



Activities:  
living things

How a tree works



What you need

Nothing.

As this activity needs dry ground, it may be best done inside or on a visit to school.

Time

10-20 minutes

### The question

How do the different parts of a tree work?

### The activity

Explain that just like humans are made of lots of these parts, trees have parts that help them live. We are going to create a model, with our bodies, of how this works.

The next page explains the roles of the different parts of the tree. This model is based on 30 children, so adjust the phloem and outer bark numbers as needed.

1. The child acting as the heartwood holds their arms up to show muscles and stand in the centre of the space, chanting "I support, I support."
2. The child playing the taproot sits down at the foot of the heartwood child, hands planted firmly on the ground, making slurping noises.
3. The 2 lateral roots lie down on their backs spreading out from the taproot with their feet toward the heartwood. They also make slurping sounds.
4. The 2 xylem children join hands to make a ring around the heartwood. They stand between the lateral roots facing in toward the heartwood. They pretend they are drawing water up from the roots by lowering their joined hands, then raising them above their heads, saying "whoosh, whoosh".
5. The 4 cambium children join hands around the sapwood, chanting "We make new cells, we make new cells."
6. Next, the 8 phloem children join hands around the cambium. They pretend they are transporting food down from the leaves by first holding their hands above their heads, lowering them, then raising them again. They will chant "Food to the tree, food to the tree."
7. Finally, the 12 outer bark children will form a circle around the entire tree, facing outward and holding hands. They should growl and pose like football players to defend the tree.

Once everyone is in position, ask the children to go through their motions: The roots taking up water from the soil, the sapwood transporting water up the trunk to the branches and leaves, the phloem carrying food down from the leaves to the trunk and roots, the cambium chanting, "We make new cells", and the bark growling.

### More able / older pupils

Discuss with the children what would happen to the tree if the bark (or worse still, the bark and the phloem) were damaged by people (the tree would probably die).

### Less able / younger pupils

You could omit some of the technical language and just explain what those parts of the tree do.



Families

Difficult to do with families unless you have a large multi-family group who are all willing to join in (and the children are not too young).

### Curriculum links

Science – how living things live and grow





## The parts of a tree

### heartwood

Dead wood at the centre of the tree.

### taproot

The main roots that anchor the tree and take up water.

### lateral roots

The roots which take water from the ground to the taproot.

### xylem

Pronounced 'zy-lum'

A pipeline taking water and minerals to the rest of the tree.

### cambium

New growth which makes the trunk, branches and roots grow thicker.

### phloem

Pronounced 'flow-um',

Takes food (in sap) from the leaves to the rest of the tree.

### outer bark

Protects the rest of the tree.

