

1.7 Growing gloves

The Wow

This is a great activity for first-hand observation of **germination**, as children can watch and compare how different seeds sprout.

You will need five seeds of different types, cotton wool, transparent disposable gloves and elastic bands or string. Plastic gloves can be used, though there are now some biodegradable and compostable alternatives available which would make this activity a more sustainable one. Dampen the cotton wool and place a small amount in the end of each finger, then add a different type of seed to each one. Tie the top of the glove together using string or an elastic band. Make sure that some air stays in the glove; you could blow a small puff of air into the glove before tying shut to inflate it a little. Then, attach each glove to a window so that it will get plenty of sunlight and leave the seeds to grow. After each has sprouted, you could cut the fingers off and plant the seeds in soil or compost to continue growing. Fast-sprouting seeds are better for this activity, such as cress, sunflower seeds, peas, sweetcorn, dandelion seeds and most herbs. To give the activity an extra 'wow factor', time-lapse cameras can be used to monitor the growth of the seeds. These are cameras that can be set to take photographs at given intervals of time. This allows children to 'see' very slow things happening over a short period of time, as the photographs can then be turned into a video or displayed in sequence. Trail cameras can be used for this, or there are a number of apps that can be downloaded to smartphones and tablets that have a time-lapse function (See Activity 1.4: Caught on camera).



What's going on?



Contrary to popular belief, seeds do not need soil in order to germinate. All they need is the correct temperature, oxygen and some moisture. Some seeds also need a certain amount of light. The conditions inside the glove are just right for a number of familiar seeds to germinate and begin growing. They are very unlikely to do well in there for a longer period of time though! As they grow, they will need more air, more space and, in order to grow well, nutrients from soil.

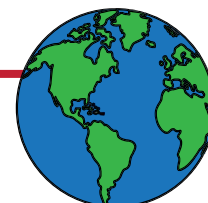
The Why

WHY?

This activity is great for allowing children to observe the germination process in action and allows them to compare similarities and differences between different seeds. It is also useful when children are learning about the requirements of growth for plants.

This activity lends itself really well to pattern-seeking – children could investigate: whether roots always sprout before shoots; whether all seeds germinate at the same time; whether all roots grow downwards; and whether all shoots grow at the same speed. It is a good one to carry out as an observation activity at first, then children could use their observations to ask further questions and plan their own investigations. For example, the children in one class who carried out this activity noticed that the smaller seeds germinated first, followed by the larger ones in order of size. They then used these observations to plan their own fair test investigation to see how the size of the seed affects the germination time. As there are only a small number of variables to control, this is a good investigation to plan for children who are still learning about fair testing and how to identify and control different variables. Taking accurate measurements of the roots and shoots as they grow is also a good opportunity for children to practise using a ruler or tape measure and getting to grips with standard units of measure.

In the Real World



Seed science is the name for the particular branch of **botany** that looks at seeds and how they germinate. Knowing about different conditions for seed germination and early plant growth is important for a range of different industries, but particularly **agriculture**. Farmers need to know when and how to scatter their seeds, and the ideal conditions for their success. Without this knowledge, they risk wasting seeds or growing poor or limited crops. In developing countries, farming makes up a large proportion of employment and livelihoods, meaning that this is especially important knowledge for farmers working in these areas.

To add an extra 'real life' layer to children's learning, they could visit a local farm or speak to a farmer to learn about how they apply their knowledge about seeds to make decisions about when, where and how to plant crops.

Health and Safety Notes

- Make sure that you are fully aware of any allergies before bringing seeds into the classroom
- Avoid using seeds that have been treated with poisonous pesticides. Check the packaging of any seeds to find out. Seeds sold as food in supermarkets or health food shops will be fine. If you must use them, handle them with forceps or wear plastic gloves