

Biology at Home - video 2

Plants Galore task sheet

The notes on this sheet support the activities suggested by Alan in Biology at Home video 2. They seek to provide a range of thoughtful activities that could be done to explore the ideas raised in the video.

The main focus of the tasks is the sharing of ideas and thoughts and so they work best if done in collaboration with another person at home.

Please keep a record of what you do in a journal or on your phone.

Task 1 - poems and rhymes

Find out if anyone you know has any favorite plant rhymes or poems and what they mean to them. Rhymes such as Ash before Oak are often termed 'Old wives tales' but could they be true? If you have a favorite flower or plant see if you can find any poems about them just like Alan did with the Cow Parsley.

Task 2 - seeds and germination

Try growing some large seeds in a bag, as shown by Alan, to observe how the roots and shoots develop. You could make drawings or take photos to create a time-lapse sequence. The seedlings could then be planted in a pot or out in the garden.

Carry out an investigation to find out what seeds need to germinate. Start by listing the variables that you think are important and then carefully plan how you are going to prove which ones are actually important. Cress is good to use for this as once grown it can be eaten.

Task 3 – plant structure

This task is about trying to imagine what it looks like and what is happening inside a plant.

- Tie a bag around a group of leaves in the garden and leave it for 24 hours. What do you think will happen and why? Can you explain what happens?
- Find the xylem vessels in some celery and try to imagine what it is like inside the stem of a plant. Does Alan's model of straws help you to picture how water might move inside a plant? Do you have another way that helps you to think about this?
- Draw a diagram of a leaf (called a cross-section) showing all the cells, just like the one drawn by Ruby, and the holes on the underside called stomata. Try to imagine what is moving into and out of the leaf during the day and during the night. The two reactions; photosynthesis and respiration will help you here. Try finding out what people in your house think of this before making up your mind and then sharing with others. You can use the sheet provided

Task 4 – flowers and pollination

This task is about making a collection of flowers and then exploring how they are made and identifying all of their main parts.

Try to draw what you see when you cut open a flower and compare this to a diagram – can you find and name all of the parts? Are all of the flowers you have the same? If they are different then could that be to do with the animals that pollinate them?

Please do not pick wild flowers.

We did not mention moths or butterflies – are they important in pollination? How do moths find the flowers at night?

Alan mentions pollen tubes – what are they are how are they formed? If you find this out you could tell the story of a pollen grain from the moment it gets trapped on a bee's leg till the moment it fertilises an ovule in the ovary of another flower.

Task 5 – fruits and dispersal

Alan suggests that you try and make a model of a wind dispersed seed. Why not try different designs to see which one will fly the furthest?

There were also two research tasks here:

- How many different ways can you find that plants use to spread their seeds? What about Himalayan Balsam and Poppies – how do they spread their seeds?
- Is there a link between the way a plant is pollinated (wind, insect etc.) and the way it's seeds are dispersed? For example do insect pollinated plants always use wind to disperse their seeds?