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## My Life Support

TOPIC: SCIENCE

THEME: Trees and My Health

**Aim** – to undertake a series of simple outdoor science experiments and investigations to help pupils understand the vital role trees play in keeping us alive.

### Introduction

There are several key elements we need to live long, healthy and happy lives, namely food, water, oxygen and shelter - but how can the trees in our environment help with this?

Through several outdoor science experiments and investigations, this activity explores the important role trees play in supporting us by providing these basic essentials and, as such, highlights the value of contact with trees in our daily lives.

### Curriculum links – England

- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
- Asking relevant questions and using different types of scientific enquiries to answer them
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions

### Curriculum links – Scotland

- SCN 1-03a, SCN 2-01a, SCN 2-02b, SCN 2-20b
- Develop the skills of scientific inquiry and investigation using practical techniques
- Express opinions and make decisions on social, moral, ethical, economic and environmental issues based upon sound understanding

### Weblinks

[lfl.org.uk](http://lfl.org.uk) [youngtreechampions.org](http://youngtreechampions.org) [treecouncil.org.uk](http://treecouncil.org.uk)

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## Resources

- Clear plastic tubs or glasses
- Water
- A variety of different species of green tree leaves
- Clear plastic bags (for example sandwich bags, small stones, elastic bands and / or string)
- Scissors (if using string)

## Activity 1: Trees provide us with food

Spend some time with the trees in your grounds and walk to green spaces. Use ID charts and keys to identify the different species and then investigate which provide a source of food for humans, either now or in times past.

Remember, it's not just humans that tree species can support – many bird, animal and insect species rely on trees as a food source. Which tree species offers the most food opportunities? Consider all parts of the tree such as flowers, seeds, leaves, bark and roots.

## Activity 2: Trees produce oxygen

Collect a range of green leaves from different trees. Be careful how you do this, for example avoid climbing to height or pulling off whole branches.

Place several leaves of the same tree species in different clear plastic tubs or glasses and submerge with water. Place the tubs or glasses in the sunniest spot you can find and leave in full sun for 20 – 30 minutes.

What do you notice about the surface of the leaves after this time? Why are there more bubbles on one side of each leaf compared to the other? Has one type of leaf produced more bubbles than the others? What does the presence of bubbles on the leaves mean?



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### Activity 3: Trees produce water

Place a stone in the bottom of a clear, dry plastic bag to act as a weight and then place the end of a tree branch covered in leaves in the bag. Secure the bag to the branch using an elastic band or string. Leave the bag in place for 24 – 48 hrs before checking.

Upon checking you will notice the inside of the bag is no longer dry. Why is this? Do different tree species produce different amounts of water? Do the weather conditions or the season effect the amount of water produced? Why do leaves produce water?

Compare the temperatures in the shade of different trees – different canopies of leaves provide varying shade from the sun, but all leaves produce water.

### Activity 4: Trees provide shade and shelter

Different tree species vary in shape, canopy size, leaf shape and branch length, therefore vary in the shade and shelter they can provide. Take temperature readings at the same time throughout the day under various tree species in the same location to highlight which leaf canopy provide the best shade and measure rainfall under each to ascertain the best species for shelter.

#### Take action

Use your scientific data to help inform action, for example identifying what tree species to plant in your school grounds and where, to help support our health and wellbeing.

#### Key skills

- Devising scientific methodology
- Accurate recording and sharing of data (data handling)
- Supports enquiry and research skills



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