

PE Activity

Adaptations in caterpillar movement behaviour

Summary

The pupils will learn that habitat structure affects the amount of time it takes to find a suitable plant to eat. They will also learn that certain features in the habitat, can represent obstacles that slow movement down, and increase the amount of time it takes to reach a suitable plant to eat. The pupils will use simple equipment (stop watch) to record data to help answer the following question: how does the arrangement and position of food plants in a habitat affect how long it takes to reach a plant that can be eaten?

Learning objectives:

1. To learn how to use simple equipment to suggest answers to questions
2. To learn how to gather and record data to help answer questions
3. To learn to use straight forward scientific data and evidence to answer questions

Links to the National curriculum:

KS1:

- ✓ asking simple questions and recognising that they can be answered in different ways
- ✓ observing closely, using simple equipment
- ✓ gathering and recording data to help in answering questions.

KS2:

- ✓ gathering, recording, classifying and presenting data
- ✓ recording findings using simple scientific language
- ✓ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- ✓ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- ✓ using straightforward scientific evidence to answer questions or to support their findings.

Preparation and resources

- ✓ This activity works best in an area with plenty of space to set-up the exercises and for the pupils to move about easily. Outdoors would be best, but the activity can be completed indoors too.
- ✓ Video: PE Activity Instructions
- ✓ Handout: PE activity worksheet
- ✓ Handout: PE activity Figure 1

- ✓ The pupil's will need to wear suitable footwear for running and jumping
- ✓ 9 cones (or other suitable objects) of 3 different colours, or labelled to clearly identify them as start and end points etc.
- ✓ The pupil's will need a stopwatch and pencils to record their data.

Supporting information

- ✓ Power point presentation:

Part 5: Adaptations in caterpillar movement behaviour (approx. 4.5 minutes)

- ✓ Transcript of power point presentations
- ✓ pdfs of power point presentation

Activity Plan

Location: classroom and a large indoor area with space to move around safely

Target age group: KS1 and KS2

Target group size: whole class

Duration: maximum 1 hour

Cross-curricular: Science, PE

Introductory activity: Adaptations in caterpillar movement behaviour

1. Using the Power point slides provided; "Part 5_Adaptations in caterpillar movement behaviour", describe how caterpillars move, why they move and how different types of caterpillars can have different food searching behaviours depending on the habitat they live in.
2. If it is possible to run all 3 exercises simultaneously, consider splitting the pupils into 3 groups, and asking them to start at one activity workstation and move onto the next ones when they have finished. This will enable 3 groups of pupils to be busy at a time, reducing the total amount of time that is needed for the pupils to complete the PE activity. Before starting, watch the PE activity Instructions videos and take some time to explain to the pupil's that each activity workstation represents a different habitat, and that each exercise represents a different movement behaviour for a caterpillar. Explain that one pupil will be a time keeper, and the other pupils in the group will pretend that they are a hungry caterpillar that needs to find a food plant as fast as they can before a predator finds them. Explain that the aim of each exercise is to find the food plant that the caterpillar needs to eat as fast as possible, and to find out whether it was faster for caterpillars to find their food plant in either habitat 1, 2 or 3.

Main PE activity: how does the arrangement and position of food plants in a habitat affect how long it takes to reach a plant that can be eaten?

1. This activity will consist of 3 different exercises, and will require 3 different activity workstations to be set-up. The activity workstation set-ups are summarised in the handout “Figure 1_PE Activity”, the PE Activity Instruction Video, and detailed below. Each type of activity workstation represents 1 of 3 habitat types: numbered 1, 2 and 3.
- **Exercise 1: How long does it take each caterpillar to find the food plant in habitat type number 1?** Two cones are required. Use different coloured cones, or label the cones to identify one cone as the start point, and one cone as the end point. Place one cone at each end of the activity space, positioned so they are in a straight line opposite one another, but far enough apart to enable the pupils to run between them. Working in pairs or small groups, ask one pupil to be the ‘time recorder’. Ask the other pupil(s) to pretend that they are caterpillars who need to find a food plant because they are hungry. The time recorder will need a stopwatch, the PE activity worksheet and a pencil. Ask the first pupil (caterpillar) to stand at the start cone (which represents a plant with no leaves left to eat). When the time keeper shouts ‘go!’ and starts the stopwatch, the caterpillar will run as fast as they can in a straight line directly to the cone that represents the new food plant. When caterpillar reaches the cone, they will touch it, and then run back to the start cone. The time keeper will stop the stopwatch, and record the length of time that it took for the caterpillar to complete this exercise. Repeat this for each of the other caterpillars in the group.
 - **Exercise 2: How long does it take each caterpillar to find the food plant in habitat type number 2?** As described under exercise 1, the time taken for each of the pupils to run between two cones will be recorded by the time keeper. But this time, half-way between the start and end cones another cone or marker will be used to pretend that there is a ‘hill’ or some other obstacle in the way, that the caterpillar will have to climb. When the pupils reach this ‘hill’ they will stop and pretend to climb a hill by doing 20 star jumps followed by 20 hops on one leg. This will be followed by stopping to stand still and to slowly count to 10 (a short rest at the top of this hill). Then to pretend that they are climbing down the hill, the pupils will do 20 star jumps followed by 20 hops on one leg. They will then continue to run to the new food plant cone, touch the cone, and run straight back to the starting cone. The time keeper will stop the stopwatch and record the time it took for the pupil to complete the exercise. Repeat this for each of the other caterpillars in the group.
 - **Exercise 3: How long does it take each caterpillar to find the food plant in habitat type number 3?** As described under exercise 2, the time taken for each of the pupils to run between two cones will be recorded by the time keeper. But this time, half-way between the start and end cones another cone or marker will be used to pretend

that there is food plant that cannot be eaten (cone 1). Two more cones (2 and 3) will be placed on either side of cone 1, but adjacent to cone 1 and positioned far enough away to enable the pupils to run between them. This time each caterpillar will run from the start point to cone 1. From cone 1, the caterpillar will run to cone 2 and touch it. Without stopping, the caterpillar will then run back to cone 1 and touch it, then run and touch cone 2 again, and return to cone 1. After touching cone 1, the caterpillar will then run to cone 3 and touch it. From cone 3 the caterpillar will run back to cone 1 and touch it. Without stopping, the caterpillar will run back to cone 3, touch it, and then run back to cone 1. From cone 1 the caterpillar will then run to the new food plant cone, touch it and then run straight back to the starting food plant. Repeat this for each of the other caterpillars in the group.

2. Using the time data collected, ask the pupils to complete the PE activity worksheet.

Pupil monitoring and evaluation

Monitor the pupil's PE activity worksheet, and offer help if needed.

Delivery notes and additional scientific information

Vocabulary: caterpillar, habitat, searching behaviour.

Feedback

Please provide us with some feedback about the [PE Activity - caterpillar movement](#). Thank you!

External Links

Supporting cross-curricular learning with PE: [STEM Learning Resources](#)