Agnetencollege Peer

STEM-project

T³ VLAANDEREN

Woodlice biotope

Student bundle

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Lesson 1 introduction and exploring

1. What?

In the lab, Professor Marijns is at her wit's end. She is a professor of biology and is looking for woodlice to start her research in January. She wants to investigate whether these animals can help with composting in greenhouse farming. If they can help make the soil more fertile, then greenhouse production could increase. So to do this, the professor needs woodlice and more importantly ...

She needs terrariums in which she can make her woodlice live in the lab. Such a terrarium should be a perfect home for the woodlice. However, the professor's assistants are abroad on another research assignment. She herself has no time to build perfect terrariums. She now asks for your help to research how to build a woodlouse terrarium to give the woodlice an ideal home, where they feel happy and have enough to eat during her research.

Prof. Marijns wishes you the best of luck in creating a monitored terrarium!

For this project, you will work in groups of 3-4 students. List the names of all group members below.

1. ……

2. ……

3. ……

4. ……

2. The schedule

- Lesson 1: introduction + exploring
- Lesson 2: exploring + setting up the research
- Lesson 3: testing the environmental factors
- Lesson 4: process the data and conclusion + brainstorm on the biotope
- Lesson 5: building the biotope

3. Questions?

Do you have a question? Don't understand something? Then apply the following roadmap:

1) Brains: think for yourself first.
2) Books: look again at the theory.
3) Buddy: ask a fellow student for help.
4) Boss: ask your question to the teacher.

4. The research question

The research question we ask in this study is the following:

"What does the ideal biotope for woodlice look like?"

Write down the hypothesis below:

……

……

……

……

5. Lesson 1 explore: woodlice and their habitats

In this lesson, you will begin with the investigative component. Before you can set up an investigation, you need to explore the topic. You will do this using a bookwidget.

Complete the bookwidget "1 Explore: woodlice and their habitats."

Lesson 2 exploring and setting up the research

1. What?

From the previous lesson, you already know more about the woodlouse and its habitat. In this lesson, you will continue the exploration by drawing out the food web and identifying a woodlouse.

After this, you will set up the research. For this, the knowledge gained about the woodlouse will be compiled in the form of key words.

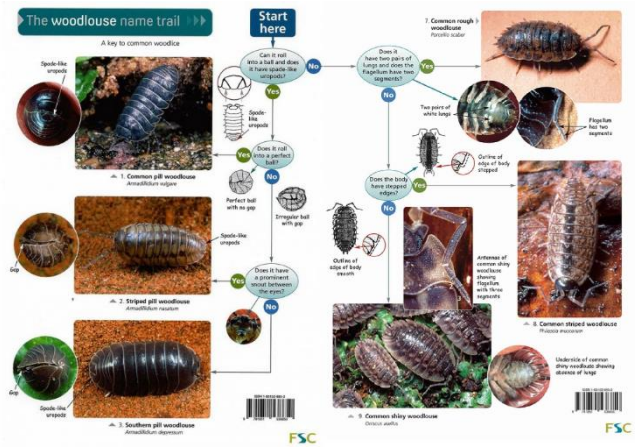
2. Continued exploration

Food web

In the box below or on a sheet of paper, draw the food web of the woodlouse. To do this, use the resources given in the explorer bookwidget and search further on the Internet if necessary.

Who am I?

You will now be given one or more woodlice by the teacher. Using the search card, you will identify them using a magnifying glass.



YOUR RESULT!

I am ...

3. Setting up the research

The knowledge found about the woodlouse is compiled in the form of keywords. Based on this, further research about the biotope is designed.

Which 4 environmental factors of the biotope should we examine?

……

……

……

……

Now it is up to you to create a research question. You will create a research question (sub-question) for each environmental factor. A good research question meets some criteria. To do this, use the following outline.

Criteria for a good research question:
1. Relevant
2. Neutral
3. Researchable
4. Unambiguous
5. Defined
6. Singular

So what sub-questions will we investigate? Write down a sub-question for each environmental factor.

1. ……
2. ……
3. ……
4. ……

Lesson 3 testing the environmental factors

1. What?

During this lesson you will conduct the research and thus the experiments. You will do this using the method given to you by the teacher.

2. Perform the experiment

Each group is given a different environmental factor to investigate. Follow the process given to you by the teacher and conduct the experiment. The teacher will pay extra attention to your lab skills and orderliness during this lesson. At the end of your experiment, wash the material and put it away neatly. You will immediately record your measured values in an Excel document.

Complete the document “3 Results environmental factors”.

Lesson 4 process the data and conclusion + brainstorm on the biotope

1. What?

During this lesson, you will interpret the results found and form a conclusion.

2. Observations and conclusion

To form a conclusion, you must first process the results. The teacher has collected and prepared all the results.

Create a separate graph for each environmental factor in the Excel document.

Using your results and those of the other groups, make a graph and formulate a conclusion for each environmental factor.

Write the conclusion you can make for each environmental factor.

1. ……

2. ……

3. ……

4. ……

3. Brainstorming the biotope

During this lesson, you will work on conceiving the idea and selecting resources and criteria in the designing component. You will brainstorm with your group about the biotope for the woodlice. Make a sketch, note the necessary materials and who will bring them.

Note! Everyone will bring something.

Make a sketch in a Word or Microsoft Paint document or on a sheet of paper.

List below the materials needed and who will provide them.

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Name: …….. Material:……

Lesson 5 building the biotope

1. What?

During this lesson you will work out the concept and thus build the biotope. You will do this based on your sketch.