RESPONSIBLE CONSUMPTION AND PRODUCTION: JUNKY PARK MUSEUM

Digital Educational Mat & Coding

START
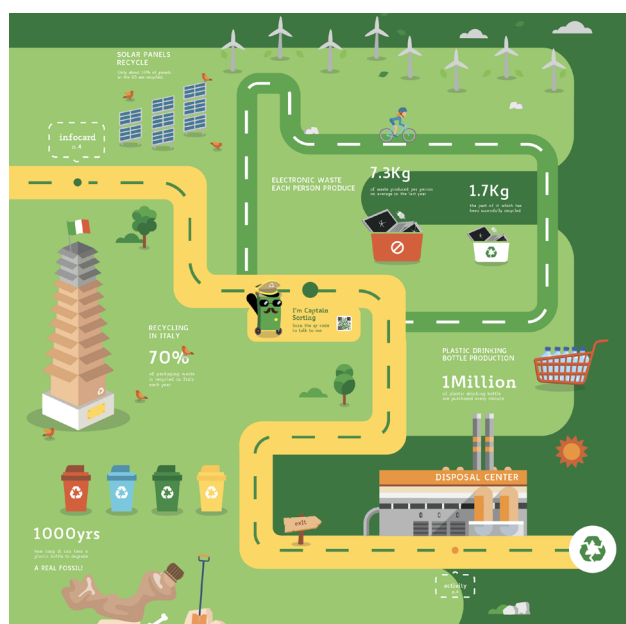
FINISH

CONTEXT ANALYSIS

SUPERMARKET

FRUIT SHOP

market

0

RESPONSIBLE CONSUMPTION AND PRODUCTION: JUNKY PARK MUSEUM

Teaching program set-up

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

Scenario

This project centers around the theme of the "7Rs" of sustainability— Refuse, Reduce, Reuse, Repurpose, Recycle, Recover and Rethink. Using an engaging fictional story set in a unique location, the Junky Park Museum, this project invites young learners to explore each "R" through creative storytelling and interactive activities.

The story follows Robbie, a hopeful, eco-conscious robot aspiring to become a full-time guide at the Junky Park Museum. Designed to inspire visitors, Robbie is on his final trial day to prove he has what it takes to guide guests through the museum's displays on sustainability. His mission is to educate a group of kids on the importance of environmental stewardship. By introducing the 5 core "Rs" in sustainable production and consumption, Robbie hopes to impress Captain Sorting, the strict but fair museum direc-tor, and secure his place as a permanent guide.

Throughout their adventure in Junky Park Museum, Robbie and the children encounter various helpers, each offering unique insights into sustainability. From Wasty, a fellow guide who specializes in waste reduction, to Tooly, the park's resourceful technician, and Shade, an engaged visitor with her own perspective on environmental issues, these characters guide the group through hands-on activities. At each stop, Robbie introduces them to practical ways of integrating the principles of Refuse, Reduce, Reuse, Repurpose, and Recycle into daily life.

As Robbie and the children learn together, they not only grow closer to their final destination but also gain a deeper understanding of their role in protecting the environment. By the end of their journey, students will have explored the museum's message of responsibility, gained knowledge, and had fun along the way - ultimately preparing them to be more mindful consumers and advocates for a greener future.

This project uses Robbie's story to create a meaningful, structured learning experience across four engaging lessons, each dedicated to exploring one or more of the 5Rs. These lessons are designed to be interactive, thought-provoking, and memorable, instilling young learners with knowledge that goes beyond the classroom and into the real world.

Involved subjects
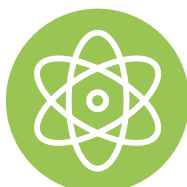
SCIENCE   CIVICS   TECHNOLOGY   ART

Pedagogical needs

This project offers a dynamic, hands-on experience that equips children with essential knowledge and skills for environmental awareness and personal growth. Below are the essential needs addressed:

- Builds awareness of environmental issues by showing the impacts of consumption habits and encouraging responsible choices;
- Promotes critical thinking as children engage in scenarios that require them to make choices and apply the 7Rs to real-life situations;
- Fosters empathy by connecting to Robbie's goal and exposing them to diverse perspectives on sustainability through various characters;
- Develops teamwork skills through group activities, emphasizing the collective responsibility needed for environmental change;
- Reinforces sustainable concepts through hands-on activities tied to each of the 5Rs, making learning interactive and memorable;
- Instills lasting sustainable habits by introducing the 7Rs repeatedly in fun, structured ways that children can apply in daily life;
- Encourages curiosity about the environment as children explore Junky Park's displays and learn how their choices affect the world.

Pedagogical objectives

The following objectives ensure that kids not only learn about sustainability but also gain practical skills and attitudes that will guide their future choices and inspire ongoing curiosity about the environment.

- Children will be able to clearly define each of the 7Rs and distinguish how each practice contributes to sustainability;
- Students will identify how everyday choices affect the environment;
- By the end of the project, children will have practiced at least one real-life application of the 5Rs;
- Learners will demonstrate the ability to choose environmentally friendly options when faced with everyday consumption decisions;
- Children will develop a sense of accountability for their actions' impact on the planet, making them more conscious of their role in environmental stewardship;
- Students will actively participate in group tasks, learning to collaborate with others to complete sustainability-focused challenges;
- The project will spark an interest in learning more about nature and ecology, encouraging children to continue exploring sustainability topics outside the classroom.

Methodology

The **DEMING CYCLE (PDCA Cycle)** is a method for implementing improvements continuously, test changes and solve problems.

PLAN	DO	CHECK	ACT
01	02	03	04
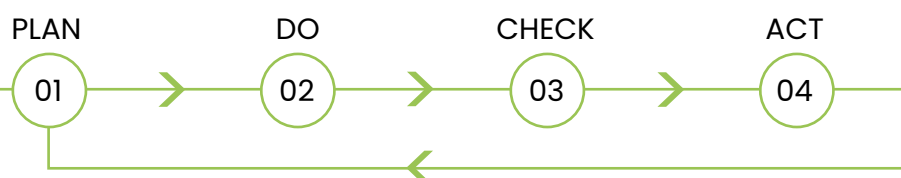
01_Plan and schedule teaching units/activities.

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.

REFUSE AND REDUCE

SUPERMARKET

FRUIT SHOP

market

1
LESSON

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 are designed to introduce students to foundational concepts of sustainable consumption, encouraging them to make more thoughtful, eco-friendly decisions in their everyday lives. These are:

- Identify key principles of the 7Rs of sustainable consumption. Students will be introduced to three core principles of the 7Rs, with a focus on understanding "Reduce" and "Refuse" in greater depth. They will be able to articulate what each principle means and why it is essential for environmental stewardship;
- Understand the importance of reducing superfluous purchases. Children will learn the concept of "Reduce" by exploring the environmental impact of overconsumption. They will understand the value of minimizing purchases of unnecessary items to conserve resources and decrease waste.;
- Recognize the value of refusing environmentally harmful products. Through discussion and examples, students will grasp the "Refuse" principle, learning to make mindful choices that avoid products harmful to the environment. They will understand how refusing certain items helps protect ecosystems and reduce pollution.

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).

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 AND DISCUSSION (STEP 1) - 10 min

This phase will be dedicated to the storytelling. During the narration the educator will project the map on a screen. At the end the educator will explain the topic of the lesson showing an explanatory video.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON

During the lesson children will do block programming on Scratch.

ACTIVITY 1 /DISCUSSION AND VIDEO - 15 min

The educator will start a discussion to deepen the theme of the first lesson. If necessary, an explanatory video will be shown.

ACTIVITY 2 /GAME ON SCRATCH - 30 min

The educator will help the children to participate in a simulated supermarket checkout. This activity will be further explained in the additional pamphlet.

1

Refuse and Reduce

Robbie is an aspiring guide inside the Junky Park museum, and you all (the pupils) *will have to help him pass the final tests before being hired.*

As they arrive at Junky Park Museum, the children will gather at the "Welcome Point," the museum's main introduction area. Here, the educator will warmly welcome them and set the tone for the day's journey, guiding them through the first part of the project's map and outlining the path they will follow.

The educator will then introduce Objective 12 of the United Nations Sustainable Development Goals (SDGs) from the Agenda 2030: "Responsible Consumption and Production." Using child-friendly language, the educator will explain that this objective focuses on how everyone—adults and children alike—can make choices that protect the planet by reducing waste, saving resources, and only taking what is needed. They will encourage the children to think about how their daily choices, like the things they buy and use, can impact the environment and what it means to be responsible consumers.

In order to make the explanation clearer the class will watch a video on YouTube about this topic called ***Responsible Consumption and Production. SDG 12. Sustainable Development Goals for Kids*** of 2023.

Press the button to watch the video

To engage the children actively, the educator will present a short discussion on what "responsibility" means in relation to the environment.

9

They'll ask questions like, «Why do you think it's important not to waste things?» and «Can you think of something you have at home that could be reused instead of thrown away?» This brief dialogue will encourage students to connect their personal experiences to the larger goals of sustainable consumption and begin thinking critically about their role in making a positive impact on the planet.

At the end of this step, children will have a basic understanding of the museum's layout, the purpose of the day's adventure, and an initial grasp of responsible consumption as they prepare to explore more specific sustainable practices throughout the museum.

They then move to the second point of interest in the map where the first character is presented: "Wasty", plastic bag and expert guide inside the museum.

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 first chapter of the dedicated additional pamphlet called **MAT10. Coding literacy for the lessons**.

In this specific part the educator will give a brief explanation on the use of Scratch, in order to recreate the story on the program together with the children.

ACTIVITY 1

In this phase, the educator, after presenting the story, explains the first two Rs. If necessary, the children will be shown an explanatory video.

The educator will introduce the children to two of the core Rs of sustainability: Refuse and Reuse. To make the concepts engaging and relatable, Robbie, the aspiring robot guide, will play a central role in helping the children connect these ideas to real-world scenarios.

Refuse: Saying No to Harmful Choices
The educator will explain that Refuse means saying no to items that are unnecessary or harmful to the environment, like single-use plastics or products made with toxic materials. Robbie will chime in (via an educator or interactive display) to share his "golden rule" of refusing: «If it's not kind to nature, it's not for me!»
To illustrate this, the educator will guide the children through a mini-decision-making game. Using visual aids such as flashcards or physical objects (e.g., a reusable bottle and a single-use plastic bottle), the children will decide which items to "refuse" and why. Robbie will encourage them by "reacting" (cheerful animations or messages) to correct answers, reinforcing positive behavior.

Reuse: Giving Things a Second Life
Next, the educator will explain Reuse, emphasizing how items can be used again instead of being thrown away. Robbie will share a personal anecdote (through storytelling): «When I was being built, some of my

parts were reused from old robots. That means I'm not just new—I'm part of a story!» This idea will help children see reusing as a creative and meaningful act.

To reinforce the concept, the children will participate in a quick hands-on activity. They'll be given common household items, like jars, old T-shirts, or boxes, and will brainstorm with Robbie how these items can be reused creatively—for example, turning a jar into a pencil holder or a T-shirt into a tote bag. Robbie will "cheer" them on, celebrating their creativity.

The educator will tie the two Rs together by showing how refusing harmful items leads to less waste, while reusing helps extend the life of what we already have. Robbie will conclude with an encouraging message: «Remember, every time you refuse or reuse, you're helping me and Junky Park make the planet a cleaner, happier place!»

At the end of the activity, children will not only understand Refuse and Reuse but will also feel empowered by Robbie's story and their own creative problem-solving. This foundation prepares them for deeper engagement with the remaining Rs as their museum journey continues.

If deemed necessary, the educator can show children a YouTube video entitled *The 7 R's of Waste Reduction*. Specifically, from min 4:45 to min 9:30, the 2 R's, Refuse and Reduce, are presented precisely and with appropriate language.
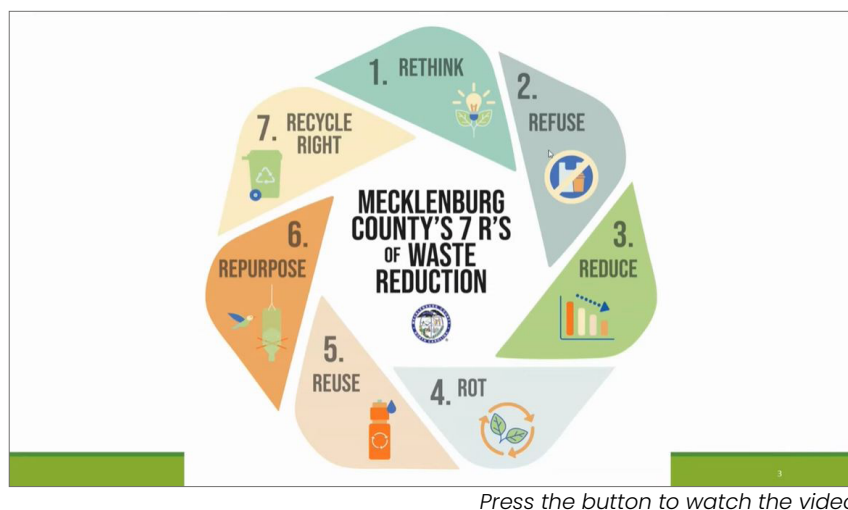
Press the button to watch the video

The children's journey through Junky Park Museum brings them to the interactive Supermarket Zone, where they are challenged to put their knowledge of sustainable consumption into practice. Here, they'll find a simulated supermarket checkout equipped with a Scratch-based digital game designed to teach them how to make environmentally friendly shopping choices.

The educator introduces the game by explaining its rules and purpose: the children will see a series of products appear on the screen

—some marked as organic, sustainable, or eco-friendly, and others as conventional items with a higher environmental impact. Their task is to decide which items should go into their shopping cart.

Using the game's sorting mechanism, they'll mark appropriate products (e.g., local fruits, reusable containers) in black and inappropriate products (e.g., plastic-wrapped goods, imported produce with a large carbon footprint) in red.

This interactive activity encourages critical thinking, as children analyze product labels, materials, and production details to determine their environmental impact.

Customizing the Game

After playing, children will have the opportunity to modify the game itself using Scratch's simple coding interface. Guided by the educator, they can:

- Add new products to the game, such as toys, snacks, or school supplies, along with details about whether they are sustainable;
- Adjust the game's rules or visuals to reflect their understanding of environmentally friendly choices.

This customization phase not only reinforces their grasp of sustainable shopping but also introduces them to the basics of coding and creative problem-solving.

By combining hands-on digital learning with group reflection, this activity empowers children to make thoughtful, sustainable shopping choices and equips them with practical skills they can use in their everyday lives. The blend of fun, technology, and critical thinking makes this an engaging and impactful experience.

REUSE

2
LESSON

supermarket

service repair

SERVICE REPAIR

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 learning objectives are directly linked to the project's narrative and aim to develop both scientific knowledge and social awareness.

- Children will learn the importance of Reuse as a key principle of the 7Rs, recognizing how giving new life to items extends their usefulness and reduces waste;
- Students will understand that careful reuse of materials or objects that might otherwise be discarded is an effective and sustainable practice to conserve resources and reduce pollution;
- Through guided exploration, children will be able to identify specific examples of how objects at home, school, or in the community can be creatively reused instead of thrown away;
- Working collaboratively, students will brainstorm and design initiatives to reuse common materials at school—such as repurposing paper for crafts, turning jars into storage containers, or creating a school-wide exchange program for reusable items.

These objectives ensure that students not only learn the value of reuse but also actively apply the concept through practical, meaningful actions that benefit their immediate 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).

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 AND DISCUSSION (STEP 1) - 15 min
This phase will be dedicated to the storytelling. During the narration the educator will project the map on a screen. At the end the educator will explain the topic of the lesson and possibly show an explanatory video.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON
During the lesson children will do block programming on Scratch.

ACTIVITY 1 /NEW INITIATIVES - 40 min
The educator will help the children to plan sustainable initiatives to implement at school in order to encourage their peers to learn the meaning of Reusing.

Reuse

The educator, together with the pupils, recaps what happened in the previous lesson.
The teacher tells the children what will happen in this second lesson, encouraging them to participate.
This lesson is aimed to introduce the topic of Reuse.
At the end of the explaination, the class will watch a video.

The children, accompanied by Robbie, move to the third point of interest. Here they find Tooly, a pneumatic girl who works in the museum as a repairwoman.

She welcomes the children to the Reuse Garage.

Here the children's task is to help the robot to find the missing pieces of its gear.

Robbie explains to the children, using a text box, that in the past it was thrown away when it no longer worked and that no one ever tried to repair it.

The teacher now gathers the children to introduce the concept of Reuse, emphasizing its significance as the fourth principle of the 7Rs. Through a dynamic explanation, they break down the key aspects of reuse and illustrate how this practice helps reduce waste, conserve resources, and protect the environment.

Key Points Explained

1. What Does Reuse Mean?

The teacher explains that Reuse means finding new purposes for objects instead of throwing them away. They highlight that reusing is not just about saving money but also about reducing the demand for new resources.

Example: «magine an old T-shirt. Instead of throwing it away, we could turn it into a bag or cleaning rags. That's reuse!»

2. Why Is Reuse Important?

The teacher discusses how reusing items reduces the amount of waste sent to landfills and lowers pollution from producing new items.

They might say, «When we reuse things, we give them a second life. This saves energy and resources that would otherwise be used to make something new.»

3. Everyday Examples of Reuse

To make the concept relatable, the teacher provides practical examples: reusing glass jars to store food or school supplies; passing down old books, toys, or clothes to others who can use them;

repurposing cardboard boxes for crafts or storage.

4. Creative Reuse

The teacher encourages children to think creatively, explaining that reuse can also mean transforming items into something entirely different.

Example: «An empty cereal box can become a magazine holder or a puppet theater with some imagination!»

To make the explanation interactive, the teacher poses questions like «Can you think of something you've reused before?» or «What's an item you could reuse instead of throwing away?» They may also share examples from their own lives or show images of creative reuse projects to inspire the children's thinking.

By the end of this explanation, the children will have a clear understanding of what reuse means, why it matters, and how they can practice it in their own lives. This foundational knowledge sets the stage for hands-on activities and initiatives later in the lesson.

If deemed necessary, the educator can show children the same YouTube video of the previous lesson: ***The 7 R's of Waste Reduction***. Specifically, from min 12:07 to min 13:53 the R of Reuse is presented.
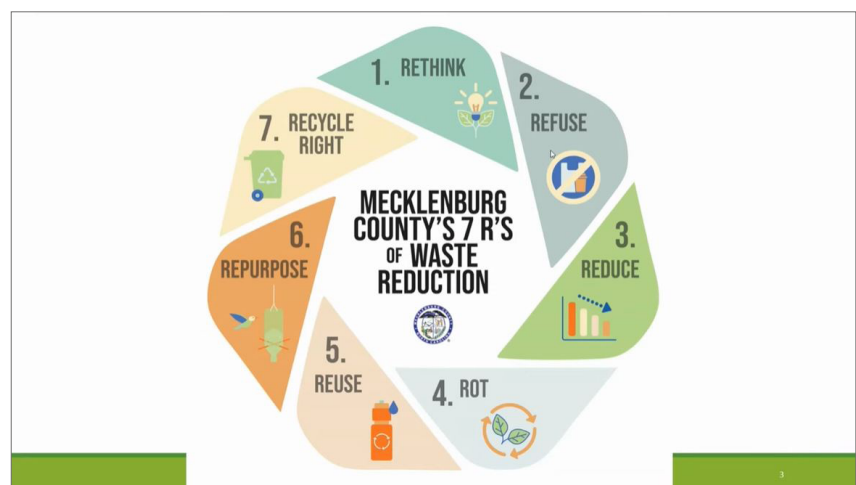
Press the button to watch the video

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 ***MAT10. Coding literacy for the lessons***.

In this phase the educator will help the children to plan sustainable initiatives to implement at school. Each part of the discussion will be guided by the educator who will let each child express themselves freely.

The educator introduces an exciting task where students collaborate to design initiatives for reusing materials or products within their school community. This activity can be done in small Scratch development groups or as a whole-class brainstorming session, depending on the classroom dynamic and resources available. The goal is to encourage creative, practical ideas that can be implemented at school to reduce waste and promote sustainability.

Steps to the Activity
1. Introduction to the Task
The educator begins by explaining that the class will work together to develop reuse initiatives that can make their school more eco-friendly. They emphasize how reusing items not only saves resources but also inspires others to think sustainably.

2. Examples of Reuse Initiatives
The educator shares specific examples to spark the students' creativity:
- Recycling and Reuse Programme: Establish collection points for recyclable materials like paper, plastic, and cardboard. These materials could be reused in art or science projects or donated to local recycling centers and charities.
- Book Exchange Center: Set up a dedicated area where students can donate books they no longer need and trade them for others. This reduces paper waste while encouraging a love for reading.
- Stationery Swap Corner: Create a spot where students can exchange gently used items like notebooks, pens, and rulers, giving these materials a second life.
- Creative Reuse Workshop: Organize regular crafting sessions where students repurpose materials like cans, fabric scraps, or old posters into new, useful items such as pen holders, tote bags, or decorations for the school.

3. Whole-Class Brainstorming
In a class-wide session, the educator facilitates a group discussion, encouraging students to build on each other's ideas. They can use a whiteboard or digital tools like Padlet to record suggestions.

4. Selecting and Planning Initiatives
After generating a list of ideas, students vote on the most promising proposals. They then create a basic action plan outlining the steps to implement the initiative, who will be involved, and how success will be measured.

At the end of the activity, the educator highlights the importance of teamwork and creativity in solving environmental problems. They encourage the students to take ownership of their chosen initiatives, reminding them that even small actions can have a big impact on their school and community.

This activity not only reinforces the concept of Reuse but also empowers students to become active agents of change, applying their knowledge to make a tangible difference in their surroundings.

REPURPOSE

Marcel Duchamp
Bicycle Wheel, 1913
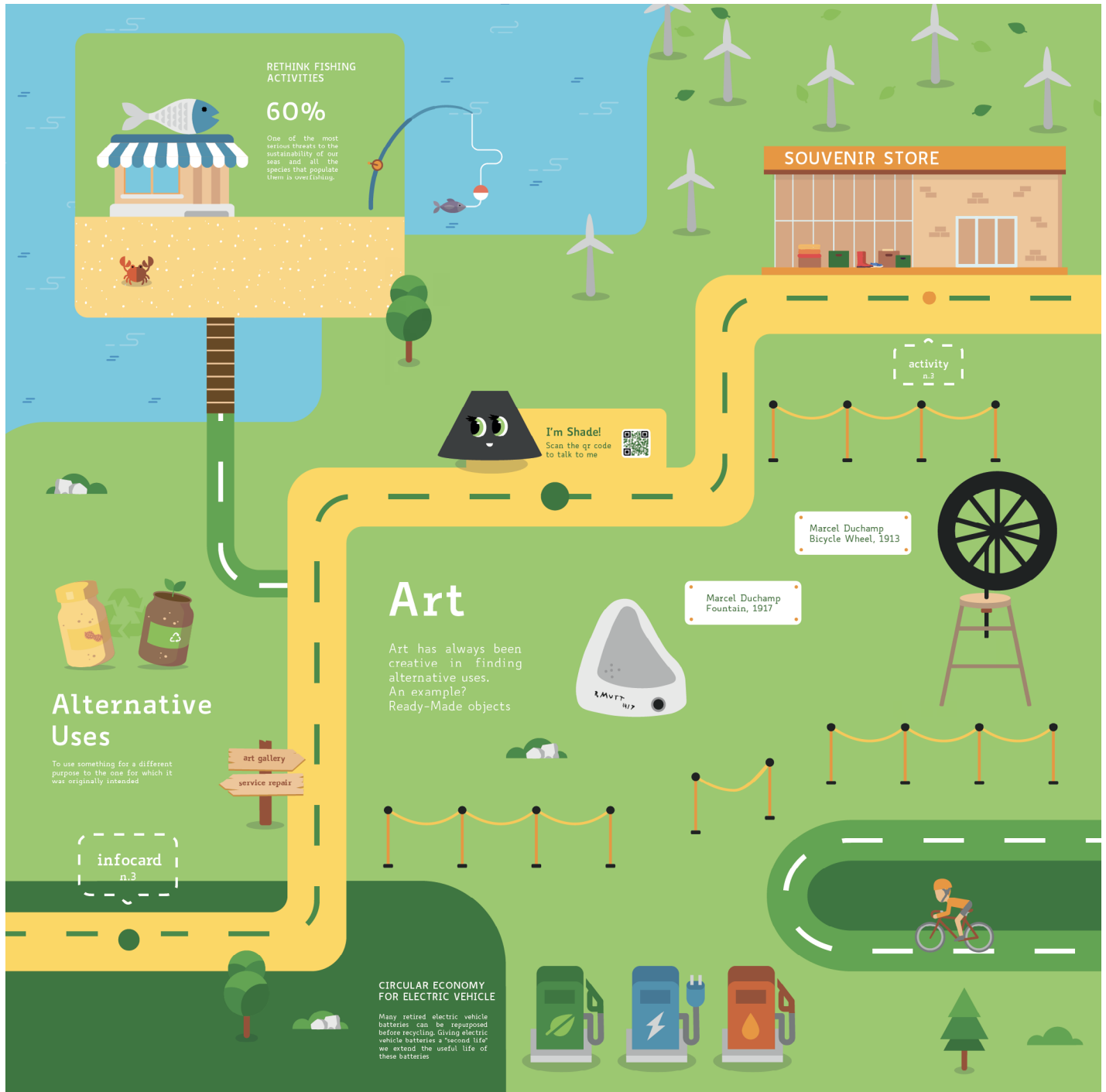
SOUVENIR STORE

Marcel Duchamp
Fountain, 1917

service repair

art gallery

3
LESSON

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.

RETHINK FISHING ACTIVITIES

60%

One of the most serious threats to the sustainability of our seas and all the species that populate them is overfishing.

SOUVENIR STORE

activity n.3

I'm Shade!
Scan the qr code to talk to me

Marcel Duchamp
Bicycle Wheel, 1913

Marcel Duchamp
Fountain, 1917

Art

Art has always been creative in finding alternative uses.
An example?
Ready-Made objects

Alternative Uses

To use something for a different purpose to the one for which it was originally intended

art gallery

service repair

infocard n.3

CIRCULAR ECONOMY FOR ELECTRIC VEHICLE

Many retired electric vehicle batteries can be repurposed before recycling. Giving electric vehicle batteries a "second life" we extend the useful life of these batteries

Pedagogical objectives

The following objectives ensure that students not only understand the principle of Repurpose but also develop the creativity and problem-solving skills necessary to apply this practice in their daily lives, contribu-ting to a more sustainable future:

- Children will learn that Repurpose means transforming items or waste that cannot be refused, reduced, or reused into something new and useful, helping to minimize their environmental impact;
- Students will explore how repurposing reduces the need for new resources, prevents waste from ending up in landfills, and contributes to protecting natural ecosystems;
- Through examples and hands-on activities, students will practice reimagining how objects such as jars, cardboard, or fabric scraps can be creatively transformed into new, functional items;
- Students will identify real-life scenarios where repurposing can be applied, learning to approach waste as a resource rather than a problem;
- By engaging in collaborative projects, children will enhance their ability to think innovatively, repurposing items in ways that align with sustainable practices and environmental respect.

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 sheets, pencils, scissors and glue.

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 AND DISCUSSION (STEP 1) - 15 min
This phase will be dedicated to the storytelling. During the narration the educator will project the map on a screen. At the end the educator will explain the topic of the lesson and possibly show an explanatory video.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON
During the lesson children will do block programming on Scratch.

ACTIVITY 1 /GIVE NEW PURPOSE - 40 min
In this phase children will have to imagine how objects such as a lampshade can take on new purposes in different environments. The educator will help each child to express themselves freely.

3

Repurpose

Children move to the fourth point of interest.

Here they find Shade, a lampshade that is visiting the Repurpose Center: he was thrown away in the garbage because its lamp holder was broken, and is visiting the Repurpose Center in hopes to find a new job.

He tells the children that his greatest desire is to return to furnish an environment, and asks them to help him.

He also tells them that he knows friends in the field of lighting who might be willing to help her if she can find an idea to refurnish an environment.

The teacher gathers the children to introduce the principle of Repurpose, emphasizing its importance in reducing waste and protecting the environment. Through engaging examples, stories, and interactive discussion, the teacher highlights how items that can't be refused, reduced, or reused can still have value when creatively transformed into something new.

Key Points Explained

1. What Does Repurpose Mean?

The teacher begins by asking, «Have you ever turned something old into something new? That's what we call repurposing!» They explain that Repurpose means taking an object or material and finding a new use for it, even if it was originally intended for something else.

Example: «A glass jar that used to hold jam can become a pencil holder, and an old T-shirt can be turned into a reusable shopping bag.»

2. Why Is Repurposing Important?

The teacher explains how repurposing helps reduce waste sent to landfills and cuts down the demand for new resources. They emphasize that repurposing is a creative and fun way to give items a second life while helping the planet.

Example: «When we repurpose something instead of throwing it away, we save energy and resources that would have been used to make a new item—and we keep waste out of the environment!»

3. The Difference Between Reuse and Repurpose

The teacher clarifies the distinction between Reuse and Repurpose. While Reuse involves using an item for the same purpose (like refilling a water bottle), Repurpose means giving it an entirely new function (like

turning that same bottle into a plant pot).

4. Everyday Examples of Repurposing

The teacher shares simple, relatable examples of repurposing to inspire the children:

- Turning cereal boxes into organizers or magazine holders.
- Using tin cans as planters for small flowers or herbs;
- Crafting old buttons into unique decorations for clothes or school projects.

They may also use visual aids, such as photos or videos, to show how seemingly useless objects can be creatively transformed.

5. Encouraging Creativity and Problem-Solving

The teacher encourages the children to think of items they've seen at home or school that could be repurposed. They might ask, «Can you think of something you've thrown away recently that could have been used for something else?»

They explain how repurposing not only helps the environment but also nurtures creativity and problem-solving skills by challenging us to see possibilities in unexpected places.

To reinforce these points, the teacher could invite the children to brainstorm ideas for repurposing common objects or present a "mystery item" (e.g., an old shoebox or a broken chair) and ask, «What new use could we find for this?» This interactive discussion engages the children's imaginations and connects the concept of Repurpose to their daily lives.

By the end of this explanation, the children will understand the meaning and importance of repurposing, feeling inspired to think creatively about how they can transform waste into useful and innovative items.

If deemed necessary, the educator can show children the same YouTube video of the previous lessons: *The 7 R's of Waste Reduction*. Specifically, from min 13:53 to min 15:42 the R of Repurpose is presented.
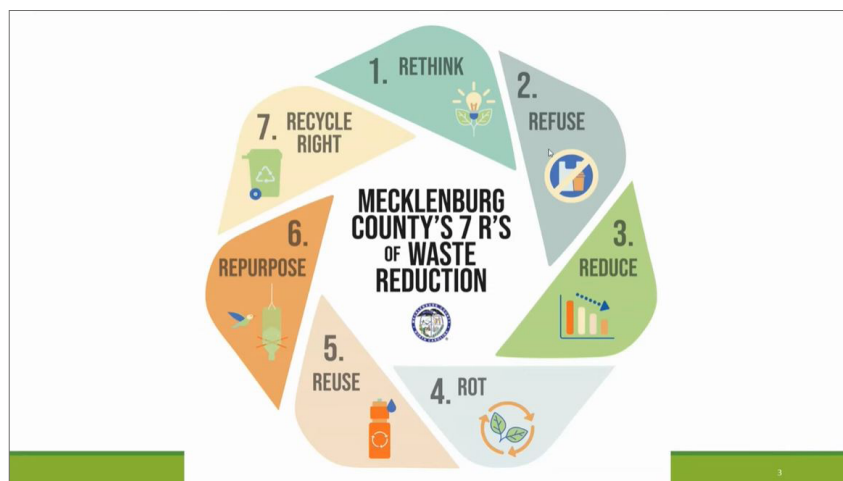
Press the button to watch the video

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 third chapter of the dedicated additional pamphlet called ***MAT10. Coding literacy for the lessons***.

ACTIVITY 1

In this phase each child will be encouraged by the educator to freely express his or her creativity.
The educator will guide each phase, especially the brainstorming phase, in order to preserve order in the classroom.

In this creative and imaginative activity, children will explore the principle of Repurpose by designing ways in which Shade, the lampshade character from the story, can refurnish or transform a space. This activity allows students to think innovatively, visualizing how objects like a lampshade can take on new purposes in different environments.

Step 1: Introduction and Brainstorming

The educator begins by introducing the activity, reminding students of Shade's character in the story—a lampshade eager to find new ways to brighten up the world. The teacher explains that the task is to imagine and draw a context where Shade could help refurnish a space creatively.

To inspire ideas, the educator facilitates a brainstorming session:
- Prompting Questions like "Where have you seen lampshades used before?", "What kinds of spaces could benefit from Shade's help?" or "How could Shade be combined with other objects to create something extraordinary?"
- Examples: A cozy reading corner in a library; an exhibition hall filled with unique lighting displays; an athletics stadium illuminated with an amplified version of Shade's light.

Step 2: Benchmarking and Inspiration Collage

To help the children visualize their ideas, they work in groups or individually to create a digital or physical collage using Canva (or similar tools). They gather images of different contexts where lampshades are used, such as homes, offices, event spaces, or outdoor areas.

The collage serves as a benchmark, sparking creativity and giving students inspiration for their designs.

Step 3: Drawing and Designing Proposals

With inspiration in hand, the children begin sketching their ideas. Each student or group draws Shade in a specific context, adding details about how the space would look and how Shade's new role would work.

Students are encouraged to think outside the box, considering how Shade might collaborate with other objects (e.g., a light amplifier or a reflective surface) to transform the space. They can use markers, colored pencils, or digital drawing tools to bring their ideas to life.

Step 4: Sharing and Presentation

Once the drawings are complete, each child or group presents their design to the class.

They explain their concept, the space they envisioned, and how Shade's retrofit contributes to the environment or the atmosphere of the space. Peers are invited to ask questions or provide positive feedback, fostering collaboration and critical thinking.

Learning Outcomes

Through this activity, children will:

1. Apply the concept of Repurpose in a creative and tangible way;
2. Develop brainstorming, collaboration, and design skills;
3. Explore the importance of context in design and how objects can be transformed to meet new needs;
4. Practice presenting ideas clearly and confidently to their peers;
5. This engaging activity not only enhances students' understanding of repurposing but also empowers them to see everyday objects as sources of endless possibility and creativity.

RECYCLING

4

LESSON

DISPOSAL CENTER

exit

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.

SOLAR PANELS RECYCLE
Only about 10% of panels in the US are recycled.

infocard
n.4

ELECTRONIC WASTE EACH PERSON PRODUCE

7.3Kg
of waste produced per person on average in the last year

1.7Kg
the part of it which has been sucessfully recycled

I'm Captain Sorting
Scan the qr code to talk to me

RECYCLING IN ITALY

70%
of packaging waste is recycled in Italy each year

PLASTIC DRINKING BOTTLE PRODUCTION

1Million
of plastic drinking bottle are purchased every minute

DISPOSAL CENTER

exit

1000yrs
how long it can take a plastic bottle to degrade

A REAL FOSSIL!

activity
n.4

Pedagogical objectives

The following objectives ensure that students not only grasp the technical aspects of recycling but also internalize its importance as a key practice in sustainable consumption, equipping them with the knowledge and habits to make environmentally responsible choices. These are:

- Children will learn that Recycling is the process of separating waste into streams and transforming materials that have already served their purpose into new products, helping to conserve natural resources and reduce environmental impact;
- Students will understand how recycling helps reduce landfill waste, save energy, and minimize pollution, making it a critical part of protecting the environment;
- Through practical examples, students will be introduced to the process of sorting waste into categories such as paper, plastic, glass, and organic matter to ensure materials are properly recycled;
- Students will learn how recycled materials are processed and repurposed into new products, gaining insight into the broader lifecycle of everyday items;
- Children will practice identifying recyclable materials in their daily lives and learn how to incorporate recycling habits at home, at school, and in their communities;
- By participating in recycling-focused activities, children will build a sense of accountability for their waste and understand the collective impact of recycling efforts on the environment.

Necessary aspects

The story is structured in blocks and requires:

- 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);
- used packaged products (like boxes of cereals, yogurts, etc.);
- paper sheets, pencils, scissors and glue.

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 AND DISCUSSION (STEP 1) - 15 min
This phase will be dedicated to the storytelling. During the narration the educator will project the map on a screen. At the end the educator will explain the topic of the lesson and possibly show an explanatory video.

CODING ON SCRATCH (STEP 2) - THROUGHOUT THE LESSON
During the lesson children will do block programming on Scratch.

ACTIVITY 1 /DISCOVER LABELS - 40 min
In this phase the children will have to read and understand the labels of some packages. Then the educator will facilitate a discussion and in the end the class create a poster or a chart illustrating what they've learned. If deemed necessary the educator will use other online resources such as video or scientific website.

4

Recycling

The children move to the last point of interest, where they meet Captain Sorting, the director of the museum, as well as a strict garbage bucket.

He shows the children a guide for reading the instructions to differentiate the products contained on the back of the packaging.

At the end of the activity the director will congratulate the children thanking them for having learned something useful for the whole world and the people of the future.

Robbie thanks the children in turn for helping him get the job he always wanted, and also for having repaired it.

In this session, the teacher introduces Recycle, the seventh principle of the 7Rs of sustainable consumption, emphasizing its importance in conserving resources and reducing environmental harm. Through interactive explanations, practical examples, and engaging discussions, the teacher helps students understand the key aspects of recycling and its role in a sustainable lifestyle.

Key Points Explained

1. What Does Recycling Mean?

The teacher begins with a simple definition: «Recycling is the process of turning waste into new materials or products.» They explain that recycling involves sorting waste into categories like paper, plastic, glass, and metal, so these materials can be processed and reused.

Example: «Imagine an old soda can. Instead of throwing it away, it can be melted down and turned into a brand-new can!»

2. Why Is Recycling Important?

The teacher explains the environmental benefits of recycling:

- Reducing the need for raw materials like trees, minerals, and oil.
- Lowering energy consumption compared to producing items from scratch.
- Decreasing the amount of waste sent to landfills and preventing pollution.

To engage the children, the teacher poses a question: «What happens to trash if it doesn't get recycled? Where do you think it goes?»

3. The Lifecycle of Recycled Materials

Using visuals, the teacher illustrates how recycling works:

- Collection: Materials are separated into waste streams (e.g., paper, glass, plastics);

- Processing: Items are cleaned and broken down into some raw materials;

- Creation: New products are made, such as turning old paper into notebooks or plastic bottles into clothing fibers.

Example: «Did you know that some park benches are made from recycled plastic bottles? Recycling can turn waste into something useful again!»

4.How to Recycle Correctly

The teacher explains that proper recycling starts with sorting waste into the right bins. They stress the importance of cleaning recyclable items to avoid contaminatio and knowing what materials can or cannot be recycled in local systems.

Example: «If you throw greasy pizza boxes into the paper bin, it can ruin the entire batch of recycling! Always check if it's clean and suitable for recycling.»

5. The Challenges of Recycling

To build awareness, the teacher briefly touches on the challenges, such as contamination in recycling streams or the difficulty recycling certain materials like mixed plastics.

They encourage students to think about solutions, asking, «What can we do to make recycling easier or more effective?»

To make the explanation interactive, the teacher uses props or visuals, such as examples of common recyclable and non-recyclable items. They might ask students to guess which category an object belongs to, prompting a discussion on why some materials are easier to recycle than others.

The teacher concludes by emphasizing that recycling is an essential step in reducing waste, conserving resources, and protecting the planet. They encourage the students to think of recycling as a shared responsibility, saying, «When we recycle, we all become part of a team working to give materials a second chance and keep our environment clean.» This foundational explanation prepares students for hands-on recycling activities and encourages them to adopt recycling practices in their daily lives.

If deemed necessary, the educator can show children the same YouTube video of the previous lessons: ***The 7 R's of Waste Reduction***. Specifically, from minute 15:42 till the end the R of Recycling is presented.
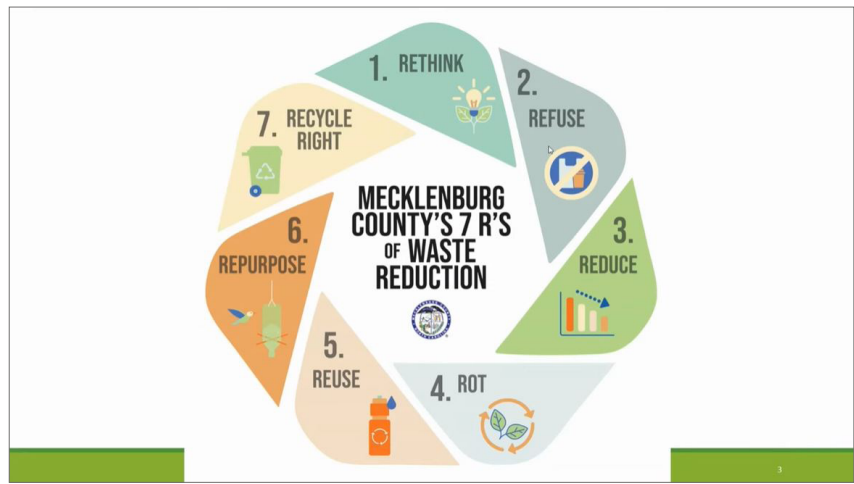
Press the button to watch the video

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 ***MAT10. Coding literacy for the lessons***.

ACTIVITY 1

This last phase requires active participation of the children who will have to read and understand the labels of some packages. The educator will guide the entire activity and, if necessary, will expand it using the links suggested at the end.

The educator begins by inviting children to take out food packages they have brought from home. Each package has a story to tell—not just about its contents but also about what happens to it after it's empty. The educator explains that every product's packaging holds important information, including its nutritional content and its potential for recycling.

1. Discovering the Labels:

The children are guided to locate the recycling symbol on the packaging. The educator demonstrates how these symbols indicate the material of the package (e.g., plastic, glass, paper) and explains which of these materials can be recycled in their local community.

2. Nutritional Labels:

Next, the educator transitions to the nutritional labels. The children are introduced to terms like calories, fats, proteins, and sugars. The educator emphasizes how reading these labels can also teach us about making healthier food choices.

3. Hands-On Reading Practice:

Working in pairs or small groups, the children take turns reading the labels aloud and pointing out both the nutritional information and the recycling details. They identify the symbols, discuss what they mean, and share any surprising discoveries.

4. Connecting Recycling to the Bigger Picture:

The educator facilitates a short discussion about the link between nutrition, waste, and the environment. For example: "What happens if we don't recycle this plastic bottle? How does making healthy food choices help us take care of the planet?"

To finish the activity, the children create a poster or a chart illustrating what they've learned. Each group might design a colorful guide featuring examples of common packaging materials and how to recycle them, alongside a reminder to check the nutritional labels for healthier eating.

If deemed necessary, the educator can show children an engaging YouTube video called *The Food Label and You: Game Show Review (Are You Smarter Than A Food Label?) (Historical PSA)* that shows in a funny way the importance of the topic.

Press the button to watch the video

This teaching unit, especially for the part relating to the labels of products on the market, can be enriched using many resources online. Below some of them.

Press the button to go to the website of a nutritionist
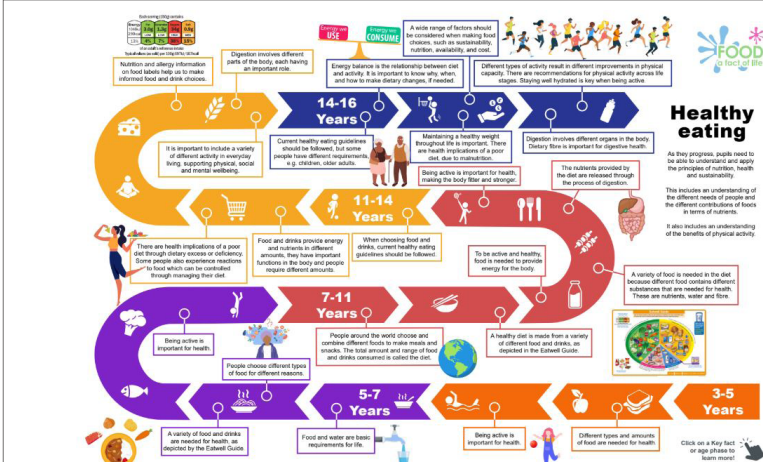
Press the button to go to the scientific website

Press the button to go to the interactive roadmap

PARTNERS

5

SPAIN

Esciencia is an SME based in Zaragoza established in 2006 as a spin-off of the University of Zaragoza. **Esciencia Eventos Cientí icos S.L.** is dedicated to the management and organization of science dissemination projects. The company offers both consulting services and the design of educational programs.

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.

All 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

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.

BULGARIA

Zinev Art Technologies Ltd. is a company developing, implementing and managing European projects and providing consultations in the spheres of culture, art, Internet-based activities and education, VET, e-learning and school education development, as well as regional development.