Age 5-7

Sunflower jigsaw

Through this activity children can learn:
- to recognise and name the main parts of a flowering plant - root, stem, leaf and flower

Skills developed:
- fine motor skills
- accurate labelling

The activity:
- Through group discussion introduce the idea that plants can grow from seeds (you may wish to use Activity 1: Discovering seeds to illustrate this).
- This could be followed by a teacher-led discussion on the main parts of a plant. Teacher worksheet 1 can be used to reinforce your explanation.
- Using Pupil worksheet 2, ask each child to colour, cut out, re-order, stick back together and label the mixed up diagram of a Sunflower. Very young children may find it easier to cut and paste the jigsaw if it has been enlarged to A3 size. Alternatively, they could colour in a copy of Teacher worksheet 2.
- Compare Teacher worksheet 2 (a labelled Sunflower poster) to the children’s Sunflower jigsaws, asking them to re-label their drawings if necessary.

Extension activities:
- If a long term activity is appropriate, children should be asked to plant and grow their Sunflower seeds.
- Teachers’ note: Over planting by a factor of three, followed by pricking out if necessary, is advised.
- If the children are split into small groups they can compete to grow the tallest sunflower.

Materials
Teacher worksheet 1.
Pupil worksheet 2.
Teacher worksheet 2.
Coloured pencils and/or crayons.
Scissors.
Appropriate child-safe glue.
Plain A4 or A3 paper.

Time
Activity - 1 hour
Extension - 20 minutes
Activity 3: Teacher worksheet 1

Plants belong to the kingdom plantae. The plant kingdom can be divided into the following sub-groups or phyla: algae; bryophyta (mosses and liverworts); pteridophyta (ferns and horsetails) and spermatophyta (seed-bearing plants). Spermatophyta can be further divided into two classes; gymnosperms (seed-bearing plants that do not have real flowers - the seeds grow inside cones) and angiosperms (flowering plants). This pack focuses on the seeds of angiosperms.

The main parts of a flowering plant

Flower
Just as there are male and female animals, there are male and female parts to a plant. These parts each have their own special job and are located in the centre of the flower.

The male part of the flower is called the stamen – it is made up of an anther and a filament and looks a bit like a lollipop. The anther contains pollen. Pollen is the male sex cell. It must be moved to the female part of another flower of the same species.

The female part of the flower is called the carpel. It is made up of a stigma, a style and an ovary. When the 'male' pollen lands on the 'female' stigma pollination occurs. The pollen starts to grow towards the ovary where there are one or more ovules – these are the female sex cells. When the pollen reaches an ovule, fertilisation occurs. After fertilisation, the ovule develops into a seed.

Leaves

Plants make food in their leaves. To make food, plants need sunlight, water and the gas carbon dioxide which they get from the air (leaves take in carbon dioxide from the air around them through tiny holes called stomata). The leaves contain a pigment called chlorophyll which makes the leaves look green. In the presence of light, chlorophyll converts water and carbon dioxide into carbohydrates (food) and oxygen.

Stem

The stem supports the flower and leaves, holding them up to the sunlight. Water travels from the roots through the stem to all the other parts of the plant.

Roots

Roots take up water and nutrients from the soil. They also spread out in the soil and anchor the plant in one place. Large plants like oak trees would topple over without their large spreading roots.

Further information

Almost all plants are green because they contain chlorophyll which they use for photosynthesis. Through photosynthesis, plants make their food. Some plants store reserves of foods in specially adapted stems or roots.

These specially adapted food-storing organs usually form a dormant overwintering stage in life of the plants. They allow the plants to be biennials (plants that take two years to complete their life cycle) or perennials (plants that live for many years).

1) Tap roots are robust primary roots which often penetrate some depth below ground level. They are sometimes specialised for storage, e.g. carrots.

2) Tubers are the swollen part of a stem or root which are often modified to store food. Stem tuber examples include potatoes; foot tuber examples include dahlias.

3) Corms are short swollen underground stems, e.g. crocus.

4) Bulbs are fleshy, underground, highly modified shoots made up of colourless swollen scale leaves or leaf bases. The centre of the bulb contains the immature foliage leaves, the future flower and rudimentary roots. The outermost leaves do not contain food but are scaly and protect the bulb, e.g. daffodil.

Petals

The petals of a flower are usually brightly coloured and often scented. Bright colours and scent help to attract insects.

Many petals have visible lines and grooves on their surface which help guide insects to the base of the petal. There they find the plant’s nectary. This produces a sugary substance called nectar. As insects search for the nectary they brush past the anthers which, if ripe, burst and dust them with pollen which they carry to the next flower they visit.

Seeds

All flowering plants produce seeds. Seeds contain a food store protected by a hard outer coat. When seeds are dispersed (or moved away) from their parent plant they can start to germinate and grow, but only if water, air and the correct temperature are present.
Activity 3: Pupil worksheet 2

The Sunflower jigsaw

Re-arrange this picture to make a Sunflower. Colour in your picture and label it.
Activity 3: Teacher worksheet 2

Flower  Petal  Stem  Leaves  Root