National Education Nature Park

Mapping vertical features

In small or built-up areas where there isn't much space to create new habitats, vertical features provide a potentially untapped resource for wildlife.

This session will guide learners through a series of activities that will support them in understanding or recapping the concepts of horizontal and vertical, exploring how plants can climb up vertical features like walls and fences, and considering how vertical features function as habitats. They will then use a flowchart to identify the exact habitat, which will form an important piece of your overall Nature Park map.

Teaching time

up to 60 minutes

Learning outcomes

- describe the strategies plants use to climb
- use a branching key to classify different types of vertical features

Step by step

If learners need a recap of their knowledge of the concepts of vertical and horizontal, you could do this by playing a movement game where learners move around an indoor or outdoor space, and when you signal "vertical" or "horizontal", the learners move their body into the correct shape. Once learners are confident with the difference, they could run to objects within their environment that are either vertical or horizontal.

Discuss with learners, "Is there anything living on/in our outdoor vertical features?" What do learners already know about plants that might grow in these places?

Use the how plants climb cards to support learners' understanding and vocabulary of climbing plants. There are three suggested ways of delivering this activity to choose from on the downloadable resource.

The vertical features cards can be added to the previous activity, or used as a basis for discussion:

- Which type of plants would grow best on each feature and why? Are some easier for plants to grip on to than others?
- Encourage learners to think carefully about the different strategies the plants use to climb, and whether they are self-supporting or will need to be tied/trained against the vertical feature.
- How can non-climbing plants also be grown in vertical spaces? (e.g. hanging baskets, living walls)
- Considering the things that plants need to survive (light, water, nutrients), what are the pros and cons of a climbing plant rooted in the ground, versus a hanging basket or living wall?

After these activities, divide learners into small groups and ensure each group has a Vertical features habitat flowchart. Carrying out Part 1 of the flowchart, head outdoors and ask learners to find a vertical feature and determine what material it's made from.

Green Skills

Suitable for

Key Stage 1
Key Stage 2
Key Stage 3

Location

Indoors
Outdoors

Season

Spring
Summer
Autumn
Winter

What you'll need

Printed flowcharts and worksheets

Clipboards

Drawing materials

Tablet, laptop, or computer to access the online Habitat Mapper tool

Printed map of your site, if you do not intend to use the Habitat Mapper outdoors

Key vocabulary

Vertical

Horizontal

Roots

Climbing plants

Living wall

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Step by step (continued)

If using a printed map of your site: ask learners to draw lines to represent these vertical features. If using the Habitat Mapper tool on a mobile device: educators and learners can work together to accurately draw the feature on the map.

Then ask learners to find a plant living on a vertical feature. The questions in Part 2 of the flowchart will help them reach a decision on what kind of plants they are. Again, make sure that learners draw the features onto your printed map, or they are added to the Habitat Mapper Tool on a mobile device.

Repeat this for each vertical feature and plants growing on them, until you have identified them all.

Green roofs: if you have a building, shed, bike park or similar where the roof has plants on it (planted into gravel or soil, not in pots), you can add it to the map as a green roof.

If you used a printed map, remember to add the habitats identified to the Nature Park map using the Habitat Mapper tool when you are back in the classroom. This is a really important step to ensure your site and your observations contribute to real-world, groundbreaking research by the Natural History Museum into nature recovery.

Reflection

We usually think of vertical features like fences and walls as boundaries to separate areas from one another. Fences and walls can stop some wildlife moving across a site (e.g. hedgehogs that can't climb over them) but they can also connect distant parts of a site, especially if the fence or wall has plants that create cover for animals. Reflect with learners on whether the fences or walls on your site help or block the movement of wildlife.

Ask learners to reflect on how they could think upwards when planning improvements for nature create greener natural spaces on human-made vertical features.

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