

activity 8



Age 8-9



Time
Activity - 1 hour

Materials

Pupil worksheet 4 showing an electron microscope.

Pupil worksheets 5-10 showing: electron micrographs of *Cleaver* seeds, *Sunflower* seeds, *Dandelion* seeds .

Samples of *Cleaver*, *Sunflower*, *Dandelion* seeds.

Binocular microscope and/or hand-held magnifiers.

Teacher worksheet 4 (optional).

Through these activities children can learn:

- that seed coats can be observed more accurately and in more detail when they are magnified
- that seed coats have adaptations which help in the seed's dispersal (hooks, 'parachutes' etc)

Skills developed:

- observation
- prediction
- sketch drawing

How to begin:

- Using the photograph supplied, introduce an electron microscope. Explain that this is a very powerful microscope and that it makes tiny things look much bigger. Explain that scientists can use this powerful microscope to take photographs called electron micrographs. Stress to the children that the photographs they will see are *greatly enlarged*.
- Show the children the electron micrographs and ask for comments (Q1). Don't reveal the fact that they show the surface of seeds immediately - let the children guess and make predictions as to what they think the photographs show (Q2). They may like to make their own drawing of one of the photographs and write their predictions under the picture.
- When a range of different ideas have been put forward by the class, show the children the seeds and let them examine these seeds under magnification and compare them to the appropriate electron micrographs. A binocular microscope is ideal for this exercise, however, the hooks and grooves of many seeds coats can be seen quite well using a hand-held magnifier. Ask the children why they think the seeds have these special coats (Q3).
- You may wish to ask the children to make observational drawings of the coats of their seed samples with the help of the hand-held magnifiers or the binocular microscope.

Seed detectives

Key questions:

- Q1. Look at the photographs. What can you see? The children should be encouraged to describe bumps, lumps, lines, grooves, hooks, etc.
- Q2. What are these photographs of? Write suggestions on the board or into the floor book as the children observe the photographs.
- Q3. Why do you think these seeds have hooks/spikes/grooves? You may wish to use Teacher worksheet 4 from Activity 10.

