

<p><b>Science context</b> Food chains Organisms need a range of living and non-living resources to survive.</p> <p><b>HSW</b> Obtain, record and analyse data from a wide range of sources. Contribute to presentations and discussions.</p> <p><b>Mathematics</b> None</p> <p><b>Where?</b> In and around the school grounds</p> <p><b>Time</b> Two x 45min-60 min</p>	<h2 style="text-align: center;">Our School: The Urban Jungle</h2> <p><b>Lesson summary</b> This activity will encourage students to consider local habitats and evidence necessary to support their claims.</p> <p><b>Cognitive potential</b> In this activity, students are challenged to define a habitat and consider local sites which normally are ignored. They will investigate their school, locating unusual habitats and decide on appropriate data to collect (photographs, diagrams, sketches, living things, written descriptions) as evidence to support the claim that it is a habitat*.</p> <p><b>Central theme and skills</b> Organisms need a range of resources to survive. Resources are not always obvious. Evidence to support claims can be collected using different methods.</p> <p><b>Key resources</b> Each group will need a set of 4-6 photographs for the class discussion on habitats. Try and include examples that will create a conflict of ideas as well as more obvious habitats that students will typically find in their local area and in and around their school. Your set could include photographs of:</p> <ul style="list-style-type: none"> <li>• Cracks in the pavement where there is evidence of plant life that could be supporting insects and other small invertebrates.</li> <li>• Paving, walls that have lichen.</li> <li>• Buildings and structures where pigeons might stop</li> <li>• A pond</li> <li>• A river</li> <li>• A puddle</li> <li>• Sports/playing field</li> <li>• Dead/rotting wood</li> <li>• A brick</li> <li>• A rock</li> </ul> <p>For the main activity, each group will need a kit of resources that they can use to help them collect their evidence. This could include:</p> <ul style="list-style-type: none"> <li>• Pooters and pack of drinking straws</li> <li>• Magnifying glasses and specimen pots</li> <li>• White tray</li> <li>• Spoons and very fine paintbrushes or pipettes to scoop up some living evidence to put in the white tray</li> <li>• Plain paper, graph paper and lined paper</li> <li>• Pencils</li> <li>• Digital camera</li> <li>• Identification keys</li> </ul> <p>Poster paper and pens</p> <p><b>Setting the scene (20mins)</b></p> <p>In class give each group of students the set of photographs and explain the task. <b>In your pack some of the places are habitats and some are not. In your group, you</b></p>
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**need to decide on those that you think are habitats, which are not and give reasons for your choices.**

Give the groups 5-10 minutes to discuss this. Move around and encourage them to explain and justify their decisions to each other. Pick up on any disagreements or any 'tricky' photographs that you can bring up in whole class discussion. Ask the groups to make a note of their decisions so that you can refer to this at end of the session when you ask them to reflect on whether their thinking has changed/moved on.

Bring the class together and invite different students to share what was discussed in their groups:

**How did you decide if somewhere was a habitat?**

**Were there any that you were not sure about? Which one? What made it tricky to sort?**

**Did you have any disagreements?**

Use this to develop a shared understanding about habitats.

**What are similar about all the places that we think might be habitats? What is different?**

Then share a few photographs of places in and around the school.

**Do you think there are any habitats in our school? What would you look for, what kinds of data would you collect, to be certain that it is a habitat?**

Generate some whole class ideas for possible sources of data collection and write them down.

*Observations outside (15-20mins)*

**In your groups, I want you to investigate a hidden habitat around our school.** (You might want to identify some 'zones' or use Google Maps to help manage and circulate around the groups.)

**You need to collect some evidence from this habitat to support your claim that it is a habitat. Each group will have a kit of resources to help with this data collection.**

Give each group their kit in class.

**As a group, you will need to make sure that in your collection of evidence you have:**

- 2 sketches of your habitat- these need to be labelled
- A written description of your habitat
- A list of what you found in that habitat (living and non-living)
- A very small sample of some of the things that you found in the habitat

**How could you use what you have in your kit to help you collect this and other evidence? How will you organise yourselves as a group to meet this challenge?**

Give the groups about 5 minutes to talk about this and ask some of them to share how they will manage roles and tasks within their groups. Use this as an opportunity to emphasise the need for delegation, negotiation and assigning roles when working as a group. Ask some students to recall what kinds of skills and attitudes help a group to work well.

**You have 5 minutes to walk around the areas that we have agreed on. You need to find at least four sites that you think might be a habitat. Following this you need to come back to this agreed spot so that we can collect our ideas as a class.**

Send the groups out without their kits for this initial site finding task. Agree on a spot where they will reconvene. When the groups are back, collect some of the ideas. You could write these down on a big piece of paper. Each group will now need to decide on one place where they will go to collect their evidence before setting off. Give the groups their kits.

Give the groups 15-20 minutes for this task. Use this time to move around the designated zones. Support the groups by asking them to explain what they are thinking, what they are doing and why they are doing it. Encourage them to describe the living things within their habitats and get them to start thinking about possible feeding relationships that might exist within their habitats. Also get them to evaluate their habitats:

**What kinds of life does your habitat support?**

**Is it a good habitat? Why? Where is the light? Green plants? Water? Food?**

*Sharing ideas and provoking conflict (15-20mins)*

Gather the groups back into the classroom. Give the groups about 20 minutes to prepare their presentation. This might be a poster that collates all their evidence already collected. Encourage the groups to annotate their diagrams, labelling parts etc and to use the keys provided to identify what they have found. Challenge the groups to think about relationships between the different living things in their habitat and to use food chains to describe these.

**What kinds of life does your habitat support?**

**Where is the light? Green plants? Water? Food?**

**Is it a good habitat? Why?**

Stop the class and prepare them for the presentation phase. You may want to use this brief discussion to establish an understanding of food chain, producer, predator and prey.

**As the audience, what are you looking out for to be certain that the place is a habitat?**

**What kinds of questions would you want to ask to find out more about the habitat?**

Then select some groups to present their findings and invite students from the audience to probe the presenters and assess the evidence.

*Linking ideas together (15-20mins)*

Give the students about 10-15 minutes to reflect on their learning in their groups or pairs.

**What was hard about collecting evidence? Is there any 'missing' data? What else would you do if you could go back to your habitat to collect more data?**

**If you went back later, would your habitat still be the same? What the evidence change? Why?**

**How reliable is your evidence?**

Give the groups the same set of photographs used at the beginning. Encourage them to reflect on their learning.

**Can you remember what you thought about these photographs at the start of the lesson? Has your thinking about habitats changed? Can you explain why?**

\*A habitat can be defined as the natural environment of an organism. Several individuals of the same species living together in the same place at the same time are called a population (for example a population of woodlice living underneath a plant pot.).

A community describes a collection of populations of different species interacting within a habitat (for example the woodlice, a population of slugs and the mosses all living together underneath the plant pot).

A habitat can only support plants and animals that are adapted to its conditions and then only in limited numbers. This is due in part to the competition that exists between, and within species for limited resources such as food, space, oxygen and light. The organisms within the habitat have different feeding habits and occupy different trophic levels.

The more obvious examples of habitats include grasslands, woodlands, rocky shore and rain forests, each having its own special set of animals and plants. A micro-habitat is a scaled down version of a habitat, with several microhabitats found within one habitat e.g. underneath a plant pot in a garden.