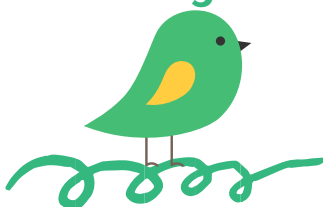




**Environmental Sustainability and Green Entrepreneurship
Competence-Building in Kindergartens**



**Pedagogical Sequences and Gamified
Activities on the topic of:**

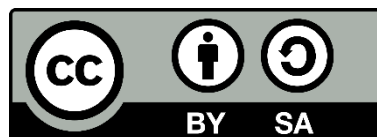
Air Pollution



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them. Project Code: 2022-1DE03-KA220-NI-22-2485094

Contents

Introduction	3
Pedagogical Sequences and Gamified Activities	4
Lesson1: Mr. Smoke, Villain Extraordinaire	4
Lesson 2: Team Clean vs. Mr. Smoke.....	9
Lesson 3: Clean Energy Sources Competition	15
Lesson 4: Mr. Smoke vs Planet Earth	20
Lesson 5: The Trial of Mr. Smoke	24
Lesson 6: The Warmer the Harder	29
Annexes.....	35
Annex 1 – Everyday activities	35
Annex 2.1. – Team Clean.....	36
Annex 2.2. – Mr. Smoke.....	39
Annex 2.3 – Pollution Sources	40
Annex 2.4 – Protecting Earth.....	41
Annex 3.1 – Cube	42
Annex 3.2 – Score Chart.....	43
Annex 4.1 – Board Game	44
Annex 4.2 – Mr. Smoke and Planet Earth.....	45
Annex 4.3 – Dice.....	46



This work is intended for educational purposes and is licensed under [Creative Commons Attribution -ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/) @The GreenGUARDENS Consortium.

Introduction

This pedagogic resource has been created within the framework of the [GreenGuardens Erasmus+ project](#). It addresses the fact that preschool children, most especially DHH (deaf and hard of hearing) ones, have limited to no opportunities to engage in activities pertaining to the enhancement of sustainability and entrepreneurship skills from a younger age.

The resource is directed at **kindergarten teachers** and is meant to help engaging children aged 3-6 years in gamified activities and experiments to understand their role in **environmental sustainability** and use competencies like decision-making, green responsibility, and initiative as triggers for early-on responsible & sustainable behaviour (short & long term).

The resource attempts to enable children to:

- Understand **the environmental impact** of different professions (e.g. farmer, fisherman).
- Learn about **good practices** that contribute to environmental sustainability.
- Discover the link between environmental sustainability and green entrepreneurship, shaping a **green entrepreneurial mindset** from early on.
- Comprehend **seemingly complex topics** through simple, familiar and playful activities.
- Engage in **interactive activities** where they will observe, learn and think through play and demonstrate knowledge through creative means.

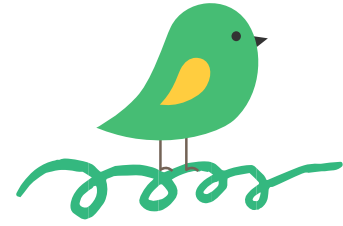
The resource tackles three main topics: **Ocean Pollution**), **Deforestation**, and **Air Pollution** (the present document). Each topic consist of 5-6 pedagogical sequences (lesson plans), containing everything a teachers needs to know in order to prepare a lesson with their students. The core of each lesson is a gamified activity, which helps bring about the subject to the children in an experimental manner. For quick finding of the activity, look for the GreenGUARDENS bird:



This resource is aimed at teachers familiar with the topics of environmental sustainability, green entrepreneurship, and inclusive education for deaf and hard-of-hearing students. Users of this resource can benefit from [Virtual Learning Lab \(VLL\)](#), which helps kindergarten teachers develop their sustainability and entrepreneurship competencies. The VLL modules include gamified micro-challenges that enhance teachers' core skills and produce a digital badge for learners upon completion.

Pedagogical Sequences and Gamified Activities

Lesson1: Mr. Smoke, Villain Extraordinaire



Description

Mr. Smoke loves ruining peoples' day – from causing them to cough to conjuring an impenetrable fog. But where does his power come from?



Learning Objectives

Upon completing the lesson, the learners should:

- Be familiar with the concept of air pollution through a story about Mr. Smoke.
- Explore the main sources of air pollution: vehicle emissions, fuel oils and natural gas to heat homes, industrial plants, agriculture/waste incineration.
- Identify food and energy production as key contributors.
- Establish the link between the polluters and everyday life items and behaviours, such as: cooking, transportation of food, and energy consumption.



Methodology

- Storytelling
- Brainstorming
- Explanation
- Conversation
- Problem-solving



Related subjects / thematic areas

- Science



SDGs addressed



Duration

- 35 minutes



Age of learners

- Kindergarten age (3 - 6 years old)



Level of difficulty

- Easy (no preparation required)



Prerequisites for learners

- None.



Preparation

- Printouts pictures (See Annex 1)



Materials needed

- Pictures or props representing everyday activities



Introduction

The teacher announces the theme to pupils by introducing Mr. Smoke. He loves ruining peoples' day – from causing them to cough to conjuring an impenetrable fog. But where does his power come from? Let's find out today. (5 min.)



Delivery of gamified activity

- Step 1: (5 min).

Mr. Smoke thrives on /draws his powers from the pollution created by people. Let's see where the pollution comes from. In a box there are several objects or images that can produce pollution and helps Mr. Smoke grow big. Each child can come and extract one image that will be discussed in the group. All the children pass by the box, one by one, and the discussion continues with all the images prepared.

- Step 2 (15 min)

All the children pass by the box, one by one, extract an image or an object (see Annex). They discuss the link between the image/object and air pollution. Children may propose alternative behaviour/object to reduce pollution and shrink Mr. Smoke. One by one all children pass by the box and extract an image/object.

- Step 3 (5-10 min)

The teacher reads a story involving air pollution.

Examples:

- Protecting the Planet, Hardcover - Louise A. Spilsbury
- Lobstah Gahden: Speak Out Against Pollution with a Wicked Awesome Boston Accent!, Alli Brydon
- <https://www.storyjumper.com/book/read/25427608/Air-pollution>
- any other book in kindergarten tackling the theme of air pollution.

Or invent a story taking into consideration the children's characteristics, such as: "The Great Food Adventure"

Once upon a time, in a town just like ours, there lived a group of lively friends. There was Ana, Darius, Oliver, and Maria. They all loved to play together and explore the beautiful world around them.

One sunny day, they decided to go on a Great Food Adventure. Their journey led them to a place called the Food Factory, where delicious smells wafted through the air. They were excited to see how their favourite snacks were made.

As they entered the Food Factory, they met Mr. Baker, a friendly chef who was busy baking cookies and cakes. The aroma was irresistible, and the friends couldn't help but feel hungry and wanted to buy all the food in the factory.

But soon, they noticed something strange. The air in the Food Factory wasn't as fresh as the air outside. It made the children wrinkle their nose and even cough a little. All of a sudden they weren't hungry anymore.

Curious, they asked Mr. Baker, Why is the air unpleasant here?

Mr. Baker explained, "Well, my dears, making all these delicious treats takes a lot of energy, and sometimes it can create pollution. The machines we use and the way we transport ingredients can release things into the air that air bad for the environment."

The children were surprised. They never thought that making their favourite snacks could affect the air they breathe. They thought, "Maybe we can find ways to make yummy food without hurting the air!"

Together, the friends brainstormed ideas. They decided to buy from local farmers to reduce transportation pollution and use energy-efficient machines. They also planted a garden outside the Food Factory to bring fresh air back into the environment.

As the days went by, the friends and Mr. Baker worked together to make the Food Factory a greener and cleaner place. Soon, the air was filled with the sweet scent of treats and the freshness of a clean environment.

They realized that even the food they love can have an impact on the world around them, so it is important to make choices that are good for both the tummies and the planet.

And so, with happy hearts and a cleaner world, the friends continued to play and explore, knowing they had made a positive change in their little corner of the world.

The end.



Closing

- Children express their opinion about the story. Together with the teacher they emphasise the impact of our choices and our activities on the planet. Children are asked to make a drawing of their favourite food. 10 min.



Follow-up

- Activity: Clean energy sources – competition game
- Activity: Mr. Smoke vs Planet Earth

- Activity: Team Clean vs. Mr. Smoke



Accessibility and inclusion

- Ensure that all materials and instructions are accessible to all children through visual cues, instructions, and sign language if necessary. Encourage hands-on exploration to enhance the learning experience. Make sure that the language of the story is accessible to the children in your class.



Sustainability Tips

- Print the pictures once and save them to avoid paper waste.
- Use recyclable materials for crafts activities.



Resources

- Damian, O. (2020). Pedagogie curativa in gradinita, PRESA UNIVERSITARA CLUJEANA
- Alois G., Frumos L., Raus G. (2016). Educatia speciala. Ghid metodologic, Polirom
- Canva tools https://www.canva.com/ro_ro/
- <https://sdgs.un.org/goals>

Lesson 2: Team Clean vs. Mr. Smoke



Description

What unlikely band of heroes has united to bring Mr. Smoke to justice? Meet Ms. Solar, her friend Windy, Mr. Waters who join forces to catch the nefarious joker.



Learning Objectives

Upon completing the lesson, the learners should:

- identify three clean energy sources: wind, solar, hydro by introducing the superheroes: Ms. Solar, Windy, Mr. Waters.
- identify 3-4 main sources of air pollution: emissions/fuels used for cars/planes, industrial plants, open waste burning, biomass/unsorted garbage, crowded cities, in the images.
- correlate the air pollution sources with the image of Mr Smoke
- associate the clean energy with the equipment that helps create it: the solar panels, the wind turbines, hydroelectric dams.
- produce characteristic sounds or movements for each of the superheroes presented.
- develop teamwork skills by cooperating in finding the images in the treasure hunt.
- discover the hidden elements in the classroom area as instructed by the teacher.
- organize the wall/corner of the superheroes using the materials found in the treasure hunt.



Methodology

- co-operative learning
- problem-solving skills
- explanation
- conversation



Related subjects / thematic areas

- Science



SDGs addressed



Duration

- 45 minutes



Age of learners

- Kindergarten age (3 - 6 years old)



Level of difficulty

- Advanced (other lessons regarding air pollutions should be taken prior: (Mr. Smoke, villain extraordinaire)
- Consolidation of knowledge



Prerequisites for learners

- Air pollution factors/sources
- Clean energy sources
- Healthy planet vs sick planet
- Energy / power



Preparation

- Print the images of the superheroes: Ms. Solar, Windy, Mr. Waters and the villain: Mr. Smoke and the images of solar panels, wind turbines, hydroelectric dams.
- Arrange a corner or a wall where children can easily arrange the materials found in the treasure hunt.
- Scatter the printed images of sources of energy in the classroom in accessible places but not very visible/obvious.
- Earth globe if there is one in your classroom.
- Poster of the superheroes protecting the planet Earth
- Prepare on computer the poster about air pollution



Materials needed

- Images with the superheroes: Ms. Solar, Windy, Mr. Waters, and the image for air pollution: Mr. Smoke
- Posters



Introduction

The teacher announces to the children that our planet is not feeling very well today so we need to call some superheroes to help her, and they also need their help to defeat Mr. Smoke. To do that we need to work with each other, to collaborate very well and to be very fast and efficient. So, we need to warm up our bodies to be prepared.

We begin with some warmup exercises for the head, the shoulders, the upper body, the arms, and the legs. We finish by shaking our entire body and we are ready to go.



Lesson delivery

- Step 1: (10 min)

The superheroes are introduced to the children one by one using accessible language and printed images. Children also meet Mr. Smoke that makes our planet sicker and sicker.

Children are told that some pollution factors make Mr. smoke stronger and our planet sicker. Children are asked to think about how each superhero helps the planet and fights against Mr. Smoke. For example: Mr. Solar is helping our planet by giving us light and warmth. He can provide us with as much power as we need, and thanks to the solar panels, we have clean energy that doesn't harm Planet Earth. Unlike the other sources, Mr. Smoke doesn't grow bigger from the energy generated by the solar panels, contributing to less harm to the planet.

Use simple language and visuals to reinforce the concept of clean energy sources.

We continue with the rest of the superheroes involving the children in composing the answers.

- Step 2 (5-7 min)

The mission begins. Mr. Smoke has hidden the clean energy sources in our classroom, so the superheroes are struggling to fight against it. Children are asked to make teams of 2-3 to find all the hidden images and bring them as fast as possible next to the superheroes they belong to.

All children are encouraged to work together and to cooperate with their pair(s). Encourage non-verbal communication, teamwork, and problem-solving. Celebrate each discovery with cheers and positive reinforcement.

In this stage the children are free to arrange the images as they consider, the teacher will not intervene in the placing of the pictures.

- Step 3 (10 min)

All children are called to return to their places and the teacher moderates the discussions based on their activity. All the energy sources and their characteristics are named, repeated, and properly placed next to the corresponding superheroes.

The teacher asks questions to make sure all the information is clear for everyone. At the end Mr. Smoke is replaced by a smaller version as he is not so strong anymore. Discuss the importance of clean energy and its role in protecting the environment.

- Step 4 (5-8 min)

The teacher presents on a computer the poster of the superheroes shielding the planet from Mr. Smoke. The discussions on the importance of clean energy sources is reopened. The children are asked to reproduce the poster using the printed elements (cut and glue).



Closing

Mr. Smoke is weaker now thanks to the children's work. Working together makes the superheroes stronger and the planet healthier. But every one of us is equally important and our individual contribution matters to the planet. A poster with the air pollution factors is shown to the children for them to differentiate easier between clean air and polluted air. Summarise the key points about clean energy sources and the importance of teamwork in protecting the environment.

Children are asked to draw planet Earth, or their favorite superhero presented today.

Assessment:

- Observe student participation in the treasure hunt and group discussions.
- Assess the accuracy of matching clean energy sources with their respective heroes.
- Evaluate the depth of understanding through student contributions during the discussion on the sources of pollution.
- Gauge their understanding through simple questions during the discussion.



Follow-up

- Gallery tour with the children's drawings
- Activity: Clean energy sources – competition game
- Activity: Mr. Smoke tries to get away
- Activity: Mr. Smoke, villain extraordinaire



Accessibility and inclusion

- Ensure that all materials and instructions are accessible to all children through visual cues, instructions, and sign language if necessary. Make sure that the hidden materials are accessible to reach for all children. Encourage hands-on exploration to enhance the learning experience.



Sustainability Tips

- Print the materials once and save them to avoid paper waste.



Resources

- Damian, O. (2020). Pedagogie curativa in gradinita, PRESA UNIVERSITARA CLUJEANA
- Meadow-Orlans, K. (1980). Deafness and child development. Berkley, CA: University of California Press
- Alois G., Frumos L., Raus G. (2016). Educatia speciala. Ghid metodologic, Polirom
- Canva tools https://www.canva.com/ro_ro/
- <https://sdgs.un.org/goals>

Lesson 3: Clean Energy Sources Competition



Description

In a follow up for the activity Team Clean vs. Mr. Smoke, children enter the battle for the most wanted clean energy source using a dice game to gather points for the 3 teams: Mr. Solar, Mr. Windy, Mr. Hydro.



Learning Objectives

Upon completing the lesson, the learners should:

- identify three clean energy sources: wind, solar, hydro by introducing the superheroes on the cube: Ms. Solar, Mr. Windy, Mr. Hydro.
- associate the clean energy sources with the equipment that helps convey the energy: the solar panels, the wind turbines, hydroelectric dams.
- engage in the competition underlying the importance of using clean energy sources for our planet



Methodology

- Co-operative learning
- Explanation
- Conversation
- Game



Related subjects / thematic areas

- Sciences



SDGs addressed



Duration

- 30 minutes.



Age of learners

- Kindergarten age (5 - 6 years old)



Level of difficulty

- Advanced (other lessons regarding air pollutions should be taken prior: (Mr. Smoke, villain extraordinaire, Mr. Smoke tries to get away). This activity is a follow-up for the activity: Team Clean vs. Mr. Smoke
- Consolidation of knowledge



Prerequisites for learners

- Air pollution factors/sources
- Clean energy sources
- Healthy planet vs sick planet
- Energy / power



Preparation

- Print the images with the cube, cut and glue to obtain a cube.
- Arrange a score chart on a table or the floor using tape or print it:
- If the season allows it, take the children outdoor to gather leaves for the score chart



Materials needed

- Cube
- Score chart
- Leaves
- Stickers for children as reward



Introduction

- The teacher announces to the children that the superheroes of the clean planet: Ms. Solar, Windy, Mr. Hydro want to know which is the most used. They brought help: the solar panel, the wind turbine, and the hydro dam. And they all need the children's help to determine the winner. Before we start, we need to warm up our bodies to be prepared for the competition. We begin with some warmup exercises for the head, the shoulders, the upper body, the arms, and the legs. We finish by shaking our entire body and we are ready to go.
3 min.



Lesson delivery

- Step 1: (3- 5 min)
The teacher summarises the importance of using clean energy to keep the planet healthy. Then, together with the children they establish which energy source belongs to which superhero: solar panels help Mr. Solar, the hydro dam is supporting Mr. Hydro and the wind turbine is in the team of Mr. Windy.

The teacher **demonstrates** the steps of the game: the cube is thrown into air, the side above will be identified as belonging to one of the 3 superheroes: Ms. Solar, Mr. Windy, Mr. Hydro and the winner will receive a point score in the score chart using green leaves. At the end of the game the children will count the leaves for each superhero and determine the winner.

- Step 2 (2-5 min)
The **trial game** will be played with a volunteer to identify misunderstandings regarding the game algorithm and clarify them.
- Step 3 (10 min)
The actual **development of the game**: One by one, the children will roll the cube, will identify the team of the superhero, and will give a leaf point to it. Each child will be accompanied by applause and the exclamation "bravo!!!" of the game partners.
- Step 4 (2-3 min)
The end of the game: children count the leaves for each team and determine the winner.



Closing

- Teacher resumes the discussion about clean sources of power and their importance for the health of the planet. The teacher uses the competition context to underline that any one of them can be the winner, but all are important. Children do get to choose their favorite based on the information they have discussed. All children receive small stickers for participation in the game. (5 min)



Follow-up

- Assessment:
 - Observe children's participation in the game and group discussions.
 - Assess the accuracy of matching clean energy sources with their respective heroes.
 - Observe the degree of engagement in the competition.
- Deliver the rest of the "Green GUARDens" lessons and activities.



Accessibility and inclusion

- Ensure that all materials and instructions are accessible to all children through visual cues, instructions, and sign language if necessary.



Sustainability tips

- Print the materials once and save them to avoid paper waste.



Resources

- Damian, O. (2020). Pedagogie curativa in gradinita, PRESA UNIVERSITARA CLUJEANA
- Alois G., Frumos L., Raus G. (2016). Educatia speciala. Ghid metodologic, Polirom
- Canva tools https://www.canva.com/ro_ro/
- <https://sdgs.un.org/goals>

Lesson 4: Mr. Smoke vs Planet Earth



Description

Mr. Smoke wants to get bigger and bigger. Planet Earth wants to get healthier. What kind of transportation can we use to help Planet Earth and shrink Mr. Smoke?



Learning Objectives

Upon completing the lesson, the learners should:

- Explore the role of transport in contributing to air pollution: the emission of cars, planes.
- Become familiar with alternative solutions such as: electric rides, use of public transport, use of trains, walking.
- Identify the means of transport that are helping the planet as alternatives to the polluting ones that increase pollution.



Methodology

- co-operative learning
- problem solving
- conversation
- game



Related subjects / thematic areas

- Science



SDGs addressed



Duration

- 30 minutes



Age of learners

- Kindergarten age (3 - 6 years old)



Level of difficulty

- Advanced (other lessons regarding air pollutions should be taken prior: (Mr. Smoke, villain extraordinaire, Competition clean sources, Team Clean vs. Mr. Smoke)



Prerequisites for learners

- Air pollution factors/sources
- Clean energy sources
- Healthy planet vs sick planet



Preparation for teachers

- Posters with earth (Planet Earth) and the pollution (Mr. Smoke)
- Prepare layers of pollution (smoke) in the form of grey wool or paper layers)

- Print the game board and the dice and assemble the dice (or use a ready-made one)



Materials needed

- board game,
- dice,
- Mr. Smoke, Planet Earth, layers of pollution



Introduction

The teacher announced to the class that Planet Earth is very polluted today and Mr. Smoke tries to get bigger and bigger. Children are going to play a dice game to see if they can help the planet.



Lesson delivery

Depending on the number of the class, the teacher can decide if more than one team is necessary, or they can all play together on a board game.

- Step 1: Children are presented the instructions of the game: Planet Earth has many layers of pollution and needs to shake them off. Every time they roll the dice, they count the bullets and step forward as many steps as shown. If they end up on a polluting transportation vehicles Mr. Smoke gets another layer of Smoke and gets bigger. If they end up on a green transportation vehicle Planet Earth shakes off one layer of smoke and gets healthier.
- Step 2: The game is demonstrated with the help of a volunteer.
- Step 3: Start of the game: the children take turns and play the game.



Conclusion

No matter if the planet manages to shade all the smoke layers or Mr. Smoke is getting bigger or smaller, at the end of the activity the children can observe the impact of every day choice in terms of means of transportation. Every child is asked which are their preferred transport vehicles, which one their family uses every day and which one we should use more often to help the environment.

Assessment:

- Observe children's participation in the game and group discussions.
- Assess the accuracy of matching green transportation vehicles with good health of the planet.



Follow-up

- Deliver other lessons designed under the framework of the Green GUARDens project.



Accessibility and inclusion

- Ensure that all materials and instructions are accessible to all children through visual cues, instructions, and sign language if necessary.



Sustainability tips

- Print the pictures once and save them to avoid paper waste.
- Use recyclable materials for crafts activities.



Resources

- Canva tools https://www.canva.com/ro_ro/
- <https://sdgs.un.org/goals>

Lesson 5: The Trial of Mr. Smoke



Description

Mr. Smoke has finally been brought to justice. But it turns out he wasn't bad, after all – he just wanted to help poor people. In this role-playing game, children take part in a court simulation, with the teacher in the role of the villain. The children need to find about his reasons and decide what to do with him.



Learning Objectives

Upon completing the lesson, the learners should:

- Be introduced to the ethical aspects of combating climate change
- Explore the vulnerable populations that stand to lose from 'green' policies and how we can help them



Methodology

- Role-play
- Gamified learning
- Discussion



Related subjects / thematic areas

- Science
- Civic Studies
- Ethics



SDGs addressed



Duration

- 40 minutes



Age of learners

- Kindergarten age (5 - 6 years old)



Level of difficulty

- Advanced (other lessons regarding air pollution should be taken prior: (Mr. Smoke, villain extraordinaire, Team Clean vs. Mr. Smoke, Clean Energy Sources Competition, Mr. Smoke vs Planet Earth.)



Prerequisites for learners

- Air pollution factors/sources
- Clean energy sources
- Healthy planet vs sick planet



Preparation

- Arrange the room so that a courtroom emerges – have a chair and a table where witnesses are allowed to testify, form two rows for the jury, and decide where the judge will sit.

- Distribute roles.
- Speak well in advance with the children who will take up a particular role and explain them what their role is. Consider the possibility to have each role played by two children (in case one is shy, or wants “his friend to play together”).
- Roles:
 - Mr. Smoke: the villain from the previous lessons. Because the role is more challenging, he should be played by the teacher.
 - Prosecutor. Presents the accusations – all the harm caused by Mr. Smoke (see Mr. Smoke, Villain Extraordinaire, and Mr. Smoke vs Planet Earth).
 - Judge. Calls the accused, the prosecutor, the attorney, and the witnesses in order, and invites the jury to discuss a verdict. Also carries a hammer.
 - Attorney. Calls the 3 witnesses. Also has to cry ‘objection’ when the prosecutor becomes too nasty to Mr. Smoke.
 - Ms. Heater. Witness. Wears a warm hat. Cares about making people’s homes warm in the winter. Mr. Smoke helped her when no one else would – because his coal is the cheapest energy source available.
 - Mr. Driver. Witness. Carries around a petrol can. Wants to help people get to their job and school. Mr. Smoke’s cars are simply irreplaceable – without them, people would have no way of moving around.
 - Ms. CEO. Witness. Wears sunglasses. Loves offering people jobs. Mr. Smoke was so generous to offer millions of places in coal mining, oil refining, and car building. So many people have enough to eat because of him.
 - Jury members. They need to hear out the witnesses and decide what to do with Mr. Smoke – send him to jail, or to be educated.



Materials needed

- Chairs and tables
- Costumes and props (if possible)



Introduction

- The teacher presents the court and calls out the roles. The rules of the simulation and explained – all must keep to their roles, respect the others and listen to them. The goal is to reach a verdict by consensus in the jury.



Lesson delivery

- Step 1: Mr. Smoke is being brought up to court. The prosecutor calls out the accusations.
- Step 2: Mr. Smoke is asked to describe their misdeeds. He does so in detail, crying, because he didn't mean to cause any harm.
- Step 3: The attorney calls out the 3 witnesses to explain that Mr. Smoke meant well.
- Step 4: The jury discusses what to with Mr. Smoke.



Conclusion

- Ask the children how they feel about Mr. Smoke now that they know more about him.
- Brainstorm on ideas how to help the people Mr. Smoke cares about without harming the environment.



Follow-up

- Consider another performance in front of the parents. Practice makes perfect.



Accessibility and inclusion

- Discuss with children prior to assigning roles. Find out who is most interested in participating. Make sure all shows of initiative are respected.
- If some of the children struggle with their roles, consider inviting a colleague to take on the role of the judge, or take it on yourself for more effective facilitation. Make sure whoever plays Mr. Smoke is not overwhelmed by the role.



Sustainability tips

- This role-play is a great opportunity to use recycled items for props and costumes.



Resources

- Mathesen Karl (2023). A warning for 2024: The losers of the green revolution won't go quietly. Politico: <https://www.politico.eu/article/climate-change-blowback-warning-losers-green-revolution/>
- Alden Timothy (2023). Must There Be Winners and Losers as We Go Green? Think Magazine: <https://thinkmagazine.mt/must-there-be-winners-and-losers-as-we-go-green/>

Lesson 6: The Warmer the Harder



Description

Applying relevant pedagogical theories that advocate that kindergarten topics should be chosen based on children's interests through conversations and interviews with them, the GreenGuardens project devised approaches to address the topic of climate change through air pollution, should this topic capture children's attention. Pre-school teacher can, naturally, discuss this topic with children, but they should continue with it only if children show curiosity and interest. Different aspects of this activity can, however, be used for some other topics within the same field which are interesting to children.



Learning Outcomes

Upon completing the activity, the learners should:

- Understand climate change and its effects.
- Become aware of the risks to the planet and species.
- Understand the need to combat climate change.

General objectives:

- Encourage children to seek answers to the posed questions.
- Enabling children to express themselves in a free and independent manner.
- Creating conditions for independent children activities.
- Developing readiness to exchange opinions, listen to others, discuss and reach conclusions.
- Encouraging children to express themselves verbally in communication with their peers.

Specific Objectives:

- To develop knowledge related to climate change and its effects.
- To identify risks to the planet and species.
- To encourage children to look for solutions to combat climate change.



Methodology

Project-based approach, which can, among other methods, include:

- Interactive activities: constructing toys and materials, building models and different activity corners, preparing exhibitions, etc.
- Discussions and demonstrations: memory game, expert guests (biologists, environmentalists, etc.)



Related subjects / thematic areas

- Environmental Protection
- Sustainability
- Civic Education



SDGs addressed



Duration

- As long as children have interest to tackle the topic, which can last between one day and several weeks. Very often, one topic can lead both children and pre-school teachers to another interesting topics, and pre-school teachers should always use children's interest to keep learning together.
- But we anticipate two or three days for this activity.



Age of learners

- Kindergarten age (5 - 6 years old)



Level of difficulty

- Medium – consider the previous knowledge and skills that children have acquired and the topics they have discussed. If they have already covered a topic similar to this one, remind the children about it and try to connect the new topic with the one already covered.



Prerequisites for learners

- None



Preparation

- Prepare – read materials about the air pollution and effect on everyday life and nature to start a discussion with the children
- Arrange the space in the classroom so that it is possible to work easily



Materials needed

- Paper, cardboard, cardboard boxes (use recycled ones)
- Crayons, temperas, scissors



Introduction

First, observe the children, listen to them, and take notes. If you are sure that the topic is interesting to the children, ask them some initial questions to understand how the children want to address the topic. Try to connect the topic of ocean conservation with a topic the children have discussed in previous activities about air pollution or with topics you have covered with them before.

The best introduction to this topic could be a visit to a park or some such places, observing the kindergarten environment, or if there are no conditions for this, maybe a nice animated movie (about the pollutions in oceans, for instance), a cartoon or something which can start a discussion.



Activity delivery

Suggestions how the activity could be done:

- **Step 1: Interviewing** children about the things they saw during field trip /or playing a short, animated video to introduce the topic (1 hour).
- **Step 2: Prepare materials and teams** – Invite the children to share their view of their environment by drawing plants, animals, transport vehicles, buildings or any creature or thing they come into contact with on a daily basis. Invite them to play a game (either in teams or as a group, depending on the purpose of the game; 2 hours).
- **Step 3: Game and learning** – Each team should think about what will happen to the objects in their pictures when the weather gets warmer. Then each team should present their illustrations and conclusions, and the others can present their opinions. If the children have decided to play together, let them present their opinion one by one, 2 hours).
- **Step 4: Discussion** – Initiating conversation with children and among children (what they liked the most/ the least; 1 hour).



Closing

- **Step 5: Reflection** – only for teacher (take notes about the process, what was interesting, what new questions have the children posed; what could be the new directions of tackling the topic; what can I do better tomorrow; what should I avoid doing, etc.)



Follow-up

- Pre-school teachers should take notes (write a diary of activities) in which they would emphasise the strengths and weaknesses of implemented activities, suggest possible solutions for a change or improvement, make recommendations for personal growth, etc.



Accessibility and inclusion

- Make sure that there is enough space for the activity and that all children can hear and see you clearly.
- Provide additional clarification to those who need it to understand the task.
- Adapt activities for children with special needs if you notice they need it



Sustainability tips

- Use recycled materials to make play props



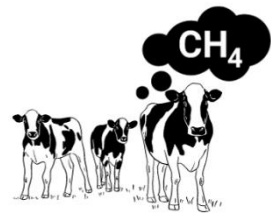
Resources

- National Geographic Environment. Effects of global warming. Available at: <https://www.nationalgeographic.com/environment/article/global-warming-effects> (Accessed November 14, 2023)
- European Commission, Climate change. Consequences of climate change. Available at: https://climate.ec.europa.eu/climate-change/consequences-climate-change_en (Accessed November 14, 2023)
- United Nations, Climate Action. Causes and Effects of Climate Change. Available at: <https://www.un.org/en/climatechange/science/causes-effects-climate-change> (Accessed November 14, 2023)
- NASA Climate Kids. A guide to climate change for kids. Available at: <https://climatekids.nasa.gov/> (Accessed November 14, 2023)
- UNICEF Parenting. Talking to your child about climate change. Available at: https://www.unicef.org/parenting/talking-your-child-about-climate-change?gclid=CjwKCAiA9dGqBhAqEiwAmRpTCwa8sudwCdPfCXVVBvbc9BiAUS-dePxuoMF8evBMe4_LGkVwRkj9xoCGrQQAvD_BwE (Accessed November 14, 2023)
- Marković, T. (2017). INTEGRATIVNA PRAKSA: Integrativni pristup vaspitnoj praksi u preškolskim ustanovama. Pirot: Visoka škola strukovnih studija za obrazovanje va

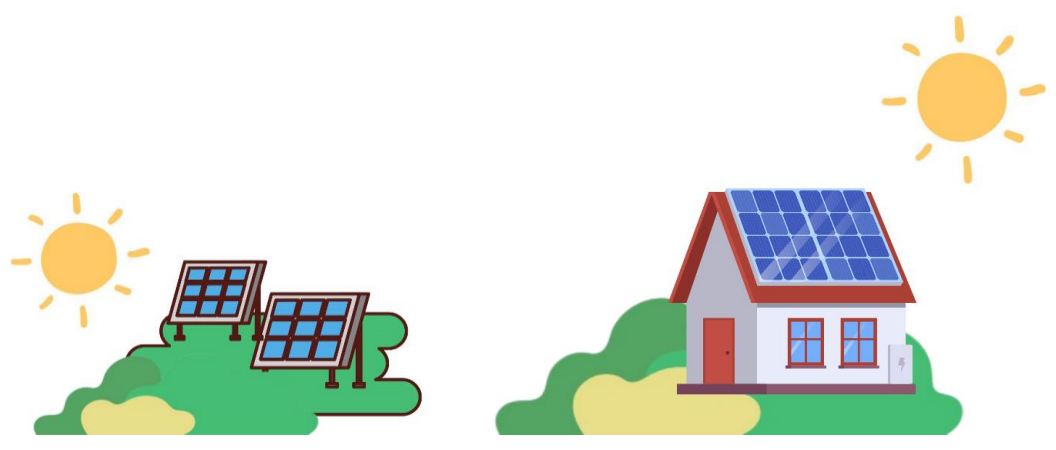


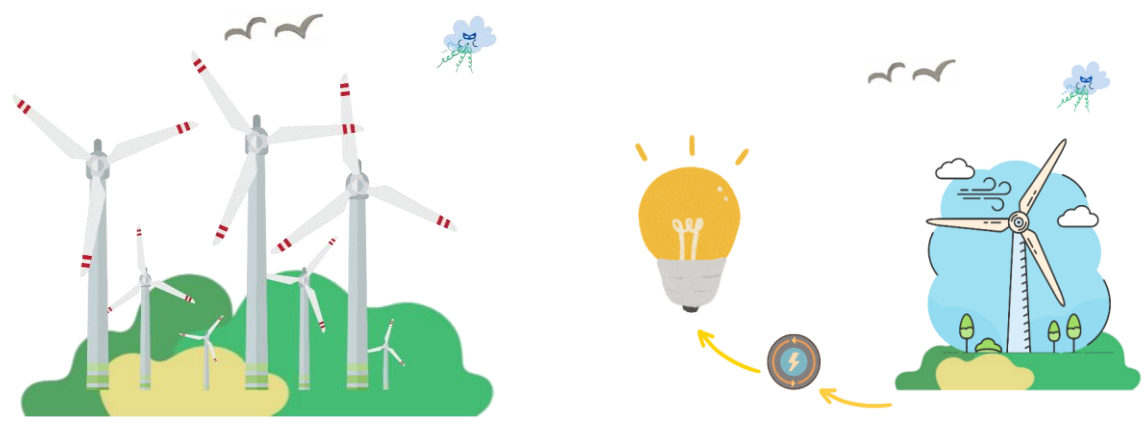
Annexes

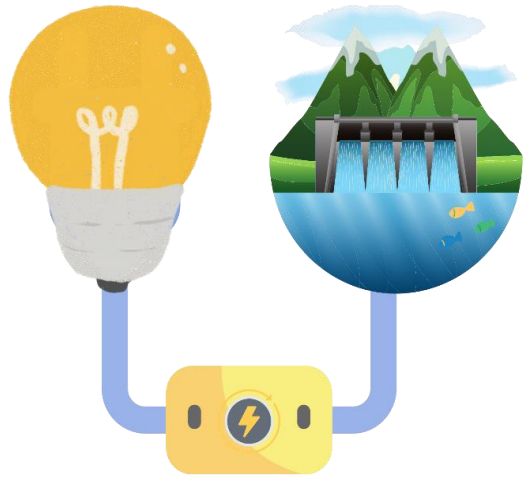
Annex 1 – Everyday activities



Annex 2.1. – Team Clean



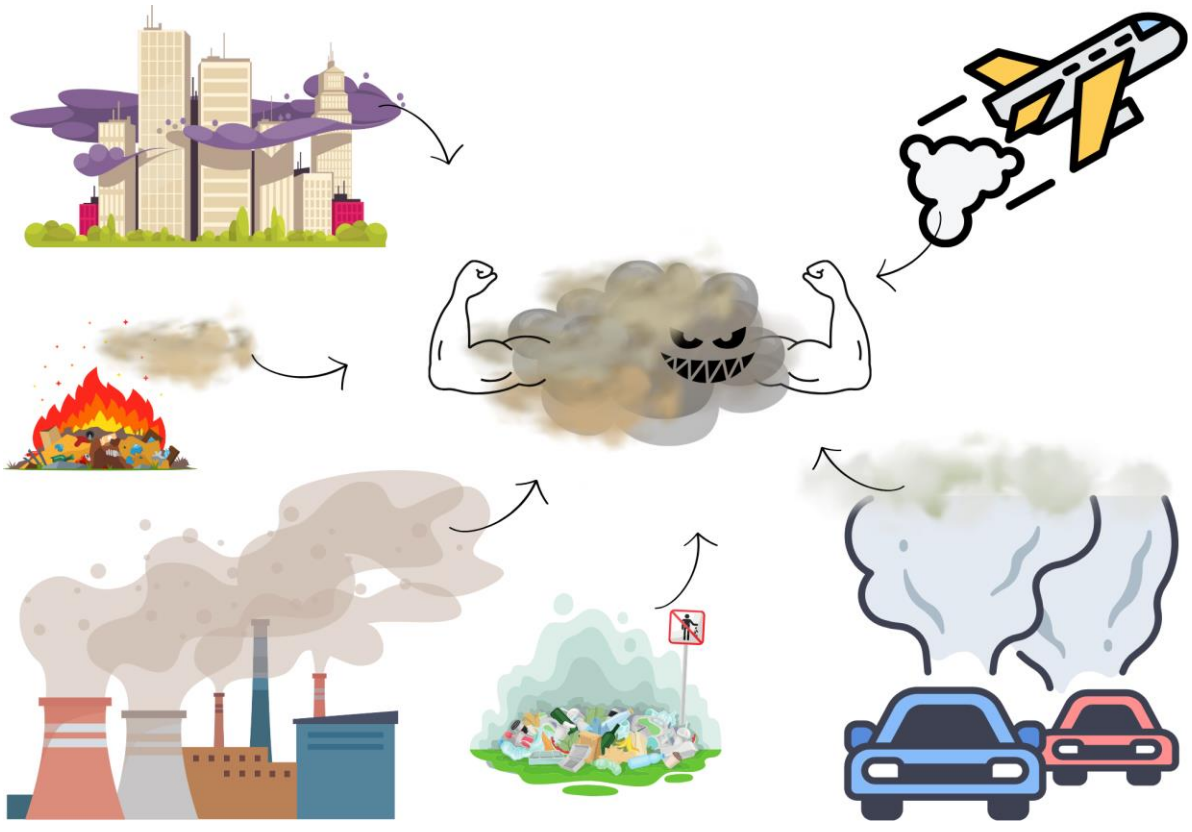
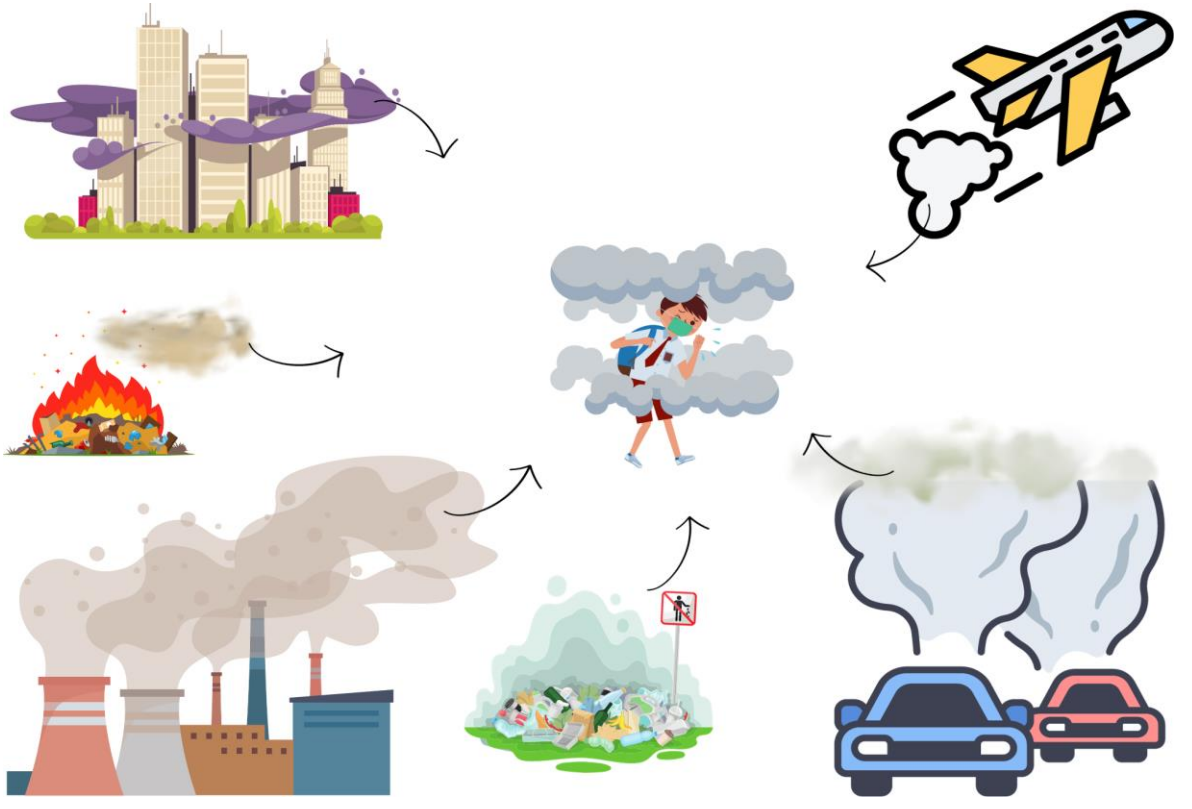




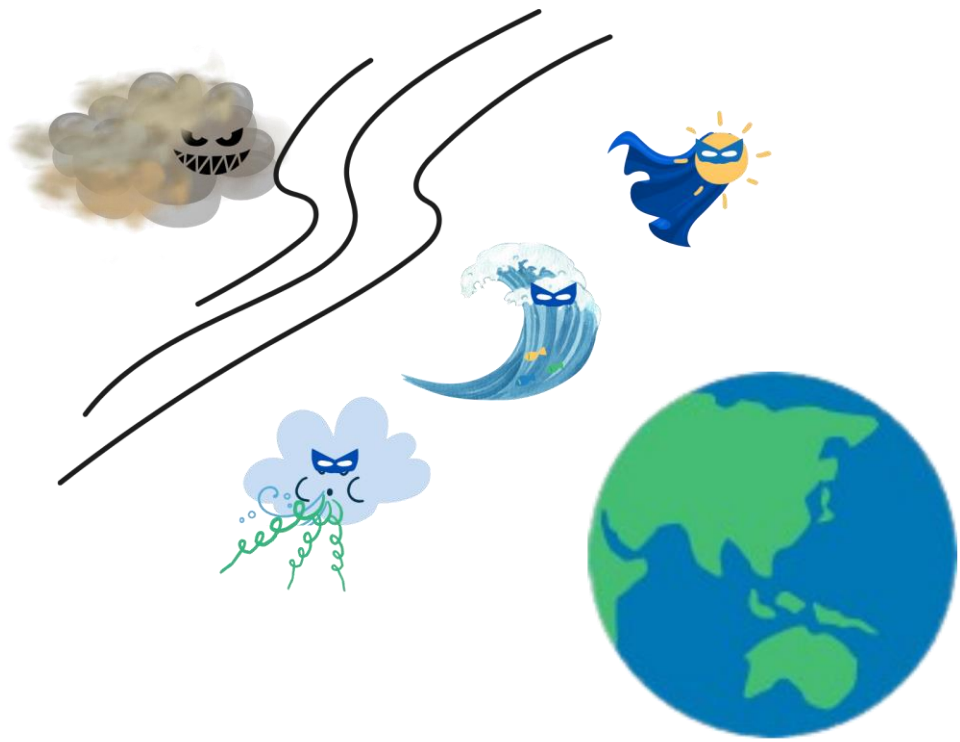
Annex 2.2. – Mr. Smoke



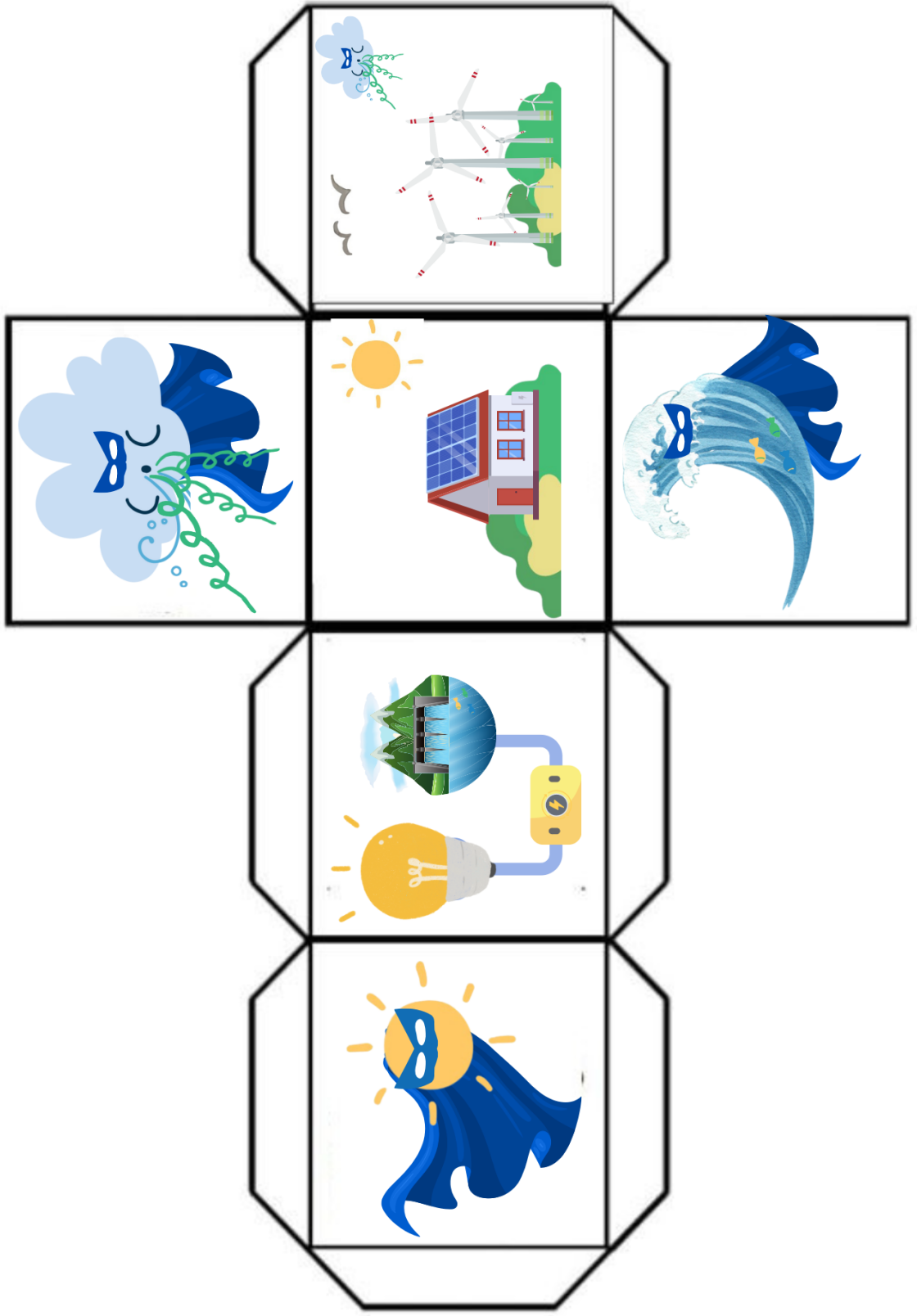
Annex 2.3 – Pollution Sources





Annex 2.4 – Protecting Earth



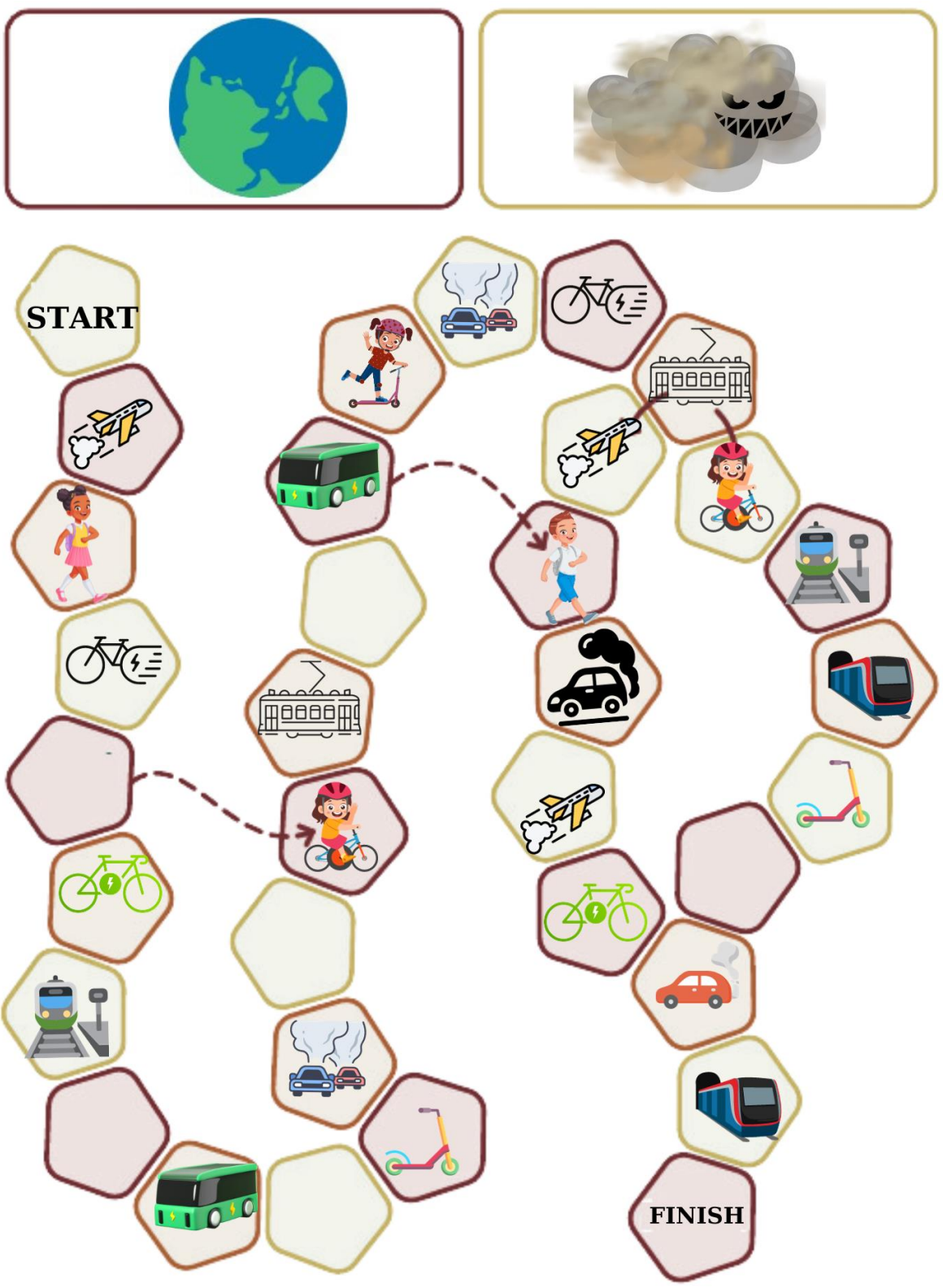
Annex 3.1 – Cube



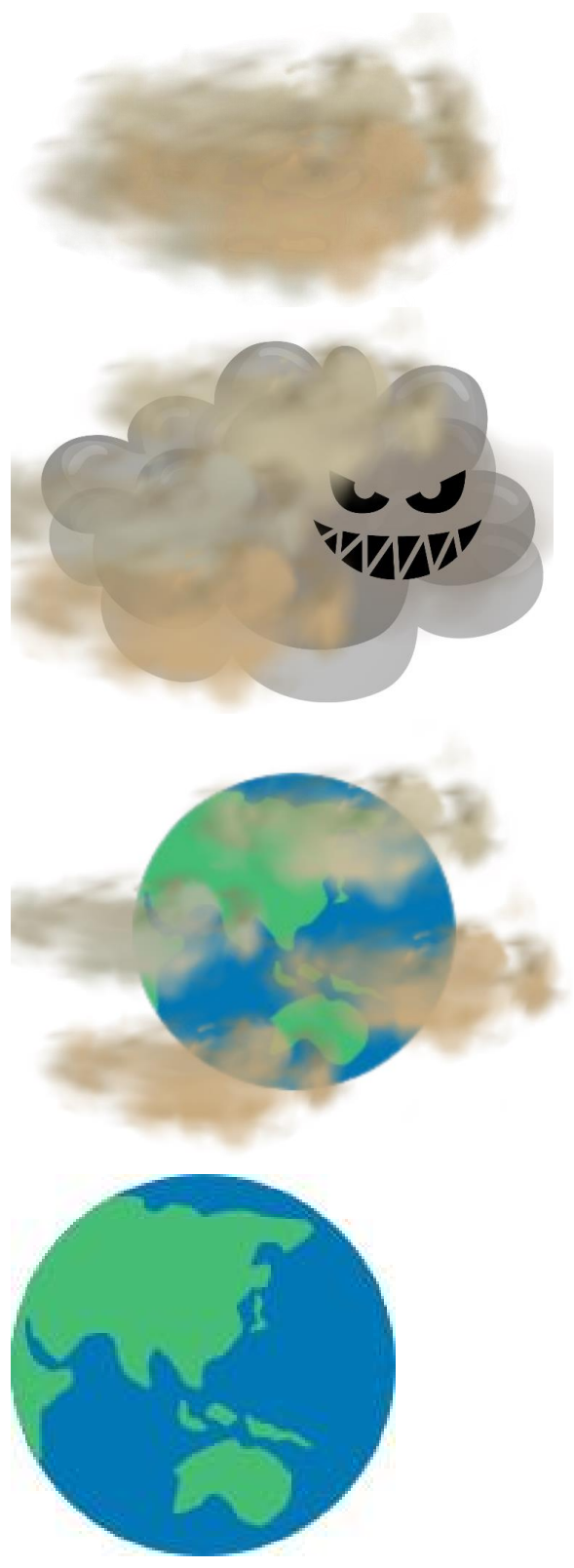
Annex 3.2 – Score Chart

Annex 4.1 – Board Game



Annex 4.2 – Mr. Smoke and Planet Earth



Annex 4.3 – Dice

