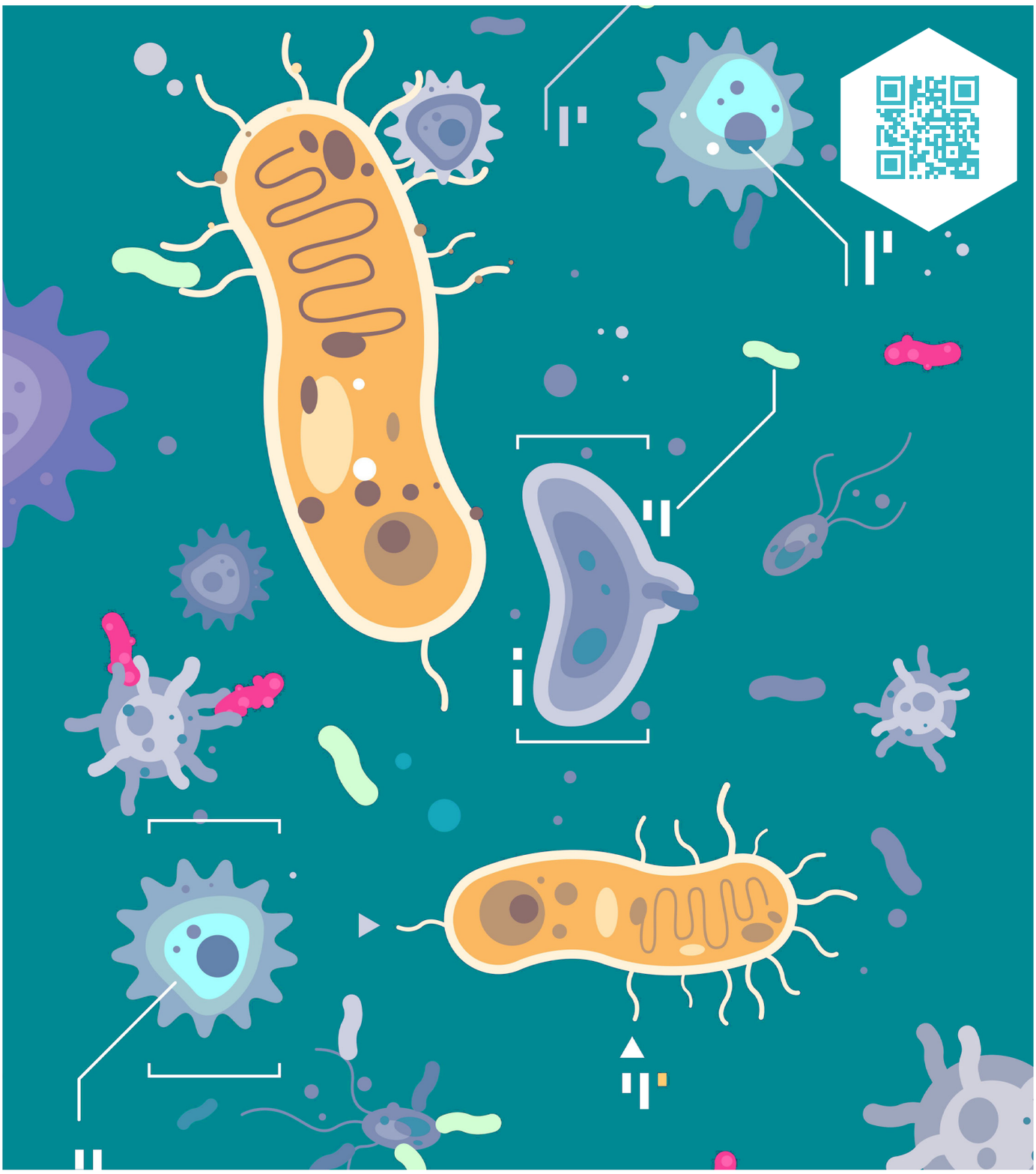
BIOSYSMO

BIOREMEDIATION SYSTEMS EXPLOITING SYNERGIES FOR IMPROVED REMOVAL OF MIXED POLLUTANTS



Funded by the European Union

UK Research and Innovation

What is BIOSYSMO about?

BIOSYSMO is a European research program that aims to clean the environment in a natural way.

In simple terms, BIOSYSMO:

- Uses plants and microbes to clean soil and water from harmful substances (pollutants).
- Instead of using chemicals, it relies on nature to do the job!
- Helps restore polluted areas affected by factories or other human activities.
- Explores how plants and microbes work together to do a better job.

Fun Facts for Young Researchers

1. Microorganisms are so small you need a microscope to see them, but they do huge work!
2. Microbes aren't always bad! Some can clean pollution from soil and water.
3. There are plants that work with microbes to remove toxic metals from the soil!
4. In BIOSYSMO, scientists conduct research to find OR research... the best microbes for the job of decontamination.

Multiple Choice Questions

Question 1:

What does BIOSYSMO do?

a) Plants trees

b) Cleans polluted soil and water

c) Makes recycling

Question 2:

Who helps with bioremediation?

a) Robots

b) Plants and microbes

c) Forest animals

Question 3: Where do the microorganisms that help with bioremediation live?

a) In soil

b) In soil and water

c) In water

Question 4: What do plants need to grow and clean the environment?

a) Sun, water, and soil

b) Dryness

c) Only air

Question 5: Why is it better to use plants and microbes instead of chemicals?

a) Because they are natural and harmless

b) Because they look better

c) Because there are plenty

Question 6: What problem is BIOSYSMO trying to solve?

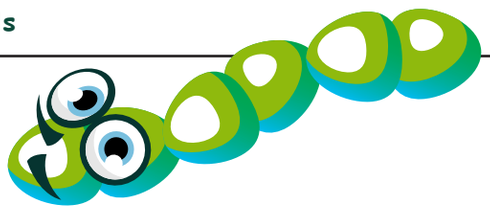
a) Environmental pollution

b) Dinosaur expansion

c) Lack of sun in cities

Matching Game - Find the Right Pair!

Technology	Περιγραφή
Biology	The process of cleaning the environment from harmful substances
Microbes	The science that studies living organisms and life
Decontamination	Tiny organisms that can cause disease or help the body
Environment	When plants are used to clean soil or water from pollutants
Phytoremediation	Everything around us: nature, air, water, and animals



Find the Opposites

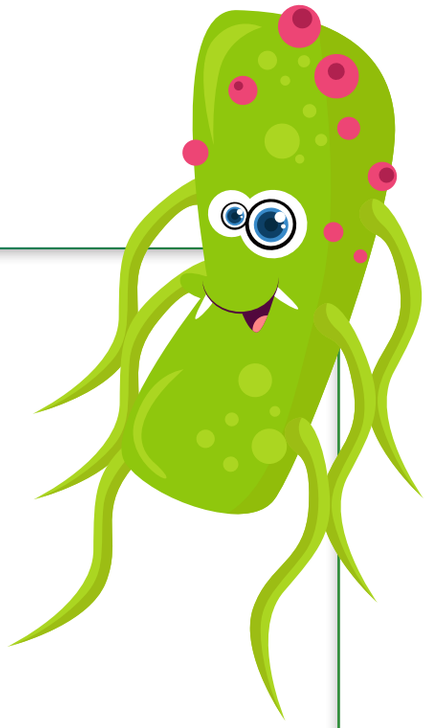
Match the Good Words with Their Opposites

Positive	Negative
Natural	Outdated
Sustainable/Vital	Harmful
Innovative	Chemical
Decontamination	Toxins
Eco-friendly	Dangerous
Harmless	Polluted
Phyto-technology	Destructive
Good Microbes	Chemical technology
Clean (soil)	Pollution

Spot the difference! (Find at least 15 differences)

Drawing Activities No.1

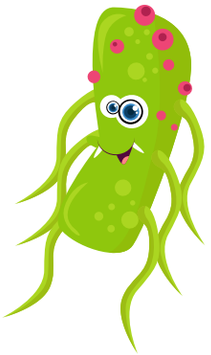
Draw your own "Super Plant" that cleans the soil!



Drawing Activities No.2

Draw a microorganism that helps clean a lake.

Experiment 1: Microbes are everywhere!



Goal: To show that microbes exist on many surfaces.

Material:

- 4 slices of toast bread
- 4 ziplock bags
- Water
- Soap
- Gloves (optional)

Procedure:

1. Touch the first slice with dirty hands and place it in a bag labeled "dirty hands."
2. Wash your hands with water only, touch the second slice, and place it in a bag labeled "water only."
3. Wash your hands with soap, touch the third slice, and place it in a bag labeled "soap."
4. Use gloves to touch the fourth slice and place it in a bag labeled "clean."
5. Leave them at room temperature for 5-7 days and observe which slice molds fastest..

What we learn:

Microbes are transferred by hands, and washing with soap significantly reduces them!

Experiment 2: Small-scale soil decontamination

Goal: To show how we can clean "polluted" soil.

Materials:

- 2 small pots with soil
- A bit of oil or food coloring
- 2 plants (e.g., mint or oregano)
- Water

Procedure:

1. Pour some oil or coloring into the soil of both pots.
2. Plant one plant in each pot.
3. Water both for one week.
4. Observe if the plant helps the soil "clean" (e.g., less smell, cleaner drained water).

What we learn:

Plants can help decontaminate soil!

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