

# HABITATS AND BUG HOTELS

Learn more about orchard habitats and create a bug hotel.

*This lesson plan was written by The Orchard Project, a charity that work in partnership with local communities to plant, manage and restore orchards in community spaces. These lessons are designed to be carried out in an orchard or wooded area close to your school to help students to connect with nature in a fun and practical session. For more information about us, please visit [www.theorchardproject.org.uk](http://www.theorchardproject.org.uk).*

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## LEARNING OUTCOMES

KS2 Science (year 3)

- understand the role of pollinators in plant reproduction
- (describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird)

KS2 Science (year 2)

- identify and name a variety of plants and animals in their habitats, including micro-habitats

KS2 Literacy

- Spoken language: maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments

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## RESOURCES

- Orchard with young or mature trees, cagoules for wet weather work, first aid kit, whistle
- Camera or iPad – check device and usage permissions
- For I Spy A Habitat - laminated handout x 15 and white board markers
- Bug hotel building – bamboo, sticks, grass, cones, straw, reeds, string, secateurs and hacksaw

### WALK TO THE ORCHARD (5-10 MINS)

*Make sure that the children walk in pairs and check they know who is person 1 and who is person 2. They'll work with this partner during the lesson. When you arrive at the orchard, make your way to the centre.*

### INTRODUCTION (10 MINS)

#### **Where do you think you are?**

Why are there lots of trees here? What kind of trees do you think they are? Why do you think they're planted like this, with big gaps between each tree?

*Orchards are a group of five or more trees, planted with the intention of providing food. They often have quite big spaces between them to allow people to harvest the fruit easily and to allow light to reach all the fruit. Sometimes they are pruned short to make the fruit easier to reach.*

In order to help fruit-trees grow well, we need to understand how they work. We're going to be talk about the purpose these trees and help make the orchard even better.

#### **(If there are veteran or fragile old trees) Do you have any grandparents?**

How do we need to treat older people? Can anyone see any old-looking trees? How should we treat them?

*Check they know to avoid touching any tree props or damaging new growth on trees.*

## I SPY A HABITAT GAME (15 MINS)

### 🍇 Where does fruit come from?

What do we need to help make fruit form?

*Fruit is formed from flowers that usually must be pollinated. This can be done by the wind, but in an orchard, when we're talking about 'top fruit', it's usually done by a range of insects. The most well known of these is bees, but a surprising number of other insects also do this – some moths, flies, beetles, butterflies and wasps. We therefore need lots of minibeasts living in orchards, especially the pollinators.*

### 🍇 Where do you think they live? What do you think they need?

What's the name for the different types of particular place in which minibeasts (or plants or other animals) can live or hide?

*A habitat is an area that has specific conditions which suit a particular group of plants and animals. E.g. **Ponds** are completely wet but has damp soil around the edge. **Cut grass** has a limited amount of space for minibeasts to hide and the soil can be quite compacted. **Trees** have lots of hiding places for minibeasts to live and lots of food for them to eat.*

### 🍇 Who wants to play a game?

Can you see any habitats from here? Let's have a quick race to see how many we can find.

- Ask person 1 to come and take a laminated I spy a Habitat sheet and white board marker.
- Explain that they need to judge each habitat they find and give it a score. They can record the score next to the habitat name.
- Send them off to find as many habitats as they can.
- After 5 minutes, signal for the class to come back together and get them to tally up their score.
- Check some of the more unusual habitats are present on the site – e.g. boggy area



### 🍇 Who can remember why insects are important for making fruit?

What's the name of this kind of animal – it begins with 'p'?

*Pollinators. The most well known of these is bees, but a surprising number of other insects also do this – some moths, flies, beetles, butterflies, wasps and sometimes even ants.*

**BUG HOTEL BUILDING (20 MINS)**

**Would you like to build a Bug-ingham Palace? A BeeNB?**

Now is your chance to create a palatial bug hotel to attract and house pollinating insect, which we could leave in this orchard. We are creating a new habitat!

- Hand out bamboo canes and other materials for building a bug hotel
- Show children how to use secateurs safely
- Explain that the materials in the bug hotel will be between 10 and 20 cm long – about the distance from their thumb to their little finger



Minibeasts will be able to live inside the hollow stems and in between the leaves. The bundles will be put together inside a covered bug hotel.

**Why will the bug hotel be covered in a waterproof sheet?**

*The cover will stop the minibeasts getting wet, keep them protected from cold wind and hide them from predators such as birds.*

**How will this bug hotel help the minibeasts?**

*The minibeasts will have somewhere to hibernate or breed during the winter. The shape of the tubes in our bug hotel are ideal for small insects.*

*Some insects such as **hoverflies** lay eggs that become larvae. They pupate and become hoverflies which emerge in the spring. Hoverflies are pollinators and also eat orchard pests such as aphids. Some **bees** live and work by themselves – solitary bees. Solitary bees will love the tubes in our bug hotel for laying their eggs. Solitary bees are important pollinators. Some types of **butterfly** hibernate over winter and they will appreciate any waterproof areas within the bug hotel to keep dry and warm.*

**TIME TO RECAP (5 MINS)**

**What have we learned today?**

What have you learned about where fruit comes from? What's the name of the kind of animal that helps fruit form?

Would you like to visit this orchard again? Why?

What kind of insects are we building the bug hotel for? Can you remember the names of any of the insects that are pollinators? Where could hotel go?

**WALK BACK TO SCHOOL (5-10 MINS)**

## I SPY A HABITAT

Habitat	Notes	Points
<b>Pond</b> Provides drinking water for birds and mammals as well as a home for insects and amphibians.	Score up to 10 points – wild-looking ponds score more	
<b>Standing water</b> e.g. water butts or water storage tanks. These would provide water for insects, birds or mammals.	Score 5 points	
<b>Boggy area</b> This might be an area around a wild pond, which is allowed to stay damp.	Score up to 10 points	
<b>Short grass</b> Any recently mowed grass between trees.	Score 2 points	
<b>Long grass</b> This might be left at the edges of the orchard.	Score 4 points for grass that is left long enough to flower and seed. Score up to 8 points if it has wild flowers and is not treated with weed killer, pesticide or fertiliser.	
<b>Wild flowers</b> (or evidence of flowers) These might be in flower beds, pots or growing in wild areas. Some people might call them weeds!	Score 3 points for a small area of wild flowers (smaller than a table top). Score up to 10 points for larger areas with lots of different types of flower	
<b>Flower beds</b> Garden flowers may be bred for their looks rather than nectar, and are often not so good for wildlife.	Score 2 points	
<b>Rocks</b> Piles of rocks provide plenty of hiding places for small creatures – rocks in the sun might even attract sun-bathing lizards and snakes.	Score 5 points	
<b>Rotting wood</b> A pile of logs left to rot provides a great home for many insects and fungi	Score 5 points	
<b>Trees and shrubs with fruit or seeds</b> These provide food in the autumn and winter, especially for birds. They can also provide places for birds to nest.	Score up to 8 points depending on how many types of tree there are. Score an extra 5 points if you have a thick hedgerow, providing food and shelter.	
	<b>Total</b>	