

Build a Tree
KS3 activity (Year 7)– a kinaesthetic way to introduce the basic functions of different tree parts



Aim

To demonstrate the functions of different parts of a tree
 To understand that trees have different tissues that are specialised to carry out different functions
 To refresh the key vocabulary associated with the structure and function of a tree covered at KS1/2
 To energise a group at the start/end of a lesson

Preparation

- Area to play activity needs to be large enough for group to stand comfortably in a spaced out circle.
- Students will be asked to fit/lie of the floor so check area for excess litter/dog fouling before activity.
- Take bin liners for students to sit on if it is/has been raining
- Take a list of tree parts and functions as a reminder when running the activity (easy to forget a part!)

Timing

< 15 minutes

Activity description

During this activity students will construct a model of a tree by taking the roles of the different parts/tissues of the tree and acting out their functions. The diagram below illustrates the formation of the students. The tree is built from the core outwards. The parts of the tree are listed below with a description of their function, the action students will do to illustrate their function, the number of students taking on each role, the arrangement of the group, and some notes on the function of the tissue. They are listed in order that they will be added to the living model:

Heartwood	2 people	- Stand back to back - Arms in the air - “Tall and strong”	Inner core of trunk Strength to tree Once living, now dead
Taproot	4 people	- Sitting on the floor - legs out in front of them - “slurp”	Water from deep in the ground Anchor the tree Lots per tree
Lateral roots	4 people	- Lying down on the ground - Arms and fingers spread out - Long hair spread out - “slurp”	Large numbers Anchor the tree Fine hairs spread out Absorb water and nutrients
Sapwood / Xylem	2 people	- Standing - Moving arms up and down - “whoosh”	Carry water up the plant 1400 litres of water a day
Cambium/ Phloem	2 people	- Standing - moving arms up and down - “moving food up and down”	Growing part of the tree – add layers of sapwood each year Layers added to the trunk (not pushed out from the centre) Transporting food (to both leaves and roots – distribute around the tree)
Leaves	4 people	- Standing - Arms out in front of them	- Chlorophyll - Photosynthesis, producing

		<ul style="list-style-type: none"> - Fingers fanned out and moving - "We make food" 	carbohydrates from Sun's energy
Bark	12 people	<ul style="list-style-type: none"> - Hold hands, make a ring around the rest of the tree - Arms of leaves come through ring of bark - "we protect" 	<ul style="list-style-type: none"> - Stop tree drying out - Protect flow of food in the phloem - Protection for pests, fungi and lichens - Cracks and stretches

After each new tissue is added get the students to repeat their chant, e.g. we are strong. Build up the tree one tissue at a time. Once all the students are in place, get them all to do their actions and their chant at the same tree, to demonstrate the functions working together.

This activity ideally requires a full class to participate (20-30 students), however if you want to run the session with less students you can have just one student taking on each role.

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| <p>Black: Trunk "I am strong"</p> <p>Blue: Tap roots "slurp"</p> <p>Red: Lateral roots "slurp"</p> <p>Yellow: Phloem "Carrying food up and down"</p> <p>Yellow: Xylem" + "Whoosh"</p> <p>Green: Leaves "We make food"</p> <p>Brown: Bark "We protect"</p> |
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