

TEACHER NOTES: INTRODUCTION

This pack is designed to accompany the Woodland Trust's schools hedge/hazel pack and provide additional activities associated with the planting of the hedge or hazel trees. It contains teacher notes and pupil worksheets as well as "fascinating facts" sheets for species in your pack. Where appropriate, curriculum links are provided to the 5 – 14 National Guidelines, but each give plenty of scope for adaptation. We hope that these materials help you to enthuse and inspire your pupils about the natural world.

Worksheet	Suggested time of use	Where to use	Curriculum areas
1. Twigs all look the same. Or do they?	Winter (same time as planting hedge or hazel pack)	Indoors or outdoors (easier indoors)	Environmental Studies Science
2. Exploring a hedge	First spring/summer after planting	Outdoors	Environmental Studies Science
3. Measuring your hedge	First spring/summer after planting and ongoing	Outdoors	Mathematics
4. Exploring an old hedge	Any time in spring/summer	Outdoors	Environmental Studies Science
5. Food chains	Any time	Indoors	Environmental Studies Science
6. Wild tales	Any time	Indoors	English Language
CRAFT IDEAS	Any time	Indoors or outdoors	Art and design

Schools hedge/ hazel pack

WORKSHEET ONE: Twigs all look the same. Or do they?

This activity is designed to be carried out in winter and therefore can be used at the same time as planting your hedge or hazel trees. It is designed to be classroom-based as it requires close observation and drawing, but it could be adapted into an observation and discussion exercise during the planting activity.

If desired, the saplings from the hedge or hazel pack itself can be used for this exercise. The saplings should only be kept in the classroom for a couple of hours and then returned to a cool area if not to be planted immediately. It is important that the roots stay moist at all times.

If you received the hedge pack each species should be identified by labels, or make reference to the sketches in the accompanying "fascinating facts" sheets.

Some of the latter questions on the pupil worksheet can be used for more able children. When examining the twig it may be possible to see the marks where last year's leaves fell off. You may also be able to see tiny holes in the bark (lenticels) which allow air to move in and out of the tree's tissues.



Wild cherry

Question: Can you think why some trees might lose their leaves in winter?

Answer: The most obvious response to this question is that trees lose their leaves because it is too cold for them to grow. In fact, trees lose their leaves in winter mainly to preserve water. In winter when the ground is frozen no water can move up the tree and it effectively suffers drought. By moving into dormancy and shutting down a lot of its activity, the tree can survive through the winter. Evergreen trees normally have waxy needles which are specially designed to save water. They do have the advantage of being able to photosynthesise in warmer, sunnier days of winter.

The following website has a basic key to some winter (and leafy) twigs from native trees, which could also be used as an extension activity. As it is not entirely comprehensive it would be best to supply children with a twig that you know is included in the key.

www.saps.plantsci.cam.ac.uk/trees

5-14 National Guidelines links:

Environmental Studies Science: Living things and the processes of life.

Variety and characteristic features.

Level C: Name some common animals and plants using keys.

Schools hedge/ hazel pack

WORKSHEET TWO: Exploring your hedge or hazel trees

This activity is designed for use with the newly planted hedge or hazel trees and should be carried out when the shrubs are in leaf.

Depending on the vigour of the new shrubs it may not be too harmful for each child to pick a single leaf from the group of shrubs - otherwise suggest they work in pairs or encourage them to make their observations without picking.

Can you find out more?

The last exercise gives the the opportunity for pupils to make their own investigation into a chosen species.

The website below has a leaf key and more information about tree species.

www.saps.plantsci.cam.ac.uk/trees

Try also www.british-trees.com

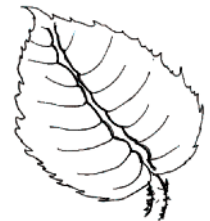
The language used in both websites is relatively complex; making both more suited as an extension activity for older pupils.



elder



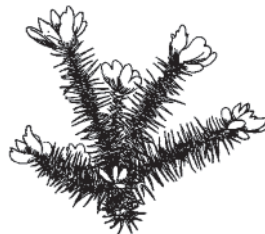
hawthorn



hazel



guelder rose



gorse



holly

WORKSHEET THREE: Measuring your hedge

This sheet is designed to be usable on several repeat visits to a newly planted hedge in its first few months and years to monitor its growth and progress. It also encourages observation of any wildlife in and around the vicinity (birds, insects). If the hedge is visited two or three times over the first year, it should have grown a little between measurements, but it may be worth checking this before taking the class back for repeat visits.

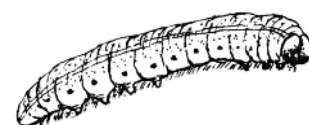
According to the age/ability of the group the measuring activity can be a simple exercise where pupils perhaps begin by estimating the height of the hedge and then measuring it (with the idea of finding a “fair” representative height amidst the variation of the different shrubs).

The 5-14 Mathematics Guidelines includes at level E “interpret by calculating the average (mean) to compare sets of data” and beyond level E “compare sets of data in tables, graphs and by calculating means, medians and ranges”. This would give the option for pupils to take a series of measurements across the length of the hedge and explore mode and range of the data before estimating the average height of the hedge across its length.

If pupils are measuring the hedge, they can be encouraged to work in groups and each take a different shrub species to measure. This will build up a long-term picture of the different rates of growth of the different shrubs. This information can

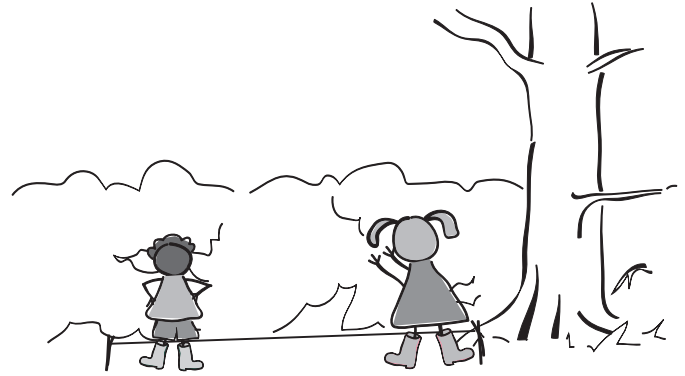


then be pooled and explored in class according to age and ability. As well as mathematics, this information can form the basis of a scientific enquiry.



WORKSHEET FOUR: Exploring an old hedge

This activity affords an opportunity for an outdoor exercise that should inspire pupils to imagine what their planted hedge or hazel trees will look like in a few years time. A mature hedge in the school grounds or nearby park can be used, or a suitable candidate identified during any other outdoor visit. It will be a more rewarding exercise for the children. If it contains a mixture of different shrubs.



Hedges are habitats

This section ties closely with QCA requirements. The questions ask the children to describe the habitat, predict what animals they might find, and then explore the habitat.

Places to direct them to look for animals include:

The surrounding area:

are there any birds nearby?

On leaves: any caterpillars, other insects, or even evidence of insect damage of leaves or fruit?

Under leaf litter: a good place to find many minibeasts. Ask children to replace any leaves they have overturned.

5-14 National Guidelines links:

Environmental Studies Science: Living things and the processes of life.

Interaction of living things and their environment.

Level D: Describe examples of human impact on the environment that have brought about beneficial changes and examples that have detrimental effects.

Give examples of how plants and animals are suited to their environment.

Level E: Describe examples of competition between plants and between animals.

Give examples of physical factors that affect the distribution of living things.

WORKSHEET FOUR continued

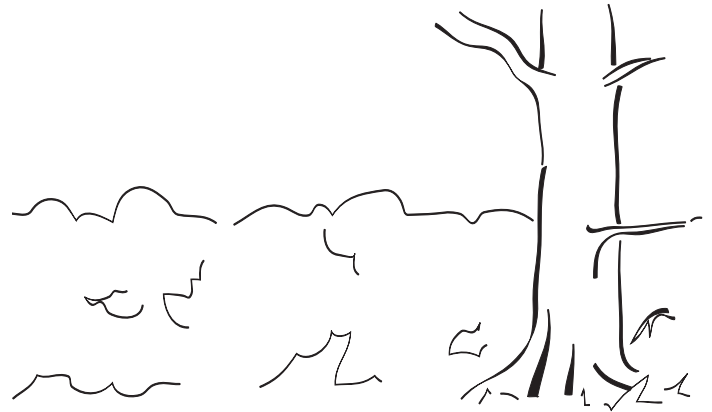
How old is the hedge?

Although hedges have been part of the landscape for many hundreds of years, they were planted in abundance during a series of enclosure acts during the eighteenth and nineteenth centuries, when the concept of common use of land was replaced with enclosed fields in private ownership.

The basis of the exercise is counting the number of species in a 30 metre stretch of hedge (estimated at about 40 pupil paces, but a long tape measure could be used if more accuracy is desired).

The principle that the more species found in a 30 metre stretch the older the hedge is based on the idea that new species will slowly colonise an existing hedge as birds or the wind bring in new seeds. These can grow in the base of the hedge, as they will be protected from animal grazing by the more mature shrubs.

One of the aims of this exercise is for pupils to look closely at the difference between the shrubs in the hedge. By collecting leaves, they should be encouraged to describe the difference between them. Pupils should be shown the difference between woody shrubs and herbaceous plants like grass or dandelions (woody vs soft stem).



Question: Can you think of any reasons why for some hedges, this exercise would give the wrong answer? Clue: What kind of hedges do people plant nowadays?

Answer: Clearly people are still planting new hedges, and like the material in the hedge pack, often choose to plant a mixture of species to support a range of wildlife. Encourage the children to think what would happen if someone tried to date their newly planted hedge in a few years time

Schools hedge pack

WORKSHEET FIVE:

Food chains

This exercise has been written as a direct response to teacher requests for an activity on this subject. It would be helpful if the paper-based activity could be followed by an outdoor experience, perhaps searching for wildlife in the vicinity of the newly planted hedge, or in and around a more mature hedge or group of trees.

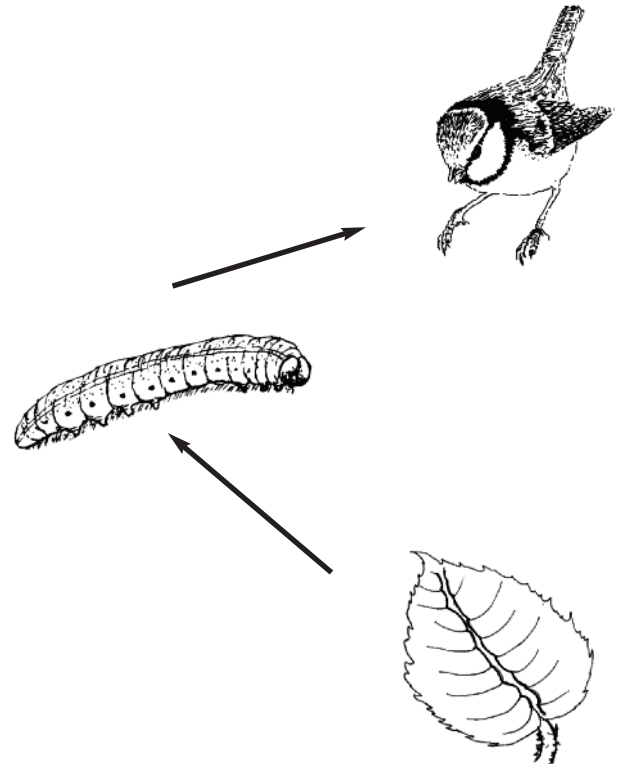
Food chains

Green plants	caterpillar	bluetit	fox
Green plants	snail	thrush	fox
Dead leaves	worm	badger	
Acorns	squirrel	fox	

Question: Explain why you think plants are such an important part of food chains.

Answer: Pupils should describe how food chains all start with a green plant, or something that has come from a green plant like leaves or fruits.

This material gives the possibility to develop an understanding of food webs if wished, starting with the idea that animals such as foxes rely on several food sources. One additional concept that is introduced is the different parts of plants (leaves, living and dead and fruit) that may be eaten by animals.



5-14 National Guidelines links:

Environmental Studies Science: Living things and the processes of life

Interaction of living things and their environment

Level B: Give examples of feeding relationships found in the local environment

Construct simple food chains

Schools hedge/ hazel pack

WORKSHEET SIX:

Wild tales

These folk tales are a starting point for creative writing and could form a useful English language exercise. An alternative/extension activity is for pupils to carry out their own research about other folk tales linked to trees and woodland creatures.

CRAFT IDEAS

Potentially some of the material harvested from the hedge or hazel trees in future years, could be used for craft activities, but in practice, using bought-in material is more realistic.

Geoff Sinclair, one of the Woodland Trust's Woodland Officers, has created a website full of craft ideas for using materials harvested from hedges or hazel trees. Some of the projects are complex, but with adult supervision simpler ideas such as beanpole wigwam or living willow sculptures would be possible and provide an imaginative enhancement to the school grounds.

www.allotmentforestry.com

(introductory pages)

www.allotmentforestry.com/facts/facts.htm

(practical projects page)

