



The Tree Detective: teachers' notes

General theme

The Tree Detective worksheet is a collection of carefully graded and relevant activities to interest and occupy young students - both in the classroom and outdoors during the half-term break. It is closely linked to the geography curriculum geographical enquiry and skills and there are lots of stimulating experiments to try, either in groups or on an individual basis.

Many of the activities are designed to create opportunities for classroom discussion, for example choosing the right equipment for a visit to the forest. Other activities have a narrative element, encouraging students to spot and explain the seasonal changes in the woods. Numeracy is also included, in a task that encourages children to measure the circumference of different tree trunks, calculating the age of the trees and recording their results.

The Tree Detective project was developed in close association with Velvet and WWF to encourage children not only to discover for themselves the rich variety of life in the forest, but also to make them aware of the importance of preserving local woodlands and wildlife, and the need to protect the habitat by collecting their litter, doing no harm to the environment and leaving the forest undisturbed.

- Kill nothing but time.
- Take nothing but photographs.
- Leave nothing but footprints.





Know your tree facts

Children should be encouraged to discuss each fact and decide for themselves if it seems true or not.

English En1: speaking and listening.
Group discussion and interaction. (3a-c)

One walnut tree can produce as much as 70 kg of nuts every year.
True. This is similar in weight to 3 small children.

An average oak tree has 250,000 leaves.
Not quite as many as that. Perhaps on one very large oak.

Wood from the alder tree makes top-quality charcoal and excellent gunpowder.
This is absolutely true, but not something children should test!

If you suffered from hylophobia (fear of trees), you would find it very hard to even walk into a forest.
This is also true.

People in olden times used to put sawdust on their breakfast kippers to improve the flavour.
Hard to believe, but oak wood produced sawdust used to flavour ham and kippers. Oak was also used to smoke the kippers in the first place. Poor old Magellan, the first man to sail around the world, found his crew cutting up the ship's timbers to make sawdust when they got really hungry!

There is a famous yew tree at Selborne in Hampshire that is more than 1000 years old.
This is true and false. This famous tree has now expired, killed off by the great hurricane of 1987, but it still stands in the churchyard at Selborne. Yews were grown behind the walls in churchyards because people needed the wood (for longbows) but the leaves and berries were poisonous and might harm livestock.





Oak trees cannot produce any acorns until they are 50 years old.

Also true, however trees seem to be growing faster now as a result of global warming, so we need to investigate further.

People known as diviners use a hazel twig to help them find water underground.

This is true. This would make a fun playground activity. Find a forked hazel twig and then see if any of the children are 'sympathetic'. The twig is supposed to twitch upwards if it is held near running water.





Study the scene

Geography: knowledge and understanding of places (3d)

Science: life processes and living things (1c)

Students have two pictures to compare. Both show the same scene, but autumn has arrived in the second picture and, with it, has brought many changes. Children should treat this as a 'spot the difference' competition, but should also explain some of the changes that have taken place, almost like telling a story.

1. The sun is now much lower in the sky as the days become shorter.
2. Birds' nests are now empty and abandoned.
3. Leaves have fallen or changed colour. The leaves are losing chlorophyll, the chemical that makes them appear green in colour.
4. Conkers have appeared now on the tree.
5. Berries have appeared as plants produce their seeds and fruit.
6. Puddles appear because autumn brings heavier rain, especially in November.
7. The robin starts as a small brown bird but changes colour to glorious redbreast plumage before winter.
8. The blossoms from the branches have disappeared.

There are lots of other activities that you may like to build upon around this exercise, for example, stories, poems, a wordsearch or acrostic, perhaps. Limericks are very popular with pupils, for example.

A jolly old geography teacher
Was hunting an alien creature
While searching the trees
He was caught round the knees
And a voice said, "Now I'm gonna eat ya!"





Crack the forest code

We are keen to encourage safe and sensible behaviour when children visit woodland areas, so the code is intended to make them think about sensible precautions. They should dress in suitable warm clothing, make sure that parents know where they are or even get a grown-up to help them plan their trip.

It is also important to remind students about staying on the path, not harming wildlife and taking their litter away from the forest after their visit.

- Stay on the Path
- Don't hurt the animals
- Leave no litter only footprints





What's in your kitbag?

English En1: speaking and listening (3a)

This is another excellent topic for discussion. There are no right or wrong answers, although students should certainly take a notebook and pencil, a forest guide and a carrier bag for litter. There are some excellent guides available, such as the **Usborne** series *Great Wildlife Search* or *Nature Trail Book of Trees and Leaves* by Ingrid Selberg.

Find the oldest tree

Geography: geographical enquiry and skills (1b)

Maths: Ma4. Handling data. (1d-e, 1h)

There is a strong element of investigation in geography and students should try to collect information about the forest by measuring different trees, recording their circumference and then calculating the age of each tree. Of course, different trees grow at different rates, so it is hard to have a hard-and-fast rule, but the average oak increases in circumference by more than 1 cm every year, so we can make an estimate of the age of each tree.

Trees grow slowly in a forest because there is more competition for light and space. Garden trees grow slightly faster.

The rings inside a tree give a clear indication of age and act like a bar-code on the goods in a supermarket, so that every piece of wood contains a telltale pattern that allows it to be dated. In a recent Time Team episode, one plank from the bottom of an ancient well was dated to 1086 using dendrochronology – a very precise piece of research.

Any very large and mature trees might make a suitable subject for the photo competition.





Investigate my friends and me

Science: life processes and living things. Variation and classification (4b-c)

Science: living things in their environment. Adaptation (5b)

There are several ways to investigate the various minibeasts living in a forest. Children might enjoy turning over a rotting log to see what lives underneath, but this is very disruptive and destroys the habitat for those creatures. A far more sensitive method would be to make a bug catcher from an empty 2-litre drinks bottle (remember to wash it out), cutting off the top of the bottle and turning it upside-down to make a funnel and then filling it with soggy leaf litter from the forest floor.

Most creatures prefer cool, damp conditions, so the minibeasts will burrow down and drop into the bug catcher. Leave a few wet leaves for them to prevent any harm. A strong bright light such as the sun or a desk lamp will encourage them to burrow downwards if the base of the bottle has been wrapped in dark paper.

A tray full of habitats

Science: Sc1 life processes and living things. Life processes (1c)

As an alternative in the classroom, find a large plastic tray and divide it into 4 sections using wet potato peelings, damp leaves, dry leaves and sand. Each corner of the tray provides a different habitat. Add a few beetles or a woodlouse and the animals will soon choose their favourite environment. Minibeasts will head for the wet leaves and stay there.

Please remember that all creatures should be returned unharmed to their forest environment once the test is over. The plastic bottle should also be recycled.





The forest climate

Geography: geographical enquiry and skills (2b)

Before carefully recycling the plastic bottle, use it to test the amount of rainfall landing in the school grounds by placing it, empty, in an open location on a wet day. If you have a second bottle set up, with a funnel to collect the rain just like the first, but place it under the branches of a tree, then you can show the children just how much rain will be 'intercepted' by the tree and its branches.

Plant your own a tree!

Science: living things in their environment. (5a)

This is a super activity for young geographers and helps to remind them about all the problems caused by the destruction of forests around the world. Trees are good because they absorb CO₂ and provide a habitat for lots of animals.

There were so many trees in this country at one time that a squirrel could travel from Land's End to John o' Groats without touching the ground. Now, forests cover only 8% of Britain.

Science: life processes and living things. Green plants (3a)

Geography: Knowledge and understanding of environmental change and sustainable development (5a-b)

Please encourage your pupils to give the local forest a helping hand. Any seed such as an acorn, chestnut or the winged 'helicopters' from a sycamore would be suitable for this activity.

Soak the acorn or nut in warm water overnight. Find a good-sized flowerpot and fill it with a mix of soil and compost. Make sure it's damp but not too wet. Put the seed in the flowerpot and cover it with about 2cms of soil. (It's a good idea to plant up a few in case some don't work).

Put pots in a shady place outside for the winter and don't forget to check them from time to time to make sure the soil isn't too dry. Be careful you don't overwater, though. If the soil is too soggy, the seeds will rot.

In spring, the seedlings should start to sprout into action. Wait until they're a reasonable size and then help pupils to choose the most appropriate spot to plant them outdoors.





Velvet Young Nature Photographer of the Year

Any young person with a camera has a chance to become a prizewinner. There are three separate age bands, so everyone has a fair chance. Pupils may like to enter their own work, but schools can also put together a collection of photos to enter the competition.

Check the entry form online at www.velvetbabymd.com/WWF

Ask the children to take their cameras with them when they visit the forest. They may like to snap animals such as beetles and millipedes, or the forest and local landscape. Pictures fall into 2 categories: species or spaces.

