

# To Grow or Not to Grow



Time | 30 mins

Cost | £

Location | Outdoors / Indoors

Group size | Teams

**What does a plant need to grow? Get outside, get your fingers green, and find out in this fun science experiment.**

## You will learn

### Value the outdoors

Enjoy being outside, feel comfortable in nature, and feel connected to the natural environment

### Develop skills

Gain a range of practical and modern skills for school, work, and your social life.

## You will need

- Plant pots
- Rulers
- Spoons
- Soil
- Cress seeds
- Watering can



## Plant the seeds

1. Everyone should split into groups, and each group should choose a group name.
2. The person leading the activity should show everyone how to prepare a pot of seeds. They should fill the pot about three quarters full of soil, sprinkle on the seeds, and add a light layer of soil on top. Then, they should water it.
3. The person leading the activity should give each group four pots, a watering can, a spoon, and a ruler – and enough soil and cress to fill each pot.  
*It's OK for groups to share a watering can.*
4. Each group should prepare four pots, following step two. They should make sure they're as identical as possible; for example, they should use the same shape pot, and use the ruler or spoon to measure the amount of soil, amount of seeds, and depth of the seeds.

## Chat about seeds

1. The person leading the game should ask people what seeds need to grow. Some people may already know that plants need air, light, warmth, water, and soil (which includes nutrients and minerals the plant needs – things such as nitrogen and calcium).
2. Everyone should think about what might happen if a plant didn't have one of the things it needed.
3. The person leading the activity should explain that each group will keep their four plants under four different conditions, to see how they grow. This is why it was important they were as identical as possible, so everyone knows any differences are because of how the plants were kept.

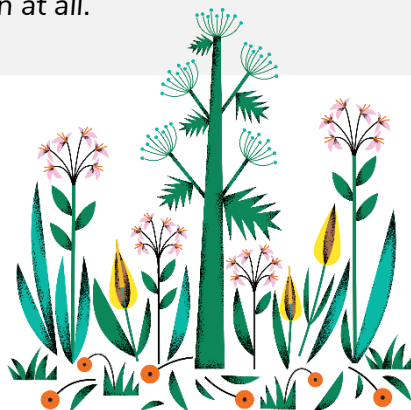
## Prepare the experiment

4. Each group should label all four of their plants with their group name.
5. Each group should label each plant with the conditions it'll be kept in. They should label the plants 'good conditions', 'no water', 'no air', and 'no light'.
6. Everyone should plan how they'll make sure the plants get the things they're supposed to. The 'good conditions' plant should be kept on a sunny windowsill and given a drink of water every day. The 'no water' plant should be kept on a sunny windowsill and not watered. The 'no air' plant should be covered in a plastic bag that's secured by an elastic band – but it should be kept on a sunny windowsill and watered every day. The 'no light' plant should be kept uncovered in a dark place and watered every day.
7. Depending on the group, people may take different plants home, leave them at their meeting place, or give them to a volunteer.
8. Everyone should think about what they think will happen to the different seeds.
  - Will any grow?
  - Will they all grow?
  - How might they be different?

## Next time you meet

1. Everyone should bring back their plants (or collect them from a volunteer or meeting place).
2. Everyone should look at whether their plants are healthy. A healthy plant will be standing upright with green leaves.
3. Everyone should compare their plants, and talk about how they look different.

*The seeds kept in the dark will likely be patchy and pale, and the seeds without any water or air are unlikely to have grown at all.*



## Reflection

Time	Activity
10 mins	This activity was a chance for everyone to develop science skills. When people set up the experiment why did they have to make sure that all of their pots had the same amount of soil and seeds? They had to make sure the experiment was fair - all the seeds needed to start the same so people could say that any differences at the end were because the plants were looked after differently (not, for example, that some had more seeds or soil in). What did people expect to happen? Were there any surprises? Some people may have thought that seeds don't grow at all in the dark - were they surprised? Seeds like the dark soil to germinate (begin to grow and put out shoots), but then they need light to grow strong and green.
	This activity was also a chance to value the outdoors. Did people enjoy looking after plants? Great gardeners need to make sure their plants get plenty of air, water, light, and most importantly of all, care.

### Change the level of challenge

You can also grow cress on damp kitchen roll on top of shallow trays or lids.

You could add even more pots - a fifth could have no soil, or too much water. You could even use it to show how fertiliser can help growth. Choose something such as organic liquid seaweed, which is available without chemical additives.

### Make it accessible

All Scout activities should be **inclusive and accessible**.

### Take it further

Reuse the pots to sow some more seeds (or beans that are ready for planting). Dwarf beans are easy to grow. Tomato, radish, and carrot seeds need a little bit more care, but they're fun to grow from seed. Don't forget to make sure they all have perfect conditions this time!

### Youth shaped guidance

The group can choose what they'd like to grow. It's best to pick something that's easy to grow, for example, sunflowers, sweet peas, nigella, and marigold.



## Safety

All activities must be safely managed. Use the [safety checklist](#) to help you plan and risk assess your activity. Do a [risk assessment](#) and take appropriate steps to reduce risk. Always get approval for the activity and have suitable [supervision](#) and an [InTouch](#) process.

- **Gardening and nature**

Everyone must wash their hands after the activity has finished. Wear gloves if needed. Explain how to safely use equipment and set clear boundaries so everyone knows what's allowed.

