



Orchard Food Chains

Create simple, interactive food chains based on the plants and animals that live in the orchard

Estimated time: 60 mins

Recommended Year Group: 4

Subjects: Science

Location: Orchard

Learning Objectives & Curriculum Links:

- To discover which plants and animals live in the orchard
- To create food chains based on these findings
- To sort organisms into producer, predator or prey
- To explore the idea of interdependency between species and how external factors affect the balance of a food chain



Blackberries. Image: Jonathan Billinger

Instructions:

Starter activity - scavenger hunt (25mins)

Run **Orchard Who Dunnit?** to discover which species live or grow in the orchard.

Main activity - food chains (35mins)

You should now have a variety of food items (real specimens and images) and images of **orchard animals** on the ground, in front of the group.

Introduce or recap terms: producer, consumer, predator, prey, carnivore, herbivore, omnivore. You could show the group the "Diet" section on the **orchard animal** cards so they can identify examples of these.

Choose 12 pupils. Ask four to select a predator card each, four to select a prey (herbivore or omnivore) card each and four to select a producer (plant) card each. They should stand next to each other, in a semi-circle, displaying their cards in front of them so the rest of the class can see all the cards.

Can the class make any food chains from the displayed cards?

They do this by moving the pupils with cards next to each other, in order: producer-prey-predator. Pupils could put their arms on the shoulder of the next, to show the direction of energy transfer (from producer to prey to predator). See Teacher's Info for examples.

If no food chains can be made with displayed cards, pupils can select new cards from the ground.

What is the biggest food chain they can make? Can any make a food web?

Introduce the influence of external factors on food chains.

What would happen to the food chain if there was a poor apple harvest?

Use a pupil food chain to help demonstrate this. E.g. remove apples - less Codling Moth caterpillars - less food for Blue Tits - less food for Sparrowhawk. **What might this do to the Blackbird population? What else could affect the food chain?** eg. pesticides killing the caterpillars.

Review the session. The group should have a good idea of what animals live or visit the orchard, which are prey and predators and how these animals depend on producers and each other.



Blackbird. Image: Si Griffiths 2005

Prior Knowledge & Preparation:

- Familiarise yourself with **Orchard Who Dunnit?** activity
- Print any slides/PDFs

Resources:

- All **Orchard Who Dunnit?** resources

Hints:

- To extend the activity, get pupils to create food webs from the chains by linking to two others, rather than just one.



Hedgehog. Image: wikipediacommons



Further questions, Next Steps and Links:

- Using string/wool, make food webs from the food chains
 - Create an orchard menu for favourite animals
 - **Orchard Habitat Review**
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Background/teacher's information/notes:

Examples of orchard food chains

- Leaves - caterpillar – blue tit - sparrowhawk
- Leaves – aphids – ladybird/lacewing – toad – hedgehog – tawny owl
- Leaves - caterpillar – soldier beetle – robin
- Nuts/berries – wood mouse – fox/kestrel
- Apple – wasps – blackbird - sparrowhawk
- Apple – mistle thrush/fieldfare/blackbird – sparrowhawk
- Flower (nectar) – butterfly - crab spider - robin/blue-tit
- Flower (nectar) – bumblebee – great tit/crab spider
- Seeds - goldfinch/chaffinch - sparrowhawk
- Grass - rabbit -fox
- Grass - field vole - kestrel
- Grass - millipede - centipede - badger
- Decaying wood - woodlouse - common shrew - tawny owl