



## How much water does my plant need?

### Lesson overview:

In this lesson, children learn about what plants need to grow and be healthy. Then they are introduced to the impact of some of the extreme weather conditions that British farmers have experienced in recent years and the impact these have. Children then investigate the optimum amount of water a plant needs and report their results.

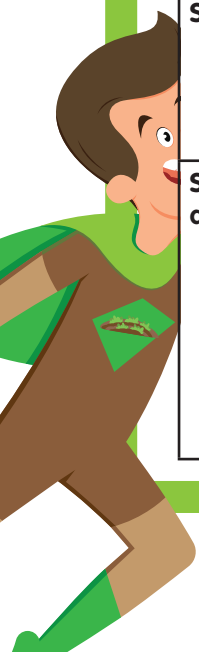
This lesson could be used to introduce some of the challenges that climate change creates for British farmers and start the children thinking about how they might design an idea, invention or innovation that will help farmers continue to care for the environment and be climate superheroes for their Farmvention competition entry.

### Equipment needed:

- A selection of seeds
- Small plant pots (made from a biodegradable material)
- Measuring cylinder or small jug

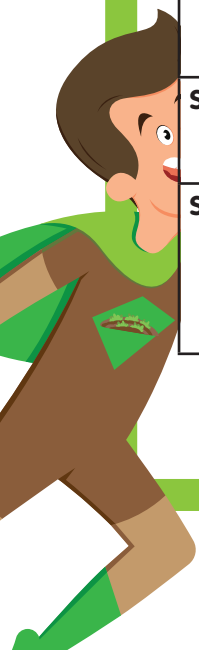
### Presentation guidance:

<p><b>Slide 2:</b> <b>What do plants need?</b></p>	<ul style="list-style-type: none"> <li>• Explain that just like humans, plants need some things in order for them to grow and be healthy. Ask the children if they can think of any things that plants need. Create a list on the working wall.</li> </ul>
<p><b>Slide 3: Carrot farm</b></p>	<ul style="list-style-type: none"> <li>• Share the Carrot Farm video to demonstrate the conditions needed for carrots to grow in the UK.</li> <li>• Ask the children to name any of the conditions they remember from the video and add them to the list.</li> </ul>
<p><b>Slide 4: Light</b></p>	<ul style="list-style-type: none"> <li>• Talk through the power point to explain the conditions plants need in more detail:             <ul style="list-style-type: none"> <li>- Plants need light in order to grow and be healthy.</li> <li>- Plants are very clever and they can turn sunlight into their own food in their leaves.</li> </ul> </li> <li>• We also need sunlight to give us Vitamin D and keep us healthy.</li> </ul>
<p><b>Slide 5:</b> <b>Suitable temperature</b></p>	<ul style="list-style-type: none"> <li>• Ask the children to think about how they feel if they get too cold or too hot and what they do about it.</li> <li>• Just like us, plants need a suitable temperature in order to be healthy. They will not start to grow from seeds if their environment is not the correct temperature.</li> </ul>
<p><b>Slide 6: British fruit and vegetables</b></p>	<ul style="list-style-type: none"> <li>• Explain that different plants need different temperatures. This is why we can grow certain fruit and vegetables in Britain but not all of them. Tropical fruit, for example, needs to be in a much warmer environment in order to grow and be healthy.</li> <li>• Explain that eating fruit and vegetables that are grown in Britain is one way that we can care for the environment because it reduces how far the food has to travel to reach our plates. This reduces the need for transport, reducing air pollution.</li> </ul>





<p><b>Slide 7: Water</b></p>	<ul style="list-style-type: none"> <li>• Just like us, plants need water. Without the right amount of water, plants cannot grow and be healthy.</li> <li>• At the very start of a plant's life, it needs water to make it start to grow into a little seedling.</li> <li>• Once the seedling has grown some roots, the plant needs water to take up the nutrients (healthy things that help the plant grow) out of the soil.</li> <li>• Plants are very clever and they can make their own food in their leaves using sunlight and water.</li> </ul>
<p><b>Slide 8: Not enough water</b></p>	<ul style="list-style-type: none"> <li>• Water is very important to farmers. If we don't have enough rain, their crops will not be able to grow properly.</li> </ul>
<p><b>Slide 9: Too much water</b></p>	<ul style="list-style-type: none"> <li>• Ask the children what they think will happen if plants have too much water?</li> <li>• Too much water is also a big problem for farmers. Flooding or heavy rainfall can affect the health of a farmers' soil as it washes away some of the soil particles and nutrients that plants need to grow and be healthy.</li> </ul>
<p><b>Slide 10: Healthy soil and climate change</b></p>	<ul style="list-style-type: none"> <li>• Healthy soil also stores carbon. Carbon in the atmosphere causes climate change so by looking after their soil and keeping it healthy, farmers are helping to fight against climate change.</li> </ul>
<p><b>Slide 11: How much water does my plant need?</b></p>	<ul style="list-style-type: none"> <li>• Explain that different plants need different amounts of water.</li> <li>• Introduce the task: the children are going to be carrying out an investigation to find out how much water a particular plant needs.</li> </ul>
<p><b>Slide 12: Setting up our investigation</b></p>	<ul style="list-style-type: none"> <li>• Explain the investigation: the children will be working in groups to plant three of the same seeds.</li> <li>• One seed will be given no water, one will be given a small amount every day and one will be given a large amount every day.</li> <li>• Model how to set up the investigation and sow the seeds.</li> <li>• Ask the children to set up their investigations in their groups. You might like to give each group a different type of seed to investigate.</li> </ul>
<p><b>Slide 13: Observation</b></p>	<ul style="list-style-type: none"> <li>• Agree the two amounts of water to be used.</li> <li>• Model how to measure water accurately.</li> <li>• Ask the children to keep a journal to record their observations as their plants grow and challenge them to keep a running total of how much water they have given their plants.</li> </ul>
<p><b>Slide 14: Conclusion</b></p>	<ul style="list-style-type: none"> <li>• Ask the children to explain their results and what they have learnt about how much water their plant needs.</li> </ul>
<p><b>Slide 15: Farmventing</b></p>	<ul style="list-style-type: none"> <li>• Encourage the children to think about how they could use their learning about what plants need and soil health to help them design an idea, invention or innovation that will help farmers continue to care for the environment and be climate superheroes.</li> </ul>





## Key Stage 1 Curriculum Links:

Subject	Topic	Objective
Science	Plants	<ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>
	Working Scientifically	<ul style="list-style-type: none"> <li>• Asking simple questions and recognising that they can be answered in different ways</li> <li>• Observing closely, using simple equipment</li> <li>• Using their observations and ideas to suggest answers to questions</li> <li>• Gathering and recording data to help in answering questions</li> </ul>

