

# LIFECYCLES AND FOOD CHAINS IN THE ORCHARD

Learn about the lifecycles and food chains of some of the plants and animals commonly found in the orchard.

**Note:** the lifecycle may be carried out during any of the seasons as the trees will be in a different stage of their cycle, however the best time for the food chain activity is late spring to summer as there will be more chance of finding animals there.



## LEARNING OUTCOMES

KS1 Science

- Identify and describe the basic structure of a variety of common flowering plants, including trees
- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
- Observe and describe how seeds and bulbs grow into mature plants
- Notice that animals, including humans, have offspring which grow into adults



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## RESOURCES

- A4 laminated photos of the different life cycle stages for four common orchard organisms (we suggest the following, but you could use other examples):

- 1/. Blue tit (egg, chick, fledgling, adult)
- 2/. Codling Moth (egg, caterpillar, pupae, adult moth)
- 3/. Ladybird (egg, larvae, pupae, adult ladybird)
- 4/. Apple tree (seed, seedling, young tree, mature tree with fruit)

These images should be found with Google and printed and laminated or, have the children draw them as part of an extended exercise

- Colourful wool, garden canes or chunky chalk to create arrows between the stages (on the playground/orchard ground)
- 2 x plain card pieces (roughly A5 – A4, you can use scrap) per life cycle stage (that's 16 pieces if using all of the stages above)
- Markers or felt tips
- Something to use as a blindfold for the game

## INTRODUCTION (10 MINS)

*Go out to your orchard in the summer and have the pupils observe the trees*

### 🍇 What does 'lifecycle' mean?

*All living things (organisms) go through different stages of development during their lives. A life cycle is the different stages of life for an organism. In science it is usually displayed as a circular diagram showing each stage in words and/or pictures to show that seeds/offspring are created as part of a continuous cycle.*

### 🍇 What stage of growth are the fruit trees at?

Do they have blossom? Can you see any fruit? What did this tree start off as? What is another name for an apple seed? What came before the fruit?

### 🍇 What animals can we find on and around the trees?

Can you see any insects? Can you see any birds?

### 🍇 Which stage of their lifecycles are they at?

Are the animals we can see babies or adults? Or, can you see any eggs or seeds?



## Do all animals have babies that look like the adult?

Can you find, or think of an animal where the baby looks nothing like the adult?

*A baby human looks like a small version of an adult – it has two arms, two legs, a head etc. But what about a baby butterfly? Or a baby frog?*

## CREATE VISUAL LIFE CYCLES (20 MINS)

Use the laminated A4 pictures to create the lifecycles of three different orchard life forms using the space afforded by your grounds

- First get the pupils to separate the different images into the correct organisms and all their stages (i.e. all the Apple tree stages together, all the blue tit stages together etc.)
- Split the group into smaller groups, each with a set of images for one organism
- Have them place their images into a large circle on the ground, starting with the egg or seed at '12 o'clock'
- Once they are in the correct order have them write down the name of s each stage (EGG, CHICK, ADULT etc) nice and big on a piece of card and position these underneath the corresponding image
- Have them make arrows flowing between each stage using the wool or chalk (the ground surface will determine which is most suitable)
- Take photos for your evidence and for future orchard displays!

## CREATE A SIMPLE FOOD CHAIN (10 MINS)

### What is a food chain?

A food chain is a sequence of what eats what

**Producer** – the start of the food chain, can make its own food, usually a plant

**Consumer** – eats producers (**herbivore**), other consumers (**carnivore**), or both (**omnivore**)

**Predator** – animal that preys upon other animals

**Prey** – animal that is eaten by predators

### Can you create a simple food chain using the images from these three life cycles?

Watch out! The direction of the arrows are very important: they point to the animal that is doing the eating. If you were to get them the wrong way round, it would mean that in the chicken example above, the chicken is eating the human and the grain is eating the chicken!

### If we could extend this food chain, what might eat our predator?

*The top predator in our food chain is the blue tit, which could be eaten by a cat, a weasel, a bird of prey, or killed by a human. Humans have killed all the top predators in the UK and are now the top predators themselves.*



## BAT & MOTH GAME! (15 MIN)

- 1/. Have the pupils stand in a large circle in the orchard
- 2/. Nominate one pupil to be a moth, one to be a bat and one to be a tree!
- 3/. Blindfold the bat, as bats are blind and hunt using echolocation
- 4/. Ask the tree to stand still somewhere in the circle

### Instructions:

In order to find its prey, the bat must fly around the circle, emitting its echo-location call of "BAT". Whenever the bat says "BAT", the moth must respond "MOTH" so the bat can hear where the moth is and fly towards it! To make things trickier, and demonstrate that bats must skilfully navigate around stationary objects, the tree must respond with "TREE" each the bat says "BAT". Can the bat find and eat the moth?

## TIME TO RECAP (5 MINS)

What does 'lifecycle' mean?

What plants and animals did we find in the orchard and which life stages did we see?

When we create or draw a lifecycle, at which stage should we begin?

What is a food chain?

When we draw a food chain, what do we begin with?

What do we call an animal that eats other animals?

What do we call an animal that eats only plants?

What do we call an animal that eats both plants and animals.

