Scottish Water
Always serving Scotland

Growing seeds

Early level

Description of module

The module consists of two sets of activities, the first aimed at introducing the children to the idea that plants produce seeds, each of which has a 'baby plant' inside. The second set provides many ideas for activities that will introduce and reinforce the fact that plants need water for their seeds to germinate and to grow.

Main experiences and outcomes

Expressive arts

I can create a range of visual information through observing and recording from my experiences across the curriculum.
EXA 0-04a

Sciences

I have observed living things in the environment over time and am becoming aware of how they depend on each other.
SCN 0-01a

I have helped to grow plants and can name their basic parts. I can talk about how they grow and what I need to do to look after them.
SCN 0-03a

Social studies

I explore and appreciate the wonder of nature within different environments and have played a part in caring for the environment.
SOC 0-08a

Health and wellbeing

Together we enjoy handling, tasting, talking and learning about different foods, discovering ways in which eating and drinking may help us to grow and keep healthy.
HWB 0-30a

Technologies

Through discovery, natural curiosity and imagination, I explore ways to construct models or solve problems.
TCH 0-14a

Literacy and English

I listen or watch for useful or interesting information and I use this to make choices or learn new things.
LIT 0-04a

SWEDGS 1 08/13

Scottish Water
Always serving Scotland

Growing seeds

Activity 1

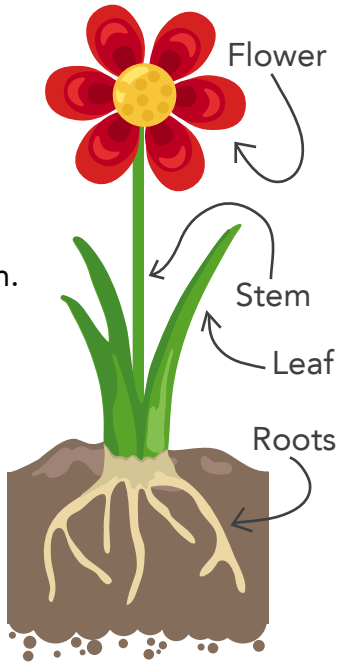
Learning intention
- Children understand that seeds contain 'baby plants' that are all ready to grow

Success criterion
- Children can point to and name the baby leaves in a seed

Suggestions for teachers

1 Parts of a plant

Preliminary work on the names of parts of plants: roots, leaves and flowers; using art and growing plants as a focus for discussion. Explain that water is needed to help a plant grow and to keep it healthy.



2 What's inside a bean?

Soak some butter beans (or runner or dried broad beans) overnight, and ask a helper to take the seed coats off – it's a bit fiddly and might involve a knife, but the children should see this being done. Give a bean each to the children and let them open it up and find the baby plant inside. Alternatively - and more easily – defrost some fresh broad beans and let the children pick them apart. If some preliminary work has been done, it is interesting to ask the children for their ideas on what they think might be inside the seed just before it is opened. Refer to resource sheet 1.

3 Draw what you see

Look carefully at the baby plant under a magnifying glass - a large, fixed one is good, and children can draw what they see. There is space on resource sheet 1 for this if required. Other art work could include making seeds out of Play-Doh and putting a tiny model plant inside.

Scottish Water
Always serving Scotland

Growing seeds

Activity 2

Learning intentions

- Children understand that seeds need water in order to grow
- Children understand that everything – plants, people, and animals – all need water to grow
- Children understand where water comes from, through a discussion on rain and tap water

Success criterion

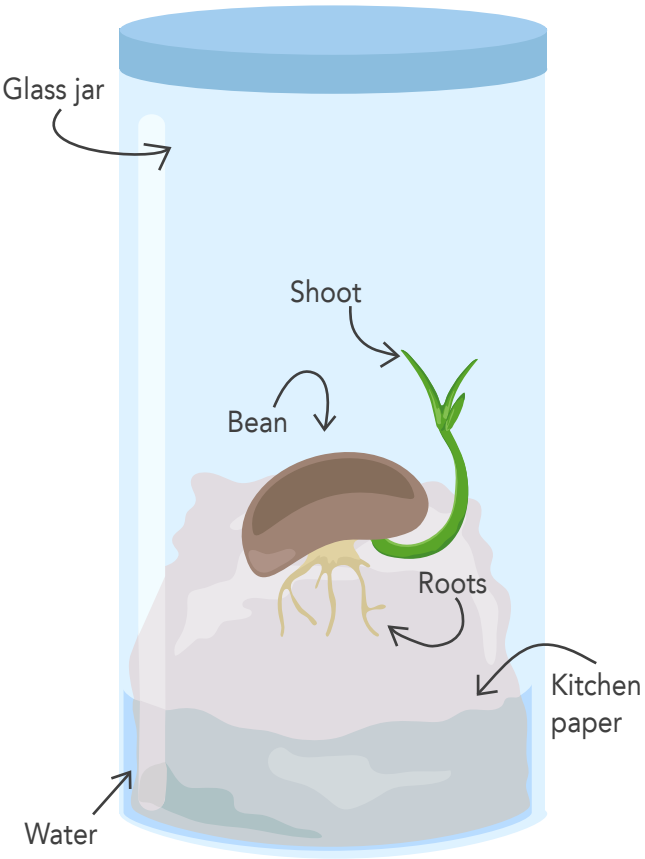
- Children can explain which jars are which

Suggestions for teachers

1 Preparation

Prepare large glass jars by rolling up several sheets of kitchen roll and inserting them in the jars. Children can help by putting some lightly scrunched sheets in the middle of the jars. Wedge a runner bean seed in each, between the sheets of paper and the glass, about half way down the jar. Add about an inch of water to the bottom of some of the jars, but leave the others dry.

Resource sheet 2 can be used to show children the stages of growth of a bean.



Leave some jars dry to show that seeds need water to grow.

2 One week later...

In about a week, the children should be able to observe roots and leaves emerging. Which come first? The children will see that the dry seeds don't grow. Discuss how no rain or water results in no growth. Record with photographs.

3 Planting out

The runner beans can be planted out and grown fully, giving more scope for discussing stems, flowers, pods and finally more seeds, ready to start the cycle again.

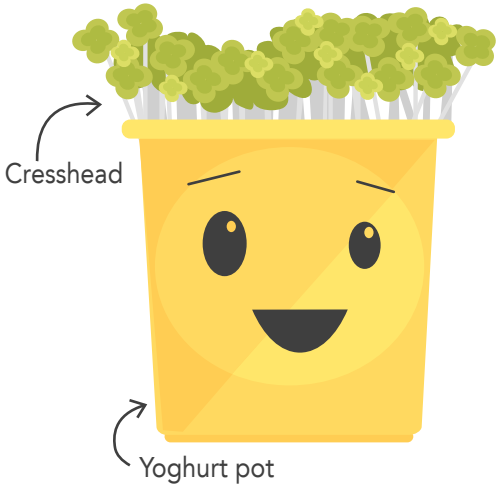
Scottish Water
Always serving Scotland

Growing seeds

Activity 2
continued

4 Associated work could include:

- collage with various seeds
- sprouting mung beans, alfalfa, cress and pea seeds for including in a salad – the process of adding water will reinforce the experiment. Caution – packet seed is often chemically treated, so only use seeds that are specifically for eating
- adding water to the dry jars of beans that didn't grow, and showing how they 'come to life'
- stopping watering one of the growing beans to see what happens
- growing an avocado stone (actually an enormous seed) over a jam jar of water, suspended on toothpicks, with the base of the stone just covered with water
- growing sunflowers for bird food or a competition
- growing a cresshead (a yoghurt pot or whole, empty egg shell with a painted face, filled with kitchen paper, then cotton wool, kept damp, with cress seeds sprinkled on top. Alternatively use the toe of some tights filled with compost and grass seed)



- making a cress caterpillar (cut an eggbox lengthways down the middle to get 3 consecutive compartments, paint on the outside, add face, pipe cleaner antennae, best if you line it with some plastic if it's a cardboard eggbox, kitchen roll, cotton wool, cress or alfalfa seeds)
- growing herbs for sale
- it is possible to grow beans in a plastic bag suspended at a window. Put some compost or a few sheets of moist kitchen paper in the bag to hold the water. There are also specially designed commercial equivalents that work very well
- growing grass seed on compost in a sand tray: the resulting 'field' can be a farm, a playing field, a garden or anything the children imagine

5 Information

Inform the class that not all children would be able to conduct these water-based experiments because in some countries there aren't any rivers or lakes, so water has to be carried from wells that may be a long way away. People in these countries don't want to waste any water at all: it's too precious!

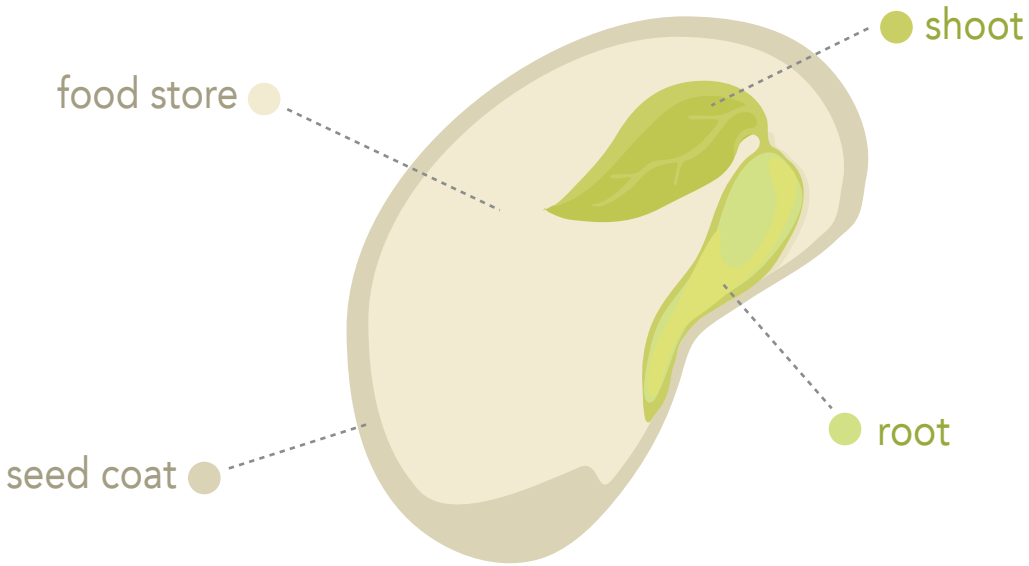
Scottish Water
Always serving Scotland

Growing seeds

Resource sheet 1

The growth of a bean

1 Use this picture to name the parts of your bean seed.



2 Look at the inside of your bean seed carefully. Draw what you see below.

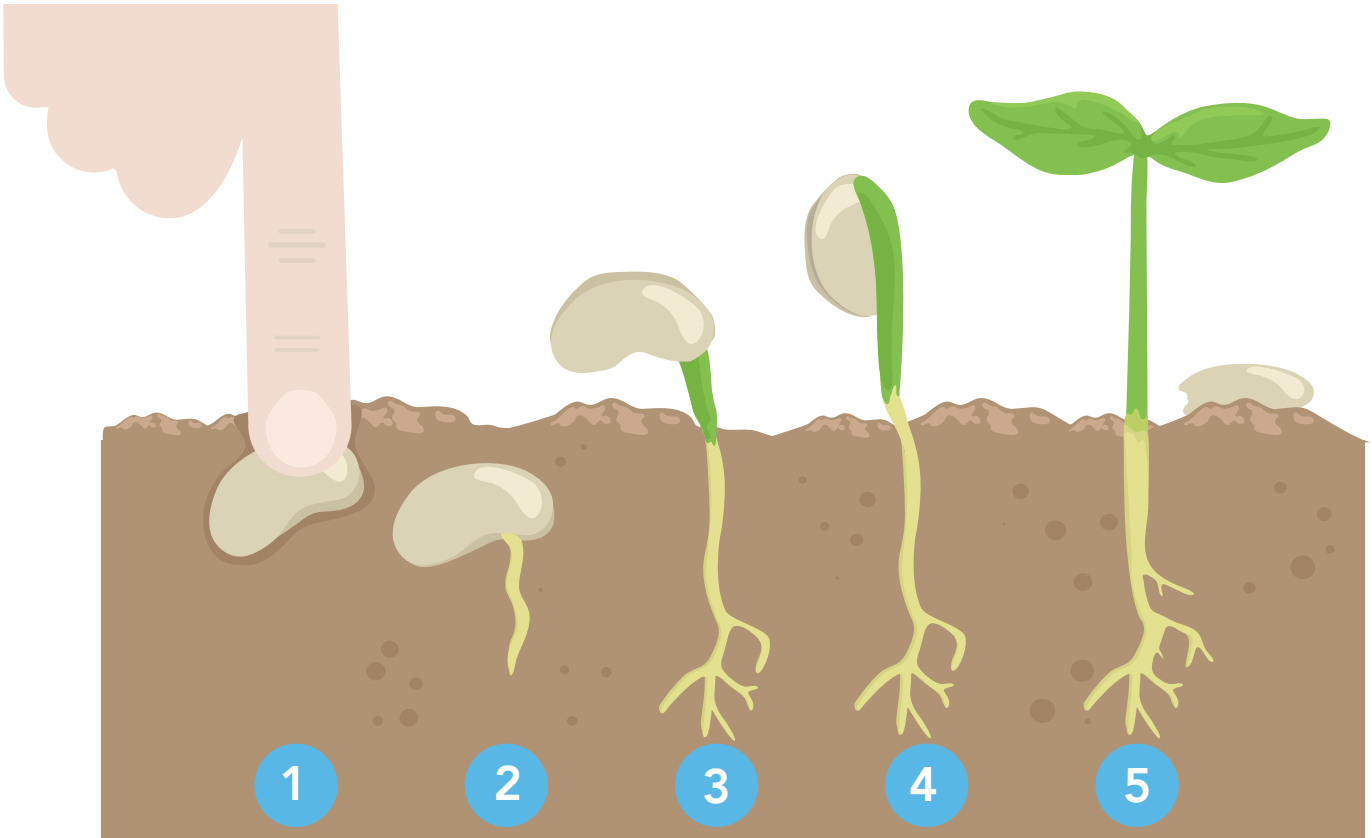
Scottish Water
Always serving Scotland

Growing seeds

Resource sheet 2

The stages of growth

1 How does a seed turn into a plant?



1. A seed is planted into the soil.

2. Roots sprout from the seed down into the soil.

3. A small shoot starts to grow and pokes up above the ground.

4. The shoot grows upwards in to a small stem.

5. Leaves begin to grow from the stem.