PLANET VIVO
ecosystem on alert

8+
YEARS

AN INNOVATIVE GAME ABOUT BIODIVERSITY

Erasmus+

GAMES
FOR
GOALS

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Le Partenariat realised this booklet with the following partners:

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Games for Goals

Games for innovative, global citizenship education for the Sustainable Development Goals, or 'Games for Goals', is a project financed by the Erasmus+ European Union programme. The project was created by a consortium of non-governmental organisations and higher education institutes from 5 European countries, and is led by the French NGO Le Partenariat.

It addresses school education and aims to support teachers, school leaders and other teaching professionals through the stimulation of innovative learning and teaching practices in primary education. It aims to achieve these objectives while focusing on topics related to global citizenship & sustainable development. Its end goal is to trigger individual and collective behavioural change towards the Sustainable Development Goals (SDGs).

The project (2022-2025) aims to provide teachers with turnkey educational activities (games), a catalogue of resources and a methodology on innovative education. The project was conducted with the participation of many local actors, including primary-school teachers and higher education students.

This booklet presents the second game created by the Games for Goals team: Planet Vivo! Find more information about our other resources see: www.gamesforgoals.eu

SUSTAINABLE DEVELOPMENT GOALS

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future.

At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries, both developed and developing, in a global partnership. They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and promote global partnerships that support sustainable economic growth – all whilst tackling climate change and working to preserve our oceans, woodlands and wildlife.

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
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source : https://sdgs.un.org/goals

Global citizenship education

Global Citizenship Education (GCE), or Education for Citizenship, is a teaching practice that has its roots in popular education. GCE encourages authentic contributions and exchanges via positive dialogue.

GCE is based on the idea that 'we are connected not just with one country but with a broader global community. So, by positively contributing to it, we can also influence change on regional, national and local levels'.

GCE is part of a long-term educational approach that values collective intelligence and cultural diversity, and encourages participants to take action and commit themselves to active citizenship. The idea is to raise awareness of global citizenship issues across all types of audiences.

One of the main methodologies used in GCE is active teaching, which consists of placing the participant at the heart of their learning, based on the premise that we learn best by doing.

GCE's approach is a vehicle for understanding the major challenges of our time (equality, human rights, the environment, etc.). The use of participatory teaching tools creates a learning environment that encourages discussion and stimulates collective intelligence.

Innovative education

Planet Vivo aims to enhance the innovative teaching of global citizenship and sustainable development in primary education across Europe.

By integrating the Sustainable Development Goals (SDGs) into the curriculum, children not only learn about these crucial objectives but also develop a sense of agency and empowerment.

The game achieves this through a pedagogy that is playful, holistic, and participative. By gamifying the SDGs, Planet VIvo makes these goals tangible and realistic, thereby fostering active participation and engagement among children.

Holistically and consistently designed, Planet Vivo offers a board game that appeals to the head, heart, and hands. It combines storytelling, arts, and embodied pedagogies with more traditional cognitive approaches. This diverse methodology ensures a well-rounded learning experience.

The game emphasizes conviviality, encouraging collaborative problem-solving and solidarity among students. Through this approach, Planet Vivo cultivates a supportive and engaging learning environment, preparing children to become informed and active global citizens.
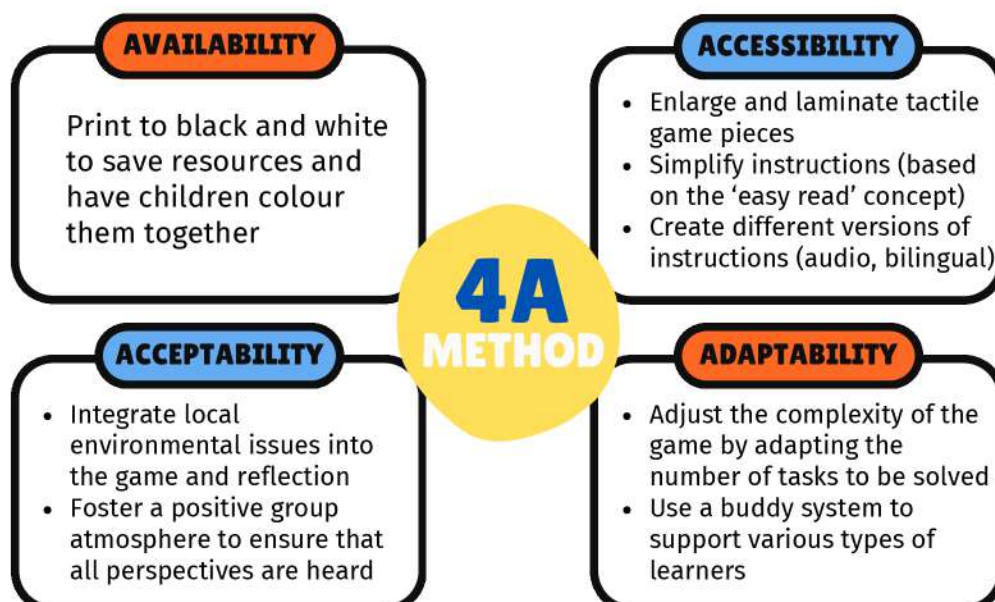
Inclusive education

Inclusive education ensures that every child, regardless of ability, background, or learning needs, can meaningfully participate in learning activities. This aligns with the principles of the UN Convention on the Rights of Persons with Disabilities (CRPD), which emphasizes the right to inclusive education for all, and which Aqua Heroes seeks to support.

Thus inclusive education needs to be implemented in a way that allows all students to participate. To this end, the game has been intensively tested in European classrooms to identify challenges and refine its design. Nonetheless, this type of print-and-play games for groups recognises its limitations, such as the reliance on reading, the cognitive demands of understanding complex concepts, less durable and tangible physical materials, a lack of audio or digital interactivity, time constraints, and group dynamics that may hinder full participation.

To address these issues, teachers can apply various frameworks to enhance inclusivity. For example, both the UN 4-A framework and the Universal Design for Learning (UDL) allow for theory-based and practical approaches to education that facilitate the participation of every child by recognizing their unique abilities and learning needs.

AVAILABILITY

Print to black and white to save resources and have children colour them together

ACCESSIBILITY

- Enlarge and laminate tactile game pieces
- Simplify instructions (based on the 'easy read' concept)
- Create different versions of instructions (audio, bilingual)

4A METHOD

ACCEPTABILITY

- Integrate local environmental issues into the game and reflection
- Foster a positive group atmosphere to ensure that all perspectives are heard

ADAPTABILITY

- Adjust the complexity of the game by adapting the number of tasks to be solved
- Use a buddy system to support various types of learners

Activity Sheet

🎯 LEARNING OBJECTIVES

- During the game, the pupils work collaboratively towards a common goal.
- The pupils understand our dependance on biodiversity, what threatens it and how to protect it.
- The pupils share reflections on their own relation to biodiversity.
- Together, the pupils plan actions for sustainable cooperation with biodiversity.
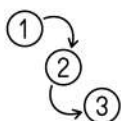
LESSON PLAN

- 10' : introduce the game and give the main instructions
- 30' : playtime on challenges in 5 groups
- 10' : groups come together for the final conclusion
- 15-30' : discussion

PREPARATION

- Cut all cards and puzzles pieces and laminate it.
- Set up the class with 6 tables, one central with the board and one for each group
  (Minimum 2 or 3 pupils per table, maximum 5 or 6)
- Place on each table, the group envelope with : the ecosystem ID card, a rule card, a set of 5 role cards, an animal pawn, an erasable marker (not provided).

💡 *If it's easier, you can display the board on a screen.*
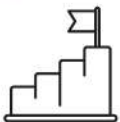
GOAL OF THE GAME

- Restore the five ecoystem by solving challenges and puzzles.

MATERIALS

- 1 board (or alternatively, 1 screen and 1 projector)
- 5 ecosystem ID cards
- 5 teams envelopes
- 25 challenge envelopes
- 25 sets of challenge cards
- 25 solution cards
- 25 puzzle pieces
- 1 timer + 1 ringing device
- 5 rule cards
- 25 role cards

ACTIVITY DESCRIPTION

In this game, the pupils are organised in five teams, each representing an ecosystem. The board represents these five ecosystems, in a poor condition and where biodiversity can't thrive. During the five round, the different ecosystems call for help and challenges are distributed to each group. In each group, the pupils are assigned a role so that the process goes smoothly (roles switch with every round).
When a group succeeds in a challenge, they receive a puzzle piece.

At the end, with all the pieces combined, the puzzle reveals an alternative situation to the one presented on the board: the different ecosystems have been restored (or damage has been stopped), and the pupils also get an inspiring message about the role they can play in safeguarding life in all forms around them.

Step 1 – emergency phone call

Machine: Ring, ring!

Teacher: Hello? Yes, this is classroom X! Oh, it's a call for help! This is the Ecosystem Y calling!

Teacher asks the representative of the given ecosystem to read out loud the call for help written on the ecosystem ID card (but not the ecosystem description yet).

Teacher: *Alright, we're on it!*

Teacher then asks the representative of the given ecosystem to read the description of the ecosystem written on the ecosystem ID card out loud.

Step 2 - challenge

Teacher commands ambassadors forward and hands over challenge sets.

An icon of a typical animal from each ecosystem is visible on the cards and envelopes so the teacher knows what materials need to go to each team.

Teacher starts the timer for 4 minutes. Teams have a reflection question on their solution card, so that they can keep busy until the time ends.

Step 3 – ending the round and preparing for next round

The Referee reveals the solution, compares it with the groupe's results and tells it to the teacher.

Material keeper collects relevant material (except puzzle pieces) and brings it to the teacher.

If correct, teacher hands over puzzle pieces. (text message puzzle piece for the team ecosystem corresponding round, and ecosystem pieces for the others teams)

Players switch roles clockwise.

The next rounds take place in the same way in the following order: Forest, Ocean, Grassland, Desert.

In the end, the students put together all the puzzle pieces to save the ecosystems and reveal the hidden message.

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A summary table of the rotations is provided page 16

INITIAL SITUATION - CONTEXT

Human behaviour is threatening our health! Humans are destroying the planet. They have cut down too many trees and are dumping all their rubbish in the seas. Even the polar bears can't make ice-creams anymore because the ice melts too fast. All sorts of ecosystems are now vulnerable; from the North to the South pole, in the oceans, rivers, lakes as well as in the forests, deserts, grasslands and tundra.. We need your help!

Dear representatives from the ecosystems, thank you all for answering my call and for bringing your powers to the extraordinary assembly today. I have received a number of emergency calls, I need your help to stop the damage being done to our ecosystems. Each of you has special skills and unique talents to offer. Now we need you to collaborate! Together, combining your powers into a superpower, we stand a chance to restore stability. Different types of power will need to be combined, so make sure you use different skills in the different missions.

FINAL SITUATION

The pupils are asked to solve their puzzle. They need to realise that they need to collaborate.

As a whole, the class reconstitutes five alternative images (one per ecosystem) and one inspiring message. The teacher can help by substituting the blank pieces (obtained after wrong answers) by the correct puzzle pieces (with image).

- How do you feel after this game ?
- What ecosystems have you tried to save? What are the main threat of each ecosystem ?
- What are the causes of these problems? What daily activities have an impact on the biodiversity ? How?
- What solutions did you find?
- What can you do individually to protect biodiversity ?
- What can you do all together to protect biodiversity ?
- Why is it important ?
- The game focuses on animals, but what else is it important to care for? Why?

SAVE BIODIVERSITY CHALLENGE

Reform the game teams.
Each team takes turns coming up with an idea to protect biodiversity.
The idea must be concrete and feasible for the pupils themselves!
If a team runs out of ideas or repeats an idea they've already stated, they are eliminated.
The last team standing wins the challenge!

You can ask pupils to choose a concrete and collective action to protect biodiversity: exhibition, waste collection, planting flowers, etc.

Challenges

5 challenges for each ecosystem in an envelope containing the required material.

3 types :

- Image analysis: Comparing images of nature and finding the differences
- Enigmas: Decoding a message with missing words, or a rebus.
- Links: Making connections between cards: reconstructing a chain in the logical order, or matching pairs.

"Image analysis" should be laminated as the pupils can cross out the differences on it. Links cards just need to be laid out in a specific position.

Solution cards

A solution card is provided for each challenge. It includes a reflection question to strat a debate in the groups.

The solution card is folded in a way that the answer is not immediately visible or readable. The referee must keep the solution secret until the time is up.

Puzzle pieces

The puzzle pieces are part of the alternative image of the ecosystems.

Each round, up to four puzzle pieces with an image can be distributed (enough to restore the whole ecosystem). The last puzzle piece consists of a part of a text message.

After the five rounds are completed, the pupils are asked to complete the puzzle. They need to understand that they have to collaborate with the other tables because each group has a part of the puzzle for each ecosystem, and a part of the text message. The teacher can help by distributing the missing pieces.

Role cards

Each round, in each team, distribute the 5 roles :

Ambassador: at the beginning and end of a round, return the old challenge to the teacher and collect the new challenge.

Referee: during the round, keep the solution secret. At the end of the round, check if the team has found the correct solution and say it to the teacher.

Silence keeper: during the round, check that all member participe in the exchanges, and make sure that the team respects the silence instructions.

Time keeper: during the round, watch the time and ensure that the team completes the challenge within the allocated time.

Material keeper: during the round, make sure no one damages the games materials. At the end of the round, erase the answers and put the challenge cards back in the same position as they were dealt.
⚠️ The puzzle piece(s) are the only cards that remain on the table.

The roles switch for every round: Ambassador > Referee > Silence keeper > Time keeper > Material keeper > Ambassador.

Additional elements

Timer: Any device that can help keep time, 4 minutes per round, managed by the timekeepers.
Rule cards: 5 rule cards describing in short the roles, the procedures, the game play.

Summary of rotations

	1 ARCTIC	2 FOREST	3 OCEAN	4 GRASSLAND	5 DESERT
	Ice cover change (image comparison)	Cattle / deforestation (logical links)	Microplastics (rebus/code)	Agricultural practices / soil quality (image comparison)	Desert types per continent (logical pairs)
	Foodchain poisoning (logical links)	Reforestation practices (image comparison)	Plastic pollution (logical links)	Poaching (rebus/code)	Urban development / artificialisation (image comparison)
	Greenhouse effect (logical links)	Mangrove (rebus/code)	Ecosystem resilience (image comparison)	Pesticide pollution (logical links)	Healthy/degraded landscape (image comparison)
	Competition between foxes (code)	Logging practices (image comparison)	Nutrient overload (logical links)	Habitat fragmentation (image comparison)	Invasive species (rebus/code)
	Permafrost (rebus/code)	Palm oil / deforestation (logical links)	Healthy/ degraded coral reefs (image comparison)	Overgrazing (code)	Habitat for birds (logical links)

🌍 Ecosystem

In Planet Vivo, we chose 5 ecosystem to play with.
Here is a short description of these ecosystems.

🌊 Ocean

The ocean covers more than 70% of Earth's surface. It is home to a wide variety of plants and animals, from tiny plankton to huge whales. Coral reefs, are like underwater cities full of colorful fish and other sea creatures. Oceans play a crucial role in regulating the Earth's climate by absorbing heat and carbon dioxide. They also provide food and resources for humans, such as fish and seaweed.

🌲 Forest

Forests can be found all over the world, from tropical rainforests near the equator to cold, snowy forests in the north. Forests are home to many animals, including birds, insects, and mammals like deer and bears. Trees in forests produce oxygen, which we need to breathe, and they help clean the air and absorb carbon dioxide. Forests also provide wood, fruits, and other resources that people use every day.

🏔️ Arctic

The Arctic is a cold and icy region around the North Pole. It is covered in snow and ice for most of the year and has very long winters and short summers. Despite the harsh conditions, many animals live in the Arctic, such as polar bears, seals, and Arctic foxes. The Arctic Ocean is also home to unique creatures like narwhals and walruses. The people who live in the Arctic, like the Inuit, have adapted to the cold and have a deep connection to the land and sea.

Ecosystem

Grassland

Grasslands are large, open areas where grasses are the main plants. Grasslands can be found on every continent except Antarctica. Grasslands are home to many animals, including herbivores like zebras and bisons, and predators like lions and wolves. These areas are important for agriculture because they have fertile soil that is good for growing crops. Grasslands also help prevent soil erosion.

Desert

Deserts are dry areas that receive very little rainfall. They can be hot, like the Sahara Desert, or cold, like the Gobi Desert. Despite the harsh conditions, many plants and animals have adapted to live in deserts. Cacti, for example, store water in their thick stems, and animals like camels can go for long periods without drinking. Deserts are also home to unique creatures like scorpions and lizards. People who live in deserts have developed ways to conserve water and stay cool in the heat.

This selection of ecosystems is not exhaustive, and we invite you to discuss about other ecosystems on the planet and their issues with your pupils (mountains, mangroves, tundra, rivers, etc.)

Biodiversity

Biodiversity refers to the variety of life on Earth, including different species of plants, animals, fungi, microorganisms, and the ecosystems they form. It is the foundation of essential ecosystem services that sustain life.

Conserving biodiversity is crucial as it supports services like pollination, water purification, climate regulation, and soil fertility, all vital for survival and well-being of many species, including humans. However, biodiversity faces several threats, including climate change, habitat destruction, pollution, overexploitation, and invasive species. Climate change alters habitats and affects the survival of species, while habitat destruction, such as deforestation and urbanization, reduces the natural spaces available for wildlife. Pollution contaminates air, water, and soil, harming organisms and ecosystems. Overexploitation through activities like overfishing and hunting depletes species populations, and invasive species can outcompete native species, disrupting ecosystems.

SDG 13 promotes actions to combat climate change and enhance ecosystem resilience, SDG 14 focuses on conserving marine ecosystems by addressing pollution and overfishing, and SDG 15 aims to protect and restore terrestrial ecosystems, manage forests sustainably, and halt biodiversity loss. Together, these goals address key threats to biodiversity and promote sustainable practices to preserve it.
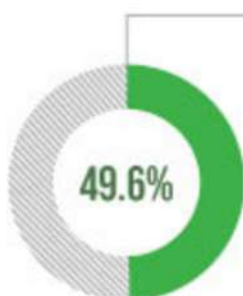
Biodiversity

10 MILLION

HECTARES OF FOREST ARE DESTROYED EVERY YEAR

ALMOST **90%** OF GLOBAL DEFORESTATION IS DUE TO **AGRICULTURAL EXPANSION**

49.6%
CROPLAND EXPANSION

38.5%
LIVESTOCK GRAZING

133 PARTIES HAVE RATIFIED **THE NAGOYA PROTOCOL,** WHICH ADDRESSES ACCESS TO **GENETIC RESOURCES** AND THEIR FAIR AND EQUITABLE USE

BIODIVERSITY **IS LARGELY NEGLECTED** IN COVID-19 RECOVERY SPENDING

AROUND **40,000 SPECIES** ARE DOCUMENTED TO BE **AT RISK** **OF EXTINCTION** OVER THE COMING DECADES

NEARLY HALF OF FRESHWATER, TERRESTRIAL AND **MOUNTAIN** KEY BIODIVERSITY AREAS **ARE PROTECTED**

%

40

20

FRESHWATER

TERRESTRIAL

MOUNTAIN

2000   2021

📓 Dictionnary

Biodiversity : all the different kinds of animals, plants, fungi, and microorganisms like bacteria that make up our natural world. Each of these species and organisms work together in ecosystems, to maintain balance and support life. Biodiversity supports everything in nature that we need to survive: food, clean water, medicine, and shelter

Ecosystem : It is a group of living organisms that live in and interact with each other in a specific environment. For instance, tropical forests are ecosystems made up of living beings such as trees, plants, animals, insects and micro-organisms

Climate change : It is the process of our planet heating up.
Scientists estimate that human activity has caused the Earth to warm. The changing climate will actually make our weather more extreme and unpredictable. As temperatures rise, some areas will get wetter and lots of animals and humans could find they're not able to adapt to their changing climate.

Artificialisation of soils : Soil artificialisation is the transformation of natural, forest or agricultural soils into urban spaces (housing, public parking lots, parks, sports fields, etc.). It is one of the main causes of climate change and the erosion of biodiversity.

Deforestation : It is the process of clearing or cutting down forests. In recent decades, the number of forests being lost to deforestation has grown massively. Forests are the most important kinds of ecosystems on our planet and are crucial for the health of all living things.

🔗 Ressources

Vidéo WWF : What is biodiversity?

Unicef : why biodiversity is important for children?

6 activities to raise children's awareness of biodiversity protection

Teaching tools about biodiversity

Game materials

Download game materials on the website:

https://gamesforgoals.eu/results/

Game Materials

Impact questionnaire

Download this booklet in an other language

Dutch   English   German   Portuguese   French

Find all the contents of the project on www.gamesforgoals.eu