**The Seed**

**Teacher notes**

This activity provides an opportunity for recording observations, in writing and through drawings.

Resources

For each student, you will need

* *Two large seeds, such as beans or peas*
* *Soak one seed in water for about twelve hours (but leave longer, say up to two days, if possible).*
* *Paper towel or similar, to place the seeds on.*
* *A magnifying glass or a microscope.*

*Suggestion a webcam or other method to project the image onto a whiteboard.*

**The Activity**

1. Give each student one dry and one soaked seed. Discuss the similarities and differences that they observe and ask them why they think one seed is larger than the other.
* They should notice that the larger seed feels damp. You can then explain that it was soaked in water and point out that there is a small hole close to the end of the scar (microphyll.)
1. Ask students to peel off the outer layer on the soaked seed and do this gently. Discuss what this layer could be and why the seed has it.
* Explain that this is the seed coat and that it protects the seed.
1. Ask students to open the seed carefully. They should notice that, if using a bean or a pea, it easily splits into two halves, and that the young root and young shoot are lying between the seed leaves.
* These two halves are the seed leaves or cotyledons. Discuss why they think the seed leaves are large in comparison to the young shoot and root. Explain that the seed leaves give food to the young shoot and root as they start to grow. You can also point out that at first the young root grows more quickly than the shoot. This means that it can anchor the plant and take up water from the soil.

**The seed**

Taking a bean seed apart

Draw a soaked bean seed

Split the bean open and draw what you can see

Make your drawings fill the boxes. Label your drawings using these words to help you.

Young shoot

(Plumule)

Young root

(Radicle)

Seed leaf

(Cotyledon)

Seed coat

(Testa)

1. How does the water get into the seed?
2. Why do you think seeds have a coat?
3. Why are the seed leaves so big?