

## Pre and Post Lesson Activity Ideas

TOPICS

DISCOVER YOUR TREE

KEY STAGE

2

Page 1 of 4

### Pre Lesson Activity Ideas

#### Activity 1 – How plants work

Label parts of a tree, add the workings of a tree,(roots drawing up water and nutrients; leaves acting as the food factory producing sugars from light (photosynthesis) using CO<sub>2</sub> & producing O<sub>2</sub> as waste; tubes (phloem & xylem) transporting these around the plant).

#### Activity 2 – Tree identification

Use leaves to identify school trees, create a chart showing types of trees at school/area, what other features can be used to identify?  
What are the differences between deciduous and evergreen trees?

#### Activity 3 – Tree products

Collect products from home and around school that come from trees.  
(See list below for ideas). What would life be like without trees?

#### Activity 4 – Tree habitat

What creatures live on trees? Research the oak tree and find out all the different animals that are dependent on the oak for their homes. What other creatures depend on trees for their home? Can you find the most bizarre animal (e.g.the flying squirrel or the aye aye?) can you design your own creature that lives in trees?

### Post Lesson Activity Ideas

#### Activity 1 - Leaf pressing

Collect leaves from as many different trees as possible. Preserve them by pressing them between sheets of newspaper to absorb the moisture and heavy books. These can be used to create an identification key or laminated to create leaf mobiles or used to create leaf pictures or simple greeting cards.

#### Activity 2 – Measuring and Graphs

Use different methods to measure the height of trees:

- Looking between your legs,
- Using a pupil standing at the base of a tree, estimate how many of that pupil standing on top of each other would be needed to make the height of the tree. Measure the pupil and times this by the number to get the height,
- Use a clinometer to find the distance from the tree required to get an angle of 45°. The distance from here to the base of the tree is equal to the height + distance from the person's eyes to the ground. (For homemade clinometer and use see instructions below).

Which is the most accurate method?

For other methods see; [www.saps.plantsci.cam.ac.uk/worksheets/activ/prac7.htm](http://www.saps.plantsci.cam.ac.uk/worksheets/activ/prac7.htm)

Measure the height and girth of all the trees in the school and make a graph, calculate the average height and girth, is there a link between height and girth?

Do holly leaves have the same number of prickles or do oak leaves have the same number of lobes? Collect leaves, count prickles/lobes, make a graph by sticking leaves onto graph paper (number of leaves on horizontal axis, number of prickles/lobes on vertical axis)

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Page 2 of 4

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#### Web Links

- <http://www.naturedetectives.org.uk> – lots of downloadable resources for exploring the outdoors.
- <http://www.british-trees.com> – a good online tree guide with lots of identification features and facts on British species.
- <http://www.treeforall.org.uk/JoinIn/AsASchool/> - resources for planting trees and hedges plus teaching resources
- <http://www.saps.plantsci.cam.ac.uk/trees/> - An online key for identifying trees and shrubs.
- <http://www.forestry.gov.uk/forestry/infd-6xdck4> - Westonbirt resources for visits/activities in the woods, including numeracy ideas.

### Post Lesson Activity Ideas

#### Activity 3 – Plant a tree

Collect seeds (acorns, beech nuts, conkers etc) and plant them to see what happens.

#### Links

- [http://www.naturedetectives.org.uk/download/worksheet\\_collectingseeds](http://www.naturedetectives.org.uk/download/worksheet_collectingseeds) - information sheets on different trees and brief notes on seeds and planting.
- <http://www.treecouncil.org.uk/?q=publications> – The Good Seed Guide, all you need to know about growing trees from seed.
- [http://www.naturedetectives.org.uk/NR/rdonlyres/CB4107A0-85A1-4CBE-89A0-C06C64F5A054/0/bag\\_seeds.pdf](http://www.naturedetectives.org.uk/NR/rdonlyres/CB4107A0-85A1-4CBE-89A0-C06C64F5A054/0/bag_seeds.pdf) - Make your own seed collecting bag.
- Woodland Trust have free tree planting packs available each year, to apply go to: <http://www.treeforall.org.uk/JoinIn/AsASchool/>

#### Activity 4 – Tree literacy/ History

- Use words to describe trees from visit to Rosemoor to stimulate poems about trees. These can be written into tree collages/drawings etc
- Children can have a go at 'Kennings' to describe woodland plants and animals (e.g. Mouse catcher, Night stalker, Silent swooper, Star hooter = Owl)
- Looking at age of trees children can investigate the historical events trees will have lived through and write stories about the events that may have gone on around a particular tree.
- Children could write about the lifecycle of a tree (for inspiration see: [www.adventureecology.com/2010/08/lifecycle-of-a-seed/](http://www.adventureecology.com/2010/08/lifecycle-of-a-seed/) - a beautiful animation, telling a story about the life-cycle a seed and of the food we eat.)

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Page 3 of 4

## Products from Trees

dye  
 oxygen  
 piano keys  
 rayon - books  
 fishing floats - inks  
 telephone books  
 varnish - atlases and maps  
 price tags - ping pong balls  
 tires - umbrella handles - signs  
 car instrument panels  
 space craft re-entry shields - newspaper  
 photographic film - newspapers - posters  
 football helmets - toilet seats - guitars  
 road building materials – insulation  
 shatterproof glass - artificial vanilla flavouring  
 cork - vacuum cleaner bags - movies - stadium seats  
 adhesives - decorations - turpentine - camphor - waxes  
 fireworks - crayons - tannin - charcoal - pine oil - pitch  
 musical instruments - perches for birds of prey - toilet paper  
 milk cartons - flooring - bark for landscaping - cardboard  
 grocery bags - furniture - chewing gum - paper towels  
 oil spill control agents - Christmas trees - hockey sticks  
 wildlife habitat - cosmetics - roofs - baby foods - cider - vitamins  
 cooking utensils - photographic film - lacquer - pallets - rubber gloves  
 mulch - clean water - golf tees - egg cartons - nail polish - fence posts - toys  
 toothpaste - eyeglass frames - syrup - antacids - shampoo - rubber gloves  
 menthol - electrical outlets - medicines - energy for electricity - plates and bowls  
 sausage casings - torula yeast - rulers - wooden blocks - houses - notebook paper - oars  
 plywood - paper plates - computer casings - stain remover - coffee filters - toothpicks  
 movie tickets - carpet and upholstery backsides - imitation bacon - diapers - horse corrals  
 postcards - tax forms - sponges - shade - particle board - shoe polish - luggage - bowling alley lanes  
 postage stamps - colognes - animal bedding - irrigation piping - fruit pie filling - golf balls - game boards  
 suspending agent for drinking soda - pencils - dry wall - baby cribs - baseball bats - lumber - decoys - kites  
 magazines - ice cream thickener - step ladders - birthday cards - broom sticks - cider - ceiling tiles  
 crutches - backyard play sets - axe handle - food labels - 2 x 4's - sweet wrappers  
 scenery - party invitations - disinfectants - CD inserts - gummed tape - fruit  
 railroad ties - shelter belts - puzzles - swings - baking cups  
 buttons - cutting boards  
 benches - bird houses  
 stereo speakers  
 garden stakes  
 stairways - beds  
 tables - barrels  
 window frames  
 bulletin boards  
 linoleum - seesaws  
 fishing boats - billboards  
 disposable medical clothing  
 church pews - totem poles - desks  
 How many other tree products can you list?

## Making a simple Clinometer

Why not try making this Clinometer and use it to measure trees in your school grounds?

### You will need:

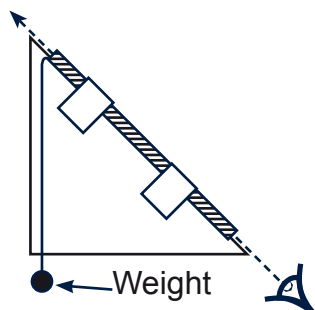
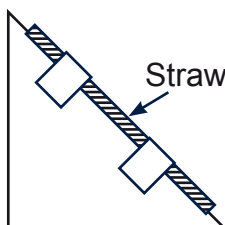
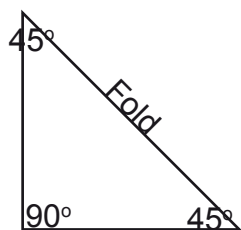
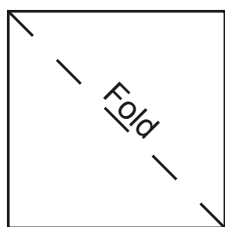
A square piece of card

A drinking straw

A length of string

Sellotape

A weight (e.g. piece of plasticine)



### What you do:

1. Fold the card to form a triangle.
2. Since the paper was square, an isosceles triangle will be formed – 2 sides of equal length, a 90 degree angle and two 45 degree angles.
3. Tape the drinking straw along the long edge of the triangle. The straw will be used as a sight.
4. At the upper end of the long fold attach the string. Tie a 'blob' of plasticine to the other end of the string, making it long enough so that the weight dangles a few inches below the corner of the triangle (see diagram). Held as shown in the diagram, the student will look up through the (non-string end of the) straw.

### Using the Clinometer

- Work in pairs.
- One student looks up through the straw to sight the top of the tree, while the other student guides and tells them when the string is hanging straight down, (i.e. parallel to the edge of the card).
- When the student sighting through the clinometer can see the top of the tree with the string hanging straight down they are as far away from the tree as the tree is high. They can now simply measure the distance from where they are to base of the ground. (Remember to add on the height from the student's eyes to the ground).

***Thank you to The National Arboretum, Westonbirt for these instructions.***

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[www.rhs.org.uk](http://www.rhs.org.uk)