

# LEARNING RESOURCE

## GREENHOUSE IN A BAG

### MATERIALS

- A bean (broad bean, runner bean etc)
- A piece of dampened cotton wool
- A clear plastic zip-lock bag
- A piece of A4 paper
- Stickers, pens and pencils for decoration
- Scissors

### PREPERATION

- Soak beans overnight in water to prepare for planting

### INSTRUCTIONS

1. Take a sheet of A4 paper, cut a triangle at one end to make your greenhouse roof.
2. Measure and cut out a rectangle window as shown in the photo.
3. Make sure that your plastic bag fits behind the window and tape it into place.
4. Decorate the front of your greenhouse – remember to add the date that you plant your bean.
5. After soaking the bean for 24 hours, wrap it up in a piece of dampened cotton wooland ‘plant’ inside the ziplock bag.
6. Attach your greenhouse to a window that gets lots of sunlight, observe through the window each day and take notes about what you see happening.

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## EXTENSION

- What are the perfect conditions that your bean will need to grow?
- Does it make a difference if your greenhouse is in a window at the back of your house compared to the front? If so, why?
- Why not plant different types of beans and observe any differences in how they grow?
- Can you make a diary to show how your bean develops over time?

## SCIENCE BEHIND THE GERMINATION

The process that you are watching through your greenhouse window is called 'germination'. Every seed has a small amount of food and a special 'seed coat' to protect it from harsh conditions when it starts to germinate. Germination occurs when any seed or bean starts to grow. You will soon see thin roots growing downwards from the bean, these are searching for water to keep the bean alive and to anchor the plant into the ground. The green shoot will also start to grow upwards from the bean, this is the new baby plant, it will grow upwards in search of light and space to grow, eventually the new plant will grow leaves to help it make energy for photosynthesis and even flowers which need pollinating in order to create more seeds to continue the plant life cycle. When your bean outgrows its bag it can be planted in a larger pot in the garden!