

# OUR CHANGING WORLD

## INTRODUCTION

In this module children will observe animals in their habitats and notice how they change through the year. They use this developing understanding of the different animals living in a habitat to build up simple food chains. The first lesson where children visit local habitats should be linked to Module 1, What Is In Your Habitat?. These lessons should be taught after Module 2, The Apprentice Gardener.

Children will begin to learn about animal life cycles by observing how an animal kept in the classroom changes over time and by going out to look for baby animals such as birds on a canal or river, or lambs on a farm. This is revisited in the Year 5, Module 1, Circle of Life.

They will also plan what bulbs and seeds to plant in order to be able to make soup from the harvest at the end of the summer term. The planting mostly takes place during the spring and summer, and children observe how the plants change over time. This builds on the lessons in Year 1, OCW: Plants where they grew plug plants to make a salad. In Year 2 they have greater responsibility for deciding when and how to plant seeds and bulbs. They also decide when the crops are ready to harvest. This work is developed further in Year 3, Module 1, How Does Your Garden Grow?, where they investigate in more detail the conditions required for plant growth.

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### National Curriculum:

To identify and name a variety of plants and animals in their habitats, including microhabitats

To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other

To 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

To notice that animals, including humans, have offspring which grow into adults

To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

To observe and describe how seeds and bulbs grow into mature plants

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### Working Scientifically:

Observing closely and gathering and recording data to help in answering questions

Gathering and recording data to help in answering questions

Asking simple questions and recognising that they can be answered in different ways

Observing closely, using simple equipment

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### Scientific Enquiry:

Grouping and classifying

Noticing patterns

Finding things out using secondary sources of information

Observing changes over time

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### Key vocabulary:

egg, offspring, baby, adult, grow, change, habitat, food chain, tally chart, pattern, chick, calf, cub, kid and other baby animal terms, seeds, bulbs, plant, root, stem, leaf, fruit, shoot(s), bud, flower, soil, compost, manure, dig, prepare, water, watering, vegetable, herbs, names of vegetables and herbs, wash, clean, peel, cut, chop, blend, smooth, puree, heat, boil, simmer, fry

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### FACT FILE:

A suitable growing space is required for this module. The planting model suggested is 'square foot gardening'. This requires a very small space to be made available and used for growing. Look out for redundant corners or spaces near fences or paths. These can often be repurposed with the addition of planters or raised beds. Grow bags can be used as an alternative, but these will only support plants that do not need to send their roots deep into the soil.

## Creating a 'square foot' garden

Measure out a suitable 120 cm x 120 cm area. Edge the bed with untreated wooden boards. Make sure that the soil is weed free and remove as many stones as possible. Dig in compost mixed with some well-rotted manure. Divide the area into 16 x 30 cm (1 ft) squares. These can be marked out by nailing string across the bed.

When planning the layout, make sure that the tallest plants are at the back of the bed, with sizes decreasing towards the front. The bed should face south for maximum sunlight. For more information and advice visit <http://squarefootgardening.org/square-foot-gardening-method>

The ground should be prepared ready for planting by clearing weeds and pebbles, and digging in compost and some manure.

## Planting

Crop	When to plant	How to plant	Height	When to harvest
Onions	February to April	In rows 20 cm apart. Thin seedlings to 5 cm apart and then 10 cm apart.	10–60 cm	May to September when the leaves turn yellow and start to topple over.
Garlic	Late autumn or early winter	Break up the bulbs and plant individual cloves just below the soil surface 15 cm apart and in rows 30 cm apart.	20–50 cm	June onwards when the leaves have turned yellow.

Carrot	February to July	Sow 13 mm deep in rows 15 cm apart. Once the seedlings start coming up, thin to 5–7.5 cm apart.	15–35 cm	May to October; 12–16 weeks after sowing.
Potato	March to May	Dig a narrow trench 12.5 cm deep. The seed tubers are spaced 30 cm apart.	30–50 cm	June to October when the flowers open or the buds drop.
Tomato	February to April	Plant in seed trays in a clear plastic bag on the windowsill. Transplant into pots then plant 45–60 cm apart outside when the first flowers are beginning to open.	30–100 cm	July to October. Start picking when the fruit is ripe and fully coloured.
Peas	March to June	Make a flatbottomed trench 5 cm deep and 15 cm wide. Sow the seeds approximately 7.5 cm apart, cover with soil, then lightly firm.	30–60 cm	June to October; 11–13 weeks after sowing. Pick regularly.
Coriander	April to June	Sow the seeds 4cm apart in holes. Thin young plants to 20 cm apart.	12–60 cm	June to August. Pick the leaves at any time before the plant flowers.
Mint	April to May	Plant seeds in a pot. Either keep them in the pot or bury the pot in the ground.	30–120 cm	June to October. Pick the leaves at any time.

Chives	March to May	Scatter seeds over a well-prepared bed and cover with a thin layer of soil. Thin seedlings to 10 cm apart.	20–45 cm	June to October.
Basil	April to May	To grow from seed, scatter over a well-prepared bed and cover with a thin layer of soil. Thin seedlings to 30 cm apart.	30–90 cm	July to September; 8–12 weeks after planting. Harvest regularly.

## Habitats

Where an organism lives is called its habitat. The size of a habitat varies enormously from a tropical rainforest to a single leaf of an oak tree. If the habitat is small (such as the leaf of the oak tree, the space under a stone, log pile or a crack in a wall) then it is sometimes referred to as a microhabitat. The boundaries as to what makes something a microhabitat are not clear-cut, so in this module the term 'habitat' is used throughout regardless of size, but where necessary specific examples of the habitat being referred to are given.

A habitat is a natural environment or home to a variety of plants and animals. The conditions may vary across a habitat. For example, a woodland is a habitat. Under the trees it may be cool and dark, whereas at the top of the trees it may be warmer and lighter. The smaller the habitat the more restricted the conditions in it, such as under stones or in the reeds surrounding a pond. Most living things live in a habitat to which they are suited and depend on each other for survival. Animals depend on plants to give them shelter and food. Some animals depend on other animals for food.

A food chain shows how animals obtain their food. Ultimately all animals get their food from plants either directly or indirectly by eating an animal that eats plants. In later years children learn that animals gain energy from the food they eat. The arrow in the food chain shows this flow of energy from one living thing to another and therefore always points from producer (plant) to consumer, and from primary consumer to secondary consumer. Food chains link together to form food webs.

pondweed → watersnail → fish → heron  
 producer → primary consumer → secondary consumer → tertiary consumer  
 plant → herbivore → carnivore

## Offspring

All animals have offspring. Sometimes the offspring closely resemble their parents and sometimes they are very different and undergo a metamorphic change, such as a caterpillar into a butterfly.

Many animals produce offspring at the point in the year when the conditions are best suited for the offspring to survive. For example, lambs are born in spring when it begins to get warmer. This may be important in the timing of the Enrichment lesson, if it is used.