson's relevance to real-world challenges.

By the end of this introductory part, the teacher let children watch an educational video on YouTube called *Tipi di energia per bambini* - *Energie rinnovabili e energie non rinnovabili* of 2023. This video is in italian but there are many alternatives online.



Press the button to watch the video

ACTIVITY 2

In this phase, children create small flash cards related to energy types helped by the educator. Each child will be provided with the necessary help. The next activity involves children creating small flash cards related to different energy types. The educator distributes colorful construction paper, markers, scissors, and glue, ensuring each child has the materials needed to engage in the task. To guide the process, the educator provides templates and examples of flash cards, illustrating how each should be structured. Each card will represent an energy type, either renewable or non-renewable, and include a brief description, an illustration, and a key fact.

The educator moves around the room, offering support and answering questions as children select an energy type to work on, such as solar power, wind energy, coal, or petroleum. For renewable energy flash cards, children might draw a sun or wind turbine, while nonrenewable cards could feature an oil rig or a lump of coal. The educator encourages the use of simple symbols and bright colors to make the cards visually appealing and easy to understand.

While the children work, the educator helps by suggesting key points to include on the cards. For example, on a solar energy card, they might guide a child to write, «Uses sunlight to produce clean energy» and draw rays of the sun. For non-renewable sources, the educator may remind them to add a fact like, «Releases carbon dioxide when burned,» to highlight its environmental impact.

Once the flash cards are complete, the children share their creations with the class, explaining what type of energy they chose and why. This step allows them to practice summarizing information and speaking in front of their peers. The educator wraps up the activity by collecting the cards to create a shared classroom set. These flash cards will be used for future games and review sessions, reinforcing the lesson and making learning about energy types interactive and memorable.

ACTIVITY 3

Now the educator starts a discussion about what are biofuel and why choose instead of petroleum. Children will be engaged with relevant questions. The educator begins the discussion by gathering the children's attention and introducing the topic of biofuels. They explain that biofuels are a type of renewable energy made from plant materials and animal waste, emphasizing that unlike petroleum, which is extracted from deep underground and formed over millions of years, biofuels come from resources that can be replenished quickly. The educator provides examples, such as bioethanol made from corn or sugarcane and biodiesel derived from vegetable oils or animal fats.

To engage the children, the educator uses visuals or short videos showing crops being turned into fuel, making the process easier to understand. They highlight that biofuels are considered more environmentally friendly than petroleum because they release fewer harmful emissions when burned. The educator points out that biofuels are part of a sustainable cycle: plants absorb carbon dioxide from the atmosphere as they grow, which partially offsets the emissions when they are used as fuel.

The educator then poses a question to spark discussion: "Why do you think we might choose biofuels over petroleum?" They guide the children's responses, emphasizing points like reducing greenhouse gas emissions and lessening dependence on fossil fuels. The educator explains that while biofuels aren't perfect and come with their own challenges, such as land use for growing crops, they provide a cleaner alternative that helps to protect the environment.

By framing the discussion around these key points, the educator ensures that children understand both the benefits and the limitations of biofuels. This helps the students grasp why choosing alternatives like biofuels is an important step toward sustainable energy solutions.

The educator immediately sets the stage for an interactive and educational game that focuses on understanding the process of creating biofuel. Children are shown a series of five pictures depicting various stages of biofuel production, along with five descriptive sequence cards that detail each step. The pictures might include images of crops being harvested, a processing plant, fermentation tanks, refining plants, and finally, biofuel being used in a vehicle. The sequence cards describe these steps, such as "Crops are harvested," "Biomass is processed to extract sugars," "Sugars are fermented to produce ethanol," "Ethanol is refined," and "Biofuel is ready for use."

To begin, the educator explains the rules, making sure each child understands that they must match the pictures to the correct sequence cards and arrange them in the correct order. The goal is to correctly identify the steps involved in converting plant feedstock into usable biofuel. The educator encourages children to work individually or in pairs, prompting discussion and collaboration.

As the children work, the educator goes around the room, offering suggestions and asking guiding questions to help them think critically, such as «What do you think happens before the refining process?» or «Why is fermentation an important step in biofuel production?» These questions prompt children to discuss and reason about their decisions.

To add an element of fun and motivation, the educator incorporates a time limit or turns the game into a friendly competition where pairs race to finish correctly. Once children complete their sequences, the educator reviews their answers with the class, discussing each step and reinforcing the biofuel production process.

The game ends on a celebratory note, as the educator explains that completing the sequence correctly means the children have successfully "produced" biofuel to replace gasoline, symbolizing how alternative fuels can play a role in a cleaner future. This activity not only helps children understand biofuel production but also improves their logical thinking and sequencing skills.

ACTIVITY 4

In order to understand the production of biofuels, children will play a matching game. The educator will provide the necessary help.

RENEWABLE SOURCES: KNOW AND RECOGNIZE



 \diamond Section of the map

This section of the map is dedicated to the third lesson. On a graphic level it presents all the elements useful for narration and related activities.



> Pedagogical objectives

The objectives for the third part of the project are listed as follows:

- Explore the historical development of coal use, from its beginnings around 1500 B.C. as a heating source, through its role in the Industrial Revolution and the steam engine, to its current use as a major fuel for electricity generation;
- Understand the fossil origin of coal, its geological formation, extraction methods, and the dangers of mining. Recognize coal's high pollutant emissions and their environmental and health impacts;
- Distinguish between renewable and non-renewable energy sources, understanding their characteristics and long-term implications for informed decision-making;
- Comprehend the importance of energy conservation and apply this knowledge in daily life to encourage sustainable practices that reduce energy consumption;
- Recognize the value of collective action, understanding the greater effectiveness of group efforts over individual actions for environmental protection and sustainable energy promotion.

• Necessary aspects

The story and its activities require:

- an educator who will actively participate during the lesson;
- a display on which to screen the map during and after reading the story and to view the videos proposed for some activities;
- a computer/tablet with which children can carry out part of the activities and programming on Scratch (a free programming environment, with a graphical programming language);
- paper, pencils, scissors and glue.

O Methodology

ATTENTION: Time of correction

A mistake in STEAM is a fundamental moment: all mistakes teach something and from them we can learn and improve together. The error must be corrected in a positive way without any penalty (reprimand, negative judgement, etc.) The correction involves the whole group in searching for the best solutions and explaining the reasons (cooperative learning – collective intelligence).

NARRATION (STEP 1) - 5 min

The educator will read the story. During the narration the map will be projected on a screen and kids will be encouraged to participate.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON

During the lesson children will do block programming on Scratch. All activities will be led by the educator.

ACTIVITY 1 /DISCUSSION - 10 min

The educator will narrate in a simplified and brief way the most significant stages of man's social development related to the use of energy sources.

ACTIVITY 2 /DISCUSSION AND DRAWING - 15 min

The educator will explain briefly the second industrial revolution. At the end the children will illustrate the use of coal with drawings.

ACTIVITY 3 / REFLECTION - 15 min

Students will reflect on a "typical day": how many of our daily actions correspond to a use of electricity? And if there was not this electricity, how would we heat ourselves, wash, cook, watch TV etc...?

ACTIVITY 4 /DAILY DIARY - 15 min

The educator incourages children to keep a small daily diary in which they report how many times they used an energy source and what source it was.

) Step 1

The educator reads carefully the story to the children encouraging them to participate. In italics there are some suggestions for the teacher. In this phase, the educator will show the characterising elements of the map section that will be used for this third lesson. Question 1: «Have you ever been on a train?»

Question2: «Do you know how trains move? Your teacher is going to show you 5 pictures, whenever you see the right picture Clap 3 times and if you see the wrong picture you have to frown deeply.»

(5 cards with pictures of coal, oil, electricity, wind, solar panels are being shown to them by the teacher and they follow the mentioned above rule).

After showing all cards: «Perfect! Clever, children, you are wonderful, let's find the yellow question circle to know what is coal.»

(Movement, Hand and Finger Milestones: Refined Fine Motor Ability)

When they arrive at the Yellow Question Circle picture, they find the physical card with the same picture. Written on it: «Hey! I know you want to know what coal is, but the answer is not here. You must find it where you are sitting»

(Another Yellow card with a coal picture centered is hidden under a chair, they find it and written on it explanation about what is coal)

«Shiny black rock, it has lots of energy in it and when it is burned it makes heat and light energy. Formed millions of years ago before dinosaurs. Giant plants died and sank to the bottom of the swamps. Over the years by the help of heat and pressure under the water these plants changed into coal. It burns longer than wood and that's the reason for its popularity Carbon gives coal most of its energy and is released whencoal is burned», the teacher will guide them back to the

map. Then the robo starts talking: «Do you like to meet somebody? Then go to the stacked cards next to the map and find the picture drawn on the next card on the map.»

When the students find Leo and Lia with the same outfit they realize that next to them there is a black tired monster.

Then the teacher asks the students if they know why the monster is tired. They answer shortly. Then they will hear the monster's voice which says: «I have been working for a long time... from a long long time ago I have provided heating energy for your houses, I also cooled the weather for you in the hot summers. without me you couldn't cook your meals or even light your houses at night.

Have you ever been on the train? The first train also started to move because of me... I've come a long way and I'm pretty old now. What does an old man do? He retires himself and makes space for other new sources of energy which are not harmful to the environment. By the way, if you want to know why I am harmful to the environment, find Leo and Lea in astronaut suits, they will tell you why.»

🗘 Step 2

The educator helps children to carry out the block programming code on Scratch.

ACTIVITY 1

In this phase, the educator together with the children narrates in a simplified and brief way and with the use of timelines, the most significant stages of man's social development related to the use of energy sources. During this lesson the class led by the educator will use block programming on Scratch following the steps explained in the third chapter of the dedicated additional pamphlet called **MAT8.** Coding literacy for the lessons. The tasks to complete are listed below.

The educator gathers the children around and begins an engaging and interactive storytelling session. To make the history come alive, they use a large timeline displayed on the board or projected on a screen. The timeline is adorned with colorful illustrations and key dates, depicting significant milestones in human development related to energy use.

Starting from the earliest archaeological findings, the educator explains how coal was first used by ancient civilizations around 1500 B.C. as a source of heat. Simple drawings or images of ancient hearths help the children visualize how people discovered the warmth and usefulness of this black rock. The educator asks the children to imagine what life would have been like when fire was one of the only sources of energy.

Moving along the timeline, the educator describes how the use of coal took a monumental leap during the 18th century with the first Industrial Revolution. They point to illustrations of early steam engines, explaining in simplified terms how coal was burned to produce steam, which powered new inventions. «This,» the educator says, «was when people started using machines instead of just animals or their own strength.» The children's eyes widen as they hear how the steam engine allowed factories to operate on a larger scale, changing how work was done and cities were built.

Next, the educator highlights rail transportation and the advent of large steam-powered ships. With visual aids showing early locomotives puffing clouds of steam and great ships sailing vast oceans, the children begin to see how coal-powered inventions connected people and goods across long distances, making travel and trade faster and more efficient.

The educator explains that this new mechanical power also transformed industries, replacing manual labor and animal power with machines that could work continuously. Simple images of the first industrial machinery turning out textiles and metal products help children understand how coal not only fueled engines but also sparked massive social and economic changes.

Throughout the session, the educator encourages the children to ask questions and share their thoughts, making the experience interactive. The children are invited to add small illustrations or symbols to the timeline themselves, reinforcing their learning and creating a colla-borative piece that reflects the history they just learned.

By the end of the activity, the children have a clearer understanding of how energy sources like coal impacted human development, shaping societies from ancient times to the industrial age. The timeline serves as a vivid reminder of how reliance on coal powered progress but also led to new challenges, paving the way for discussions on the evolution toward renewable energy.

) ACTIVITY 2

The educator explains briefly the second industrial revolution: the invention of machines capable of converting mechanical force into electric energy. At the end the educator propose to illustrate the use of coal with drawings. The educator continues the lesson by explaining the key aspects of the Second Industrial Revolution, focusing on how technological advancements transformed coal's role in society. They start by describing how new inventions allowed the conversion of mechanical energy into electrical energy. The educator points to a simplified diagram of an early power plant, showing how coal was used to heat water, producing steam that turned large turbines and generated electricity. This process laid the groundwork for widespread electric lighting, powered machinery, and the modern use of electric appliances that revolutionized homes and industries.

The educator emphasizes how this new capability brought significant changes, with coal becoming essential for powering electric grids and entire cities. Visual aids showing early electrical generators, light bulbs, and factories illuminated at night help children grasp the impact of these innovations on daily life. The children learn that coal was no longer just for steam engines but became central to powering machines that improved productivity and connected people in unprecedented ways.

To reinforce the lesson, the educator proposes an activity: illustrating the use of coal during this transformative period. The children are invited to create drawings depicting scenes such as steam engines powering factories, coal being loaded into early electric plants, or workers in a lit factory. The educator provides materials like colored pencils and paper, encouraging creativity while offering prompts such as, «What might an early power station look like?» or «How did coal change the way people worked and lived?»

This activity helps children visualize the shift from mechanical to electrical energy and understand coal's critical role during the Second Industrial Revolution. The educator moves around the room, guiding and discussing each child's drawing, reinforcing the lesson and nurturing a deeper connection with the history they've just learned.

ACTIVITY 3

Together with students the educator reflect on a "typical day": how many of our daily actions correspond to a use of electricity.

The teacher also asks "and if there was not this electricity, how would we heat ourselves, wash, cook, watch TV etc...?". The children will answer to this question in small groups. The educator leads the class into a reflective discussion by prompting the students to consider how electricity affects their daily lives. They start by asking the children to think about a typical day, from the moment they wake up to when they go to bed. With guided questions, the educator helps them list activities that involve the use of electricity, such as turning on the lights, brushing their teeth with an electric toothbrush, using the microwave for breakfast, charging their devices, and watching TV or using a computer for schoolwork.

The educator writes these activities on the board, drawing lines to show how interconnected and dependent their day is on electricity. Then, they encourage the students to imagine what life would be like without it. «If we didn't have electricity, how would we keep warm, wash clothes, cook meals, or enjoy our favorite shows?» the educator asks. This thought experiment helps students realize how fundamental electricity is and sparks discussions about alternatives that people used in the past, such as wood-burning stoves for cooking or candles for light.

The educator expands on this by explaining how the reliance on electricity, especially when it comes from non-renewable sources like coal, has both benefits and environmental impacts. They highlight that modern life's convenience comes with the responsibility to use energy wisely and explore renewable options.

To make the session interactive, the educator divides the students into small groups and assigns them a task: create a chart showing a typical day's activities that use electricity and suggest alternatives that could have been used in a time before electricity was common. Each group presents their findings, discussing how people managed daily life before electric power and considering what changes they could make to use energy more sustainably today. This exercise deepens their understanding of energy consumption and its importance in their lives, fostering awareness and critical thinking about energy usage and conservation.

ACTIVITY 4

The educator proposes to draw/ realize/picture all the rooms in one's house to visualize in how many daily things/actions electricity is "hidden". Finally the educator proposes

that the pupils keep a small daily diary in which they report how many times they used an energy source and what source it was. The educator introduces a creative and insightful activity by proposing that the students draw or create representations of all the rooms in their homes. The goal is to visualize and identify how many daily actions and things involve the use of electricity. The educator explains that each room—whether it's the kitchen, bedroom, bathroom, or living room—contains hidden uses of electricity that often go unnoticed. They encourage students to include details like light switches, appliances, devices, heating or cooling systems, and even chargers plugged into outlets.

To make the activity more engaging, the educator provides large sheets of paper, markers, and colored pencils, and suggests that the children work individually or in pairs. As the students draw, the educator moves around the room, prompting them to think deeply about each room: «What do you use when you wake up in your bedroom? What helps you cook in the kitchen or take a warm shower in the bathroom?» These questions guide the children in filling their drawings with realistic depictions of items that rely on electricity. Once the drawings are complete, the educator leads a group reflection where students share what surprised them most about their findings. This conversation helps them recognize just how much their daily comfort depends on various sources of energy, sparking further thought about the hidden energy consumption in everyday life.

To extend this understanding, the educator introduces the idea of keeping a small daily diary. The students are tasked with noting down at the end of each day how many times they used an energy source and specifying what that source was (e.g., turning on the light, using the microwave, charging a tablet).

This diary will help them become more conscious of their energy usage over time and encourage them to think critically about ways they could reduce their reliance on non-renewable sources.

AIR POLLUTION AND SOLAR ENERGY



\diamond Section of the map

This section of the map is dedicated to the fourth lesson. On a graphic level it presents all the elements useful for narration and related activities.



> Pedagogical objectives

The objectives for the fourth part of the project are listed as follows:

- Understand the problem of air pollution and climate change, recognizing the causes and impacts of these global issues, particularly how the use of fossil fuels contributes to greenhouse gas emissions and environmental degradation. Build awareness of the urgent need for solutions to mitigate these challenges and promote a healthier planet;
- Gain comprehensive knowledge of solar energy, exploring its properties, how it is harnessed, and why it is considered one of the most effective renewable energy sources for reducing carbon emissions and dependence on non-renewable resources;
- Learn the functioning and structure of solar panels, understanding the basic principles behind how solar panels convert sunlight into electricity. This includes grasping how photovoltaic cells capture solar energy and transform it into electrical power that can be used in homes, schools, and other settings.

ONECESSARY ASPECTS

The story and its activities require:

- an educator who will actively participate during the lesson;
- a display on which to screen the map during and after reading the story and to view the videos proposed for some activities;
- a computer/tablet with which children can carry out part of the activities and programming on Scratch (a free programming environment, with a graphical programming language);
- paper, pencils, scissors and glue.

Methodology

ATTENTION: Time o<u>f correction</u>

A mistake in STEAM is a fundamental moment: all mistakes teach something and from them we can learn and improve together. The error must be corrected in a positive way without any penalty (reprimand, negative judgement, etc.) The correction involves the whole group in searching for the best solutions and explaining the reasons (cooperative learning – collective intelligence).

NARRATION (STEP 1) - 5 min

The educator will read the story. During the narration the map will be projected on a screen and kids will be encouraged to participate.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON

During the lesson children will do block programming on Scratch. All activities will be led by the educator.

ACTIVITY 1 /VIDEO AND DISCUSSION - 10 min

The educator will show a video about the climate change and then they will start a discussion about the concept of clean energy. Children will be engaged with tought-provoking questions.

ACTIVITY 2 /DISCUSSION, VIDEO AND POSTER - 30 min

After emphasizing the importance of solar energy through a video and a collective discussion, the educator will help children creating a collaborative poster the topic explained.

ACTIVITY 3 /DISCUSSION AND VIDEO - 10 min

The educator will discuss with the class the use of solar panels, helping them to understand their use. At the end an explanatory video will be shown.

Air pollution and solar energy

) Step 1

The educator reads carefully the story to the children encouraging them to participate. In italics there are some suggestions for the teacher. In this phase, the educator will show the characterising elements of the map section that will be used for this fourth lesson. The students find their friends Leo and Lea at the top of the map with an astronaut suits: «Hello again friends so you wanna know why we cannot use coal energy anymore? So pick and read the card below.» The information below written on the card is:

1. The impurities in coal released into air after it is burned – carbon dioxide, colorless and odorless gas which traps the earth's heat in the atmosphere and the reason for earth's warming and climate change.

2. Carbon dioxide is produced naturally when we breathe and we do not need more in the air.

The students find the sun in the map and then they see on the sun it is written: flip me when they flip the sun they find the information below: «Kids I am one of the replacements to produce energy for you instead of the black monster.

My energy is called solar power. With the help of solar panels you can save and use my energy. My energy is endless and as long as I am alive I can produce enough energy for you to cook, warm your houses in the winter, light up your rooms and produce electricity for you and also with my energy you can go to vacations by train or other transportation and have a clean earth!»

«Now it's time to defeat the coal and put some solar panels on the top of the train so we can go on a vacation. Look at the robo, it will draw you in 4 shapes, recognize them and search around them to find the golden coins. When you find 4 golden coins, give them to your teacher and she will give you solar panels to plant on top of your train and start your vacation. Remember to plant as many solar panels as you can in the future to save a lot of energy and have a cleaner earth in the future.»

(In this phase the teacher will group the students into 4 different groups to search for the coins. They will draw simple shapes of the objects in which will be put the coins. Students will find them and plant the panels on the train and finish the game. They also can produce the sound of the train and play the train game)

Step 2

The educator helps children to carry out the block programming code on Scratch. During this lesson the class led by the educator will use block programming on Scratch following the steps explained in the fourth chapter of the dedicated additional pamphlet called **MAT8.** Coding literacy for the lessons. The tasks to complete are listed below.

ACTIVITY 1

The educator, after showing an explanatory video, introduces the concept of clean energy in a simple and clear way.

The video recommended here is in Italian but can be replaced with relevant videos in any other language. The educator begins by showing children a video titled *Cambiamento climatico per bambini* published on YouTube in 2022.

The educator then expands on the topic of climate change. They show visual aids, such as photographs or infographics, depicting the effects of air pollution and global warming—smog-filled cities, melting glaciers, and extreme weather events. These images help the children connect with the issue on both a local and global scale.

To make the concept relatable, the educator explains how daily activities, like driving cars, using factories, and burning fuels for electricity, release harmful gases into the atmosphere. They highlight the role of carbon dioxide and other greenhouse gases in trapping heat, leading to global warming. The educator uses a simple analogy, comparing Earth's atmosphere to a blanket: «A blanket keeps us warm, but if it gets too thick, we overheat—and that's what's happening to our planet.»

The educator encourages discussion by asking the children questions like, «Have you ever noticed hotter summers or fewer cold days?» or «What do you think happens to animals and plants when the weather changes too much?» These prompts help the children connect their personal experiences with the broader issue of climate change.

Shifting the focus toward solutions, the educator introduces the concept of clean energy. They explain how renewable energy sources, like solar power, produce electricity without polluting the air or harming the environment. To make it engaging, the educator shows a short animation or video clip about how sunlight is converted into energy through solar panels.

To conclude, the educator encourages the children to think of reasons why clean energy is essential for protecting the environment and our future. They suggest imagining a world powered entirely by renewable energy, free from pollution, and filled with cleaner air and healthier ecosystems.



Press the button to watch the video

ACTIVITY 2

The educator, after showing an explanatory video, starts a discussion about the solar energy.

Just like the previous activity, the video recommended here is in Italian but can be replaced with relevant videos in any other language. The educator begins this second phase by showing the children a new video on YouTube called *Che cosa è l'energia solare?*

Then they briefly revisiting the concept of solar energy, emphasizing its importance as a clean and renewable energy source. To make the session engaging, the educator provides a mix of preprepared materials, such as printed images, keywords, and simple definitions, along with blank paper and markers for the pupils to contribute their own ideas.

The class is divided into small groups, and each group is tasked with brainstorming what they've learned about solar energy. This might include its definition, how it works, its benefits (like reducing pollution), and examples of its use (such as powering homes or heating water). The educator encourages creativity, suggesting they think of solar energy as "energy from the sun that powers our world" or "a way to make electricity without smoke."

As the pupils work, the educator moves around the room, offering support and prompting deeper thinking. For example, they might ask, «What makes solar energy different from other types of energy?» or «Can you think of ways solar power helps nature?»

Once the brainstorming is complete, the educator gathers the class to create a collaborative poster or fill the blackboard with their ideas. Each group presents their contributions, and the educator helps arrange the pieces into categories, such as *What is solar energy?*, *How does it work?*, *Why is it important?*, and *Examples of solar power in action*. Drawings, diagrams, and colorful headings bring the display to life, making it both educational and visually appealing.

The activity concludes with a reflection led by the educator, who highlights the collective effort and the knowledge shared. The final product—whether a poster or a blackboard display—becomes a centerpiece in the classroom, serving as a reminder of what they've learned and inspiring further curiosity about renewable energy.



Press the button to watch the video

ACTIVITY 3

The educator starts a discussion about the solar panels then, then shows an explanatory video. The educator begins by inviting the class to gather in a circle or sit attentively to encourage an open and engaging discussion. They start by posing the first question, «Have you ever seen solar panels? Where?» allowing the children to share their experiences. Some may mention Just like the previous activities, the video recommended here is in Italian but can be replaced with relevant videos in any other language. spotting solar panels on rooftops, in fields, or even at school. The educator listens actively, nodding and validating each response to create a welcoming atmosphere.

Building on the discussion, the educator asks, «Does anyone among you have solar panels at home?» This question helps the children connect the topic to their personal lives, and those who do may share their experiences, such as seeing them on their roof or hearing their parents talk about saving energy.

Finally, the educator poses the thought-provoking question, «How do you think solar panels work?» Encouraging curiosity, they allow the children to hypothesize freely. Some might suggest that the panels "trap sunlight" or "turn the sun into electricity." The educator doesn't correct them immediately but instead uses their answers as a springboard to introduce basic concepts of how solar panels capture sunlight and convert it into usable energy through photovoltaic cells.

The educator then shows a YouTube video called *L'energia solare* that demonstrates the operation and use of solar panels.

As the discussion unfolds, the educator facilitates dialogue between the children, prompting follow-up questions like, «Why do you think the sun is a good source of energy?» or «How does using solar panels help the environment?» This not only deepens their understanding but also fosters critical thinking and peer learning.

The discussion wraps up with the educator summarizing the key points raised, linking them to the broader topic of clean energy and solar power. They encourage the children to keep an eye out for solar panels in their surroundings and think about how they play a role in a sustainable future. This activity serves as an interactive and reflective way to engage the class and build a foundation for more detailed lessons on solar energy.



Press the button to watch the video

GOOD JOB

PARTNERS



) Main partners



ITALY

The CISL Scuola (Confederazione Italiana Sindacati Lavoratori - Scuola) is the union of the staff of primary and nursery schools, secondary schools and vocational training of the CISL. It was founded in 1997 by the union of SINASCEL (National Union Elementary School) and SISM (Italian Union of Middle School).



ITALY

Sapienza University of Rome, (Department of Planning, Design, Technology of Architecture). Sapienza was founded by Pope Boniface VIII in 1303. It's one of the oldest universities in the world and the second largest University in EU, with 11 faculties, 63 departments, 111.000 students and more than 4.700 professors.

Ó All partners



ITALY

Pixel is an education and training institution based in Florence (Italy). Pixel was founded in 1999. Pixel's mission is to promote an innovative approach to education, training and culture, this is done mostly by trying to exploit the best potential of ICT for education and training.



ROMANIA

EuroEd Primary School includes a Kindergarten and a primary school. Both are accredited by the Romanian Ministry of Education. It promotes the EU dimension of education and it also encourages multiculturalism and multilingualism by providing education to children of different nationalities or ethnic groups.



PORTUGAL

The Agrupamento de Escolas Miguel Torga is a school located in Bragança, Portugal, an inland city of the country. The school consists of three buildings, two for preschool and elementary school and one for secondary and high school. There are 88 teachers, 2 psychologists and also a speech therapist.



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