Keep Scotland Beautiful

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How to measure the height and age of a tree

Ages: 5 – 18

Time: 30 minutes

Purpose: Pupils will learn how to apply simple maths in a practical context to estimate the height and age of a tree. This activity has been adapted from a resource created by the Foundation for Environmental Education.

Curricular links

MNU 1-11a, 2-11a-b, 3-11a, 4-11a

Exercise 1: Measuring approximate height of a tree

You will need a measuring device (measuring tape / meter stick / trundle wheel) for this exercise.

1. Pupils should work in pairs.
2. Ask each pair to find any tree/s in their local surroundings that they would like to know the height of.
3. One pupil from each pair should stand with their back towards the tree, then bend over and look between their legs. Ask them to move towards or away from the tree until they can just see the top of the tree.
4. Ask the second pupil from the pair to measure the distance between the upside-down pupil and the tree using your measuring device.
5. Measure the length of one leg of the pupil who turned upside down.
6. Add the two measurements together:

   Leg length (m) + Distance to tree (m) = Approximate height of tree (m)

Exercise 2: Determining the Approximate Age of the Tree

You will need a measuring tape for this task.

1. Pupils should work in pairs.
2. Ask each pair to find any tree/s in their local surroundings that they would like to know the age of.
3. Ask one pupil from each pair to use the measuring tape to measure the distance from the ground to 150 cm up on the trunk of the tree.
4. The second pupil then needs to hold a finger at that height on the tree trunk.
5. Ask the first pupil to measure the circumference (all the way around) the tree trunk at the level that the second pupil is holding their finger.
6. On average, trees grow at 2.5 cm per year. Therefore, to estimate the age of a tree use the following sum:

   Tree circumference (cm) ÷ 2.5 (cm/year) = Approximate age of tree (years)

LEARNING ABOUT FORESTS

Adapted from The Foundation for Environmental Education's How to measure the height and age of a tree resource.