



Age 8-12



30 minutes

activity

Wild-oat demonstration:

Place several *Wild-oat* seeds in a dish, bowl or plastic tray lined with kitchen or blotting paper. Spray with water until the paper is moist. Ask children to observe and comment on what they see. The seed motion is a response to the change in moisture levels. The response is explained in the teachers' note below.

Key questions:

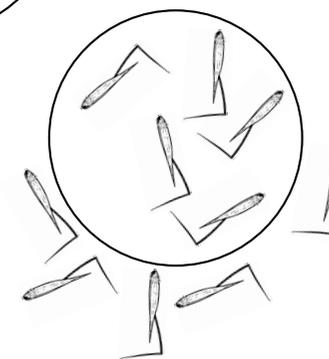
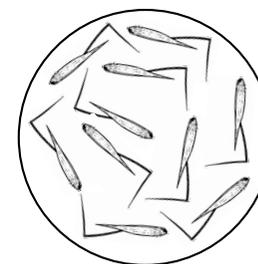
- Q1. Why are these seeds doing this?
- Q2. Why do you think it is an advantage for seeds to be able to move?
- Q3. What do you think will happen when the seeds dry out again?

Teachers' note

- The common *Wild-oat* is a serious weed, particularly of cereal crops. It is widely distributed throughout the world. One of the reasons for the successful distribution of this weed has been its specially modified seed husk. The husk is coated with fine hairs which all point in one direction. The hairs enable the seed to become trapped in clothing, animal fur and farm machinery.
- The husk also has a specifically modified structure called an awn. This looks like a very thick stiff hair, which has a bend in it. The awn is attached to the back of the husk. When the awn dries, cells in the lower part of it respond by becoming smaller, forcing it to coil into a helix. The upper part of the awn does not coil.
- When the seed becomes wet, the lower part of the awn un-coils and twists the upper part of the awn against the surface on which it is resting. This results in seed rotation, causing the seed to move across the surface. The seeds' awns are very sensitive to moisture and this movement will continue as often as the wetting and drying cycle continues.

Wandering Wild-oats

- In the field this movement is important because it can propel the seed across the soil surface and into cracks in the soil or under stones. Here the seed is protected against predators including birds and mice.



Wild-oats placed in a circle which has been drawn onto some blotting paper or kitchen paper will start to move out of the circle when they are misted with water.