

Outdoor learning

Name:
Class:

Supplies:

- Outdoor Learning Worksheet
- Pencil
- Mobile phone with the app "obsidentify" installed (Google Playstore or Apple) or field guides
- Magnifying glass
- Instruments (if available) for measuring abiotic factors: sound meter, light meter, humidity meter, thermometer, penetrometer, wind speed meter

Biodiversity is a contraction of "biological diversity". Biodiversity refers to the diversity of living organisms (also known as species richness) in a certain area. This includes plants, animals, fungi, bacteria, etc. Belgium's biodiversity is estimated at 40,000 to 50,000 species.

ASSIGNMENT 1: biodiversity

Research question: what is the biodiversity of the green space around the school (or in a park or forest near the school)?

Write down your hypothesis below:

TASK 2: abiotic factors

With measuring instruments such as the sound meter, light meter, humidity meter, thermometer, penetrometer or wind speed meter, you can answer the following questions related to the abiotic factors.

Question	Answer
What do you hear? Rustling leaves, birds chirping, insects buzzing, traffic noises, running water, and so on. How many decibels does the sound meter measure?	
Is it cloudy or is the sun shining brightly? How strong is the light? Measure the light intensity with a light meter.	
Is it damp? Is there precipitation? Measure the humidity with a humidity meter.	
Does it feel warm or cold? How high is the temperature according to the thermometer?	
Is the soil hard or soft? How deep does the pin penetrate into the soil? Handle the pin using a tube.	
Is it windy or windless? What do you measure with the wind speed meter?	

TASK 3: Abiotic factors

Abiotic factors have an impact on biodiversity. Write down an example below:

TASK 4: biotic factors

Look for 4 insects or other small animals. Use the app "obsidentify" to identify the animals. What is the name of the animal you found? Do you know a fact about it?

Name	Did you know about this animal

TASK 5: biotic factors

Look for 4 different types of plants. Use the app "obsidentify" to identify the plants. What's the name of the plant you found? Do you know a fact about it?

Name	Did you know?

ASSIGNMENT 6: biodiversity

Answer the research question: what is the biodiversity of the green space around the school (or in a park or forest near the school)? Was your hypothesis correct?

ASSIGNMENT 7: biodiversity

How can the green space around the school (or in a park or forest near the school) be made more bio-diverse?

ASSIGNMENT 8: Nature as a source of inspiration (biomimicry)

Plants and animals perform certain functions in nature. Just think of:

- Recycling waste, e.g. Fungi break down a dead tree.
- Exercise, e.g. Worms dig tunnels in the soil and churn them up.
- Building a house, e.g. Birds build a nest.
- Attaching to things, e.g. Burdock.
- Climbing, e.g. Squirrel.
- Making material, e.g. A spider makes a web
- Ability to repair, e.g. Bark of a tree
- Flying, e.g. Birds
- Heat retention, e.g. Fur of an animal
- Using solar energy, e.g. Plants that make food

The burdock served as a source of inspiration for the development of Velcro, which is used, for example, in shoes to be able to fasten them without laces. Velcro is, as it were, an imitation of burdock. The science that takes ideas from nature to design things to solve human problems is called biomimicry.

Give an example of a plant or animal that you have encountered (or know of) that could inspire the design of a product.

Explain and draw a picture if necessary!
