

'Sunflowers' by Vincent Van Gogh

Background Information

This painting called 'Sunflowers' was painted by Van Gogh in the late 1880s in the Netherlands. He used oil paint on canvas to create it. It measures 71cm in width and 92cm in height. This is one of the sunflower paintings Van Gogh created as part of a series. He painted this one for his friend Paul Gauguin who was coming to visit him. Nowadays, they are some of his most famous works but when he was alive they were never sold.

Take a look at the following labels. Link them to the correct part of the painting using the clues given. Draw a line from each one to the relevant part of the painting.

The artist used a definite outline to make the shape of the vase.

There are ridges of paint left behind by the brush Van Gogh used.

Van Gogh signed his name on the vase.



The artist used a pale grey-blue background to offset the vivid yellow flowers in the vase.

Some flowers are starting to wither and are drooping over.

Van Gogh used a method called impasto. This is where he applied thick layers of paint which left many bumps on the painting's surface.

Questions

1. Why did the artist choose sunflowers to paint, do you think?

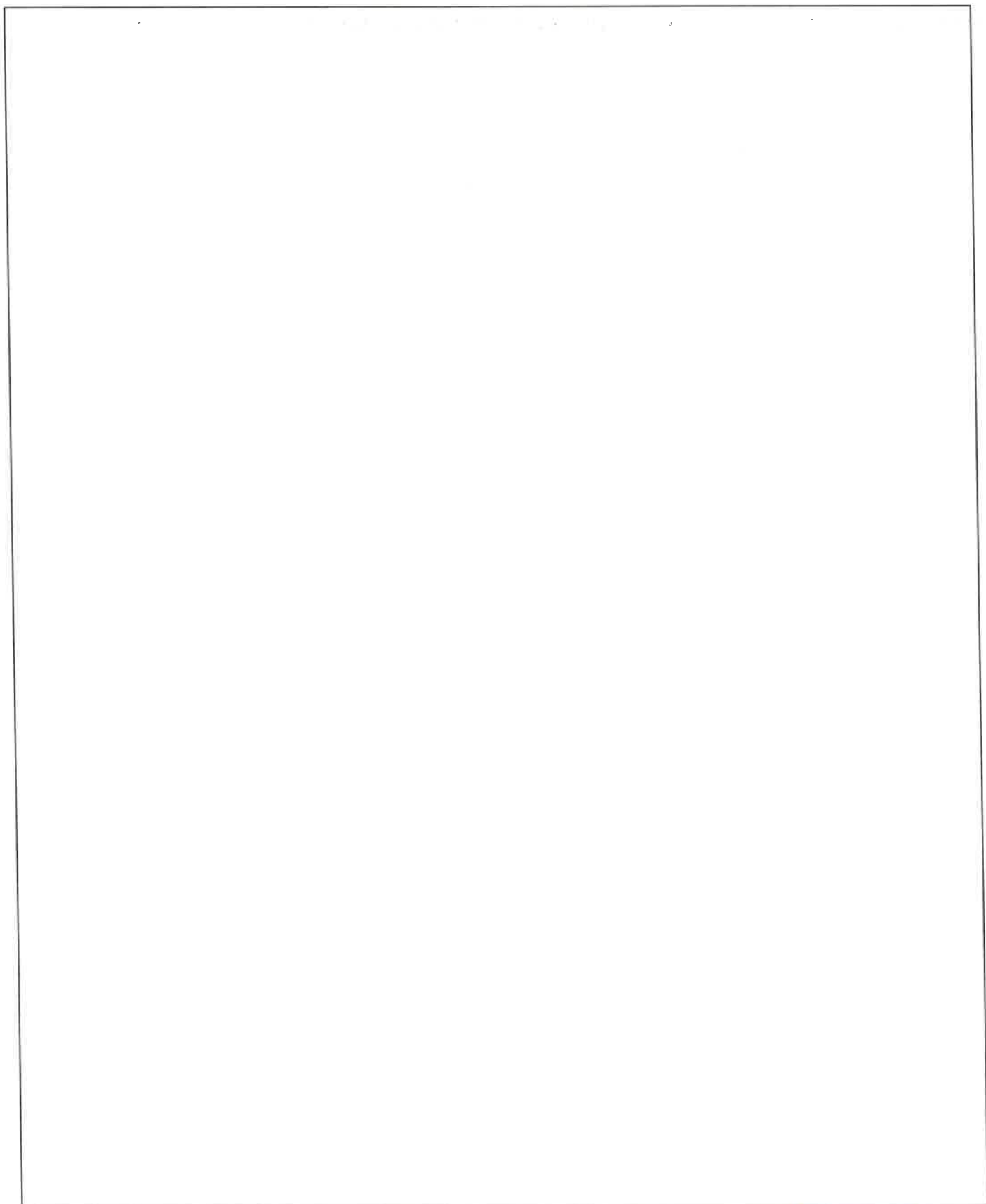
2. What mood do the bright yellow sunflowers give the painting? Give reasons for your answer.

3. When you think of sunflowers what images and adjectives pop into your head? List ten of them below.



Sketch

Now draw your own sketch of the painting using your memory only.



Extra Challenge

Use the Internet or your dictionary to find the main meaning for the following art term:

impasto:

Use the Internet to research three facts about the artist - Vincent Van Gogh.

1.

2.

3.



Pollination



Spring spotters sheet



Name

's signs of spring tally

Have a walk around. See how many signs of spring you can find. Make a tally as you go along.

Bird nests



Number found

Bulb shoots



Number found

Buds



Catkins



Green tree leaves



Birds



Pollination



Butterflies

Number found



Hoverflies

Number found



Caterpillars



Bees



Blossom



Leaf mines



Pollination



Attracting pollinators

Look at the flowers that you have found, they are all designed to spread pollen to other flowers so that those other flowers can make seeds. Can you see the pollen on the flowers you have found? The pollen from many trees (conifers, hazels, willows, birches) is spread by the wind, and this makes the flowers look quite different, they are often smaller and don't have brightly coloured petals. Pollen from other flowers is spread by insects visiting the flowers to collect a sweet liquid called nectar to drink, this kind of flower has pollen that is quite sticky and is carried to other flowers on the insect. Can you see any insects collecting nectar? Flowers use different ways of attracting insects to them; colour, smell and pattern. Bees tend to like flowers that are blue or purple and butterflies like yellow, orange and red flowers.

Can you find flowers that:



are brightly coloured to attract insects



are patterned to show insects where to land



are scented to attract insects



puff out pollen into the wind

Parts of a flower

→ Teacher Guidance

Introducing the parts of a flower

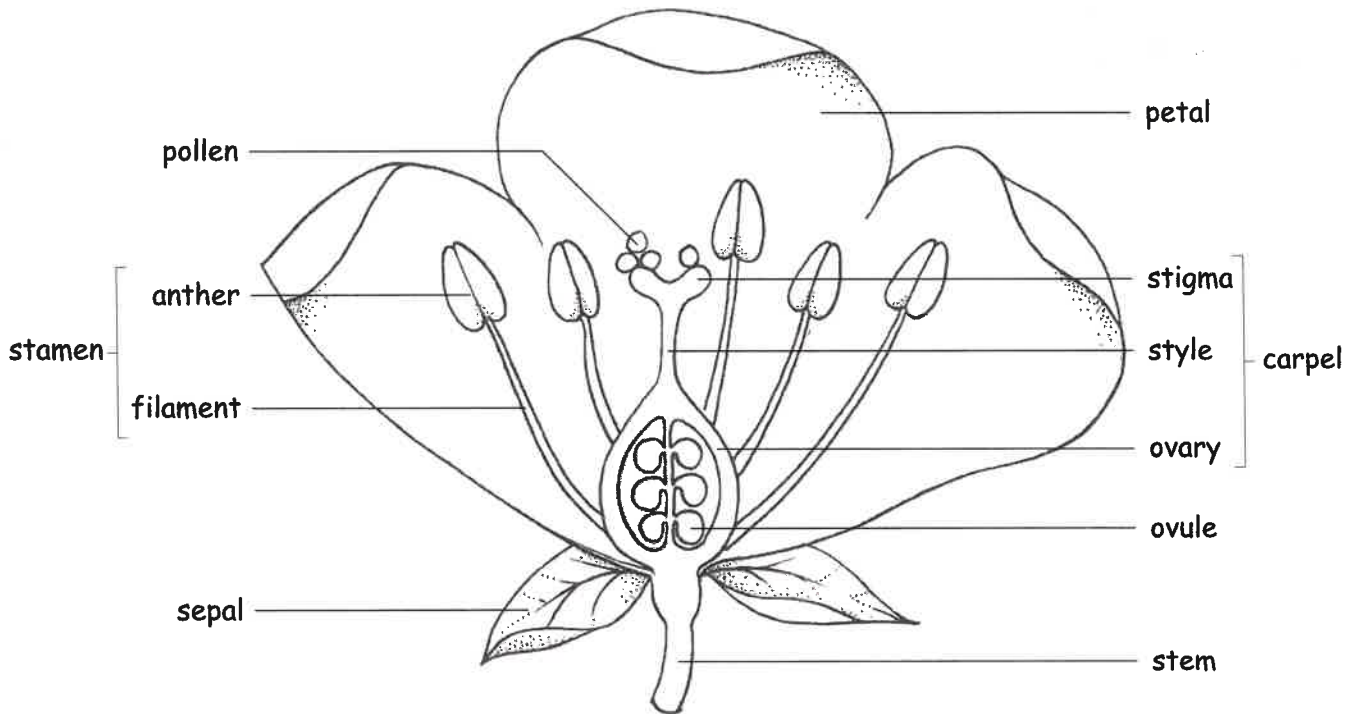


Figure 2. A half flower, showing the basic parts: sepal, petal, stamen (anther, filament), carpel (stigma, style and ovary with ovules), and stem

This 'ideal' flower shows the basic parts of a flower. Children need to recognise these parts in different flowers and understand their role or function in flowering plant reproduction.

For the first activity, it is often a good idea to give children the opportunity to dissect a flower. Different methods are suggested in the 'Teacher Guidance' for this activity. When doing the dissection, the children look closely at the different parts and become aware of their arrangement in the flower. This can be followed by using one or both of the Pupil Sheets (*Finding out more about flower parts*). Depending on which are selected, these sheets give opportunities for development of literacy and numeracy skills, or they can be used as revision or assessment activities.

Flowers don't all look the same, so for whatever flower you use you will need to work out which are the sepals, petals and so on. You will find guidance as to which flowers are suitable for study on page 31, together with two examples of dissected flowers. Further examples are provided on the SAPS website.

Parts of a flower

→ Teacher Guidance

Dissecting a flower

The activity

You need a suitable flower for each child. The choice of flower depends on the time of year and what is available. (For suggestions and diagrams of some dissected flowers, see *Background information for teachers.*)

To make it easier for the children to carry out the dissection, the child can push the flower stalk into a lump of Blu-tack or into a bung with cross-cuts in it.

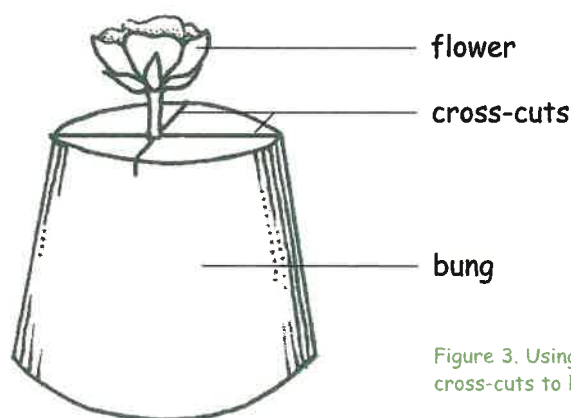


Figure 3. Using a bung with cross-cuts to hold a flower.

The parts of the flower that are removed can be displayed in a number of different ways. Three suggestions are given below.

Method 1

Cut a piece of Sellotape, approximately 25 cm in length. Make it into a loop by sticking the ends together but with the sticky surface facing outwards. Stick this loop on a piece of card, about 12 cm x 8 cm.

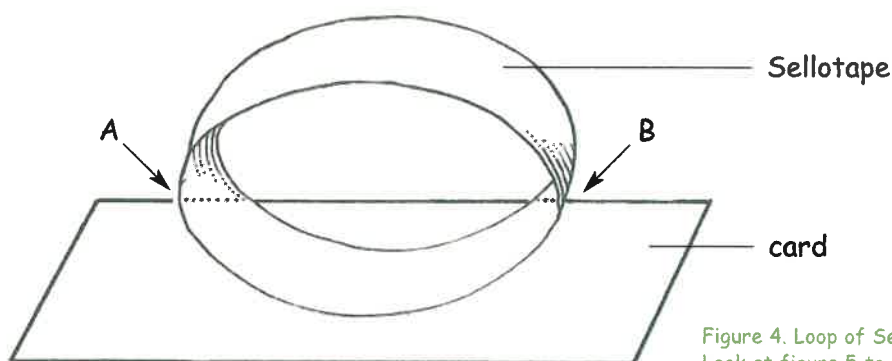


Figure 4. Loop of Sellotape on a piece of card. Look at figure 5 to see what happens to positions A and B when the loop is cut and then stuck down on paper.

Let the children carefully dissect the flower as follows.

- Start at the base of the flower and first remove the outer whorl (ring) of parts. These are the sepals. Use either fingers or tweezers (forceps) to do this.
- Then, starting at the **right hand** end, place these sepals on the sticky loop. Try to arrange them so they are at approximately half cm intervals along the loop, moving from the right hand end, along to the left. To make sure the parts are arranged in the correct sequence, you must start at the right hand end.
- Next remove the second whorl of parts. These are the petals.
- Place the petals onto the loop, to the left of the sepals.
- Repeat the process with the stamens and finally the carpels. Continue sticking them on the loop, in sequence, to the left of the sepals and petals.
- Cut the Sellotape at the positions marked A and B.
- Turn the tape over and stick it down on a worksheet or in a workbook.

You now have a row of flower parts in the order they occur in the flower, starting from the outside of the flower.

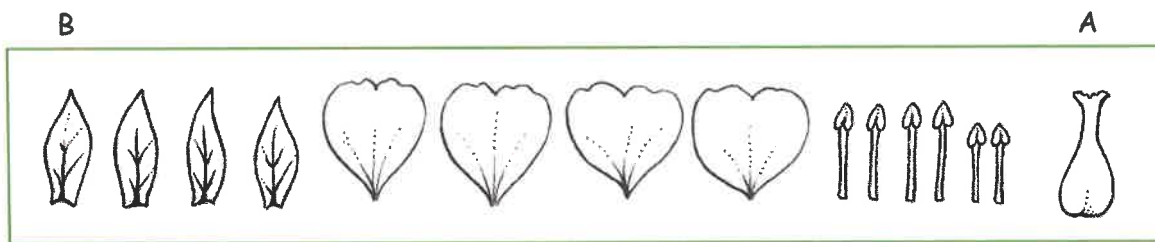


Figure 5. Drawing of a dissected flower, prepared using Method 1, showing the loop after it has been cut, turned over and stuck down. You will see, starting from the left hand side of the diagram (letter B), that the parts are in the order in which they were dissected. This flower has 4 sepals, 4 petals, 6 stamens and 1 stigma, style and an ovary.

Method 2

Cut a piece of double-sided Sellotape, approximately 15 cm in length. Stick it down on a worksheet or in a workbook.

Dissect the flower as described in Method 1, removing each whorl in turn. Stick the parts in order onto the strip of Sellotape but in this method, start the sequence from the **left**. When complete, cover the flower parts with a piece of wider Sellotape or sticky-backed plastic.

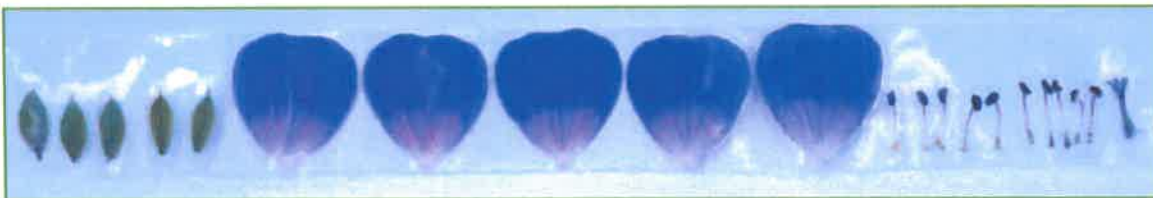


Figure 6. Photograph of dissected cultivated blue geranium flower (Crane's-bill), prepared using Method 2. The flower parts are held on double-sided Sellotape and covered with sticky-backed plastic. This flower has 5 sepals, 5 petals, 10 stamens, a 5-branched stigma, a style and an ovary.

Method 3

Prepare a sticky square (15 cm x 15 cm) using several strips of double-sided Sellotape and put this on a worksheet or in a workbook.

Dissect the flower as described in Method 1, removing each whorl in turn. Then arrange the parts of each whorl in concentric circles, as they are arranged in the flower, with sepals forming an outer ring and so on with the carpel(s) finally in the centre. When complete, cover the flower parts with sticky-backed plastic.

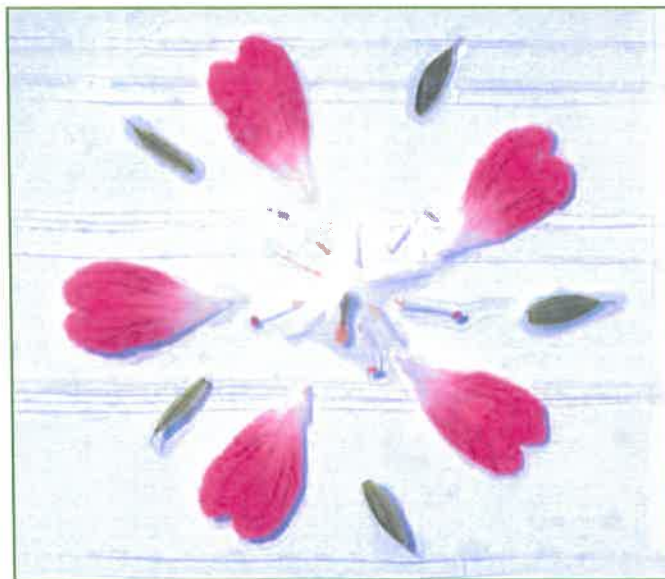


Figure 7. Photograph of pink geranium with parts displayed as described in Method 3. The flower parts have been arranged on a sticky square of strips of Sellotape and covered with sticky-backed plastic. This flower has 5 sepals, 5 petals, 10 stamens, a 5-branched stigma, a style and an ovary.

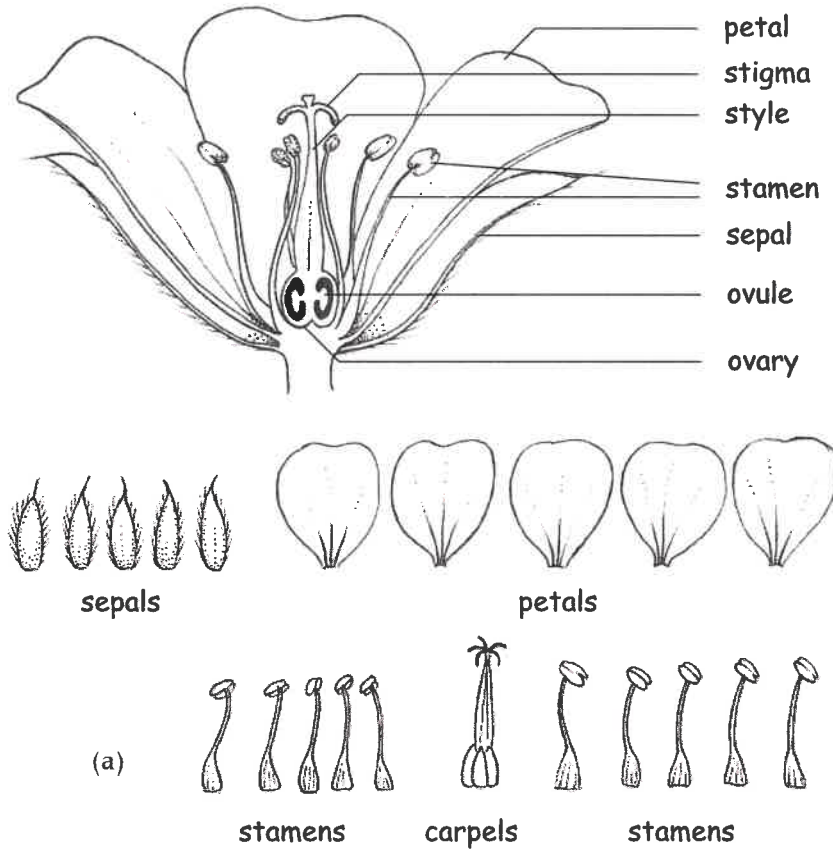
Reminder – see *Background information for teachers* for examples of dissected flowers

Further activities

1. Finding out about the numbers of flower parts (Pupil Sheet and Teacher Guidance).
2. Graphic organiser: whole-parts relationship (Pupil Sheet and Teacher Guidance).

Examples of dissected flowers

1. The cultivated perennial geranium (Crane's-bill)



Flower structure

Sepals (5) Green

Petals (5) Brightly coloured, the actual colour depending on which species or cultivar you are looking at

Stamens (10) These are arranged in 2 whorls of 5. One whorl develops before the other so you may find only the filaments (stalks) left by the time the second whorl is fully developed

Carpels (5) The ovary is formed of 5 carpels fused together, which extend upwards to form a sterile beak, merging into the style. The 5 stigmas are not joined. When ripe, the ovary and the sterile beak split suddenly into 5 parts throwing out the seeds.

General information

The cultivated perennial geranium belongs to the Crane's-bill family (*Geraniaceae*), which also includes pelargoniums. There are a number of cultivated Crane's-bills that are suitable for study, for example, large blue flowered forms of *Geranium pratense* or the pink Bloody Crane's-bill *Geranium sanguineum*. Pelargoniums can also be used. Be careful in choosing your plant as many of the cultivated forms are hybrids and may be sterile, so this makes it more difficult to see the structure of the ovary. Flowers should not be collected from the wild where they are scarce. Plants in the Crane's-bill family (Family Geraniaceae) are mostly found in temperate and sub-tropical regions. The family is important for its cultivated ornamental plants. Many plants in this family have scented leaves and geranium oil is used in the perfume industry.

Figure 17

(a) Half-flower of the blue cultivated geranium with its parts after dissection.

(b) Blue cultivated perennial geranium in flower.

(b)



2. The star gazer lily

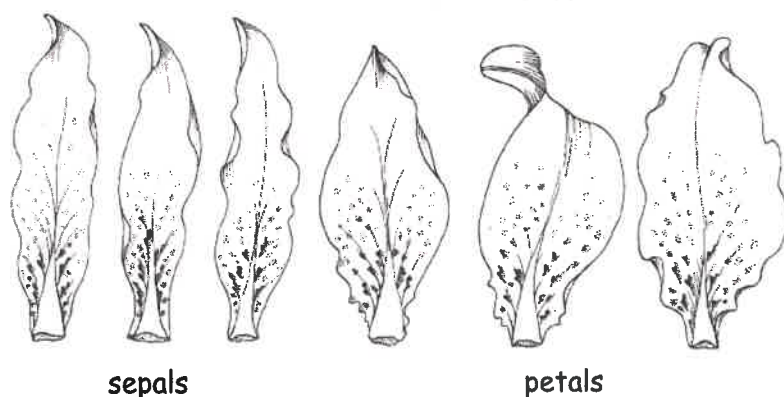
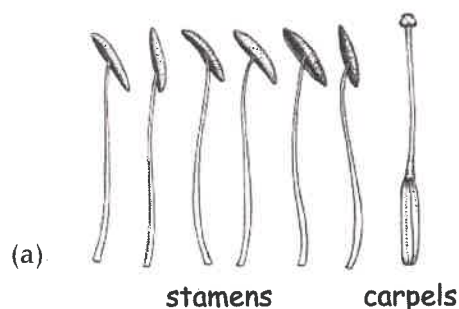


Figure 18

(a) Half-flower of the star gazer lily with its parts after dissection.

(b) Star gazer lily in flower.



Flower structure

Sepals (3) Pink with darker pink spots

Petals (3) Pink with darker pink spots. A little wider than the sepals but the sepals and petals are both petal-like and sometimes referred to as tepals

Stamens (6) The stalks are attached to the middle of the back of the pollen bags (anthers). These produce masses of orange pollen

Carpels (3) The ovary is made of 3 carpels fused together. This is best seen by cutting a cross section of the ovary. The stigma is also 3-lobed.

General information

The star gazer lily, as its name suggests, belongs to the Lily family (the Liliaceae). This is a large family containing many beautiful garden plants, which have probably been cultivated since the middle of the 16th century. The star gazer is a cultivated oriental hybrid. Onions and chives also belong to this family.

The pollen can stain. If it gets onto skin or clothing dust it off whilst it is dry. Wiping with a damp cloth will lead to staining. Note that the pollen is very poisonous to cats.

(b)



➔ Pupil Sheet

Finding out about the number of flower parts

Name of your flower _____

The flowers of most plants have sepals, petals, stamens and carpels.

The number of sepals, petals, stamens and carpels is not the same in all plants. Count the number in your flower.

sepals _____

petals _____

stamens _____

carpels _____

The carpels are sometimes joined together (look for the join marks) or they can be separate. What happens in your flower?

In my flower the carpels are _____

Can you describe any pattern that you see in these numbers?

(Clue - Are the numbers of the different sets of flower parts all the same?)

➔ Pupil Sheet

A graphic organiser

Can you name these flower parts?

What would happen if one of the parts was missing?

petal

stigma

stamen
Pollen would not be made and there would be no pollination or seed formation

ovary

sepal

Parts of a flower

Teacher Guidance

Create a flower

Activity

Create a flower using a variety of materials from the box. The box contains materials that could represent different parts of the flower. Depending on your selection, this can be used as a cross-curricular activity. You could, for example, use this as an opportunity to talk about sustainability and only put recycled items in the box.

Here are some ideas of materials you could use and suggestions as to how many of each flower part you will need for each flower that is being made.

Part of plant	Possible materials
Sepals (four)	• coloured paper or card or pelmet vilene, cut into sepal shapes
Petals (four)	• coloured paper or card or pelmet vilene, cut into petal shapes
Stamen filaments (six)	• pipe cleaners • art straws • wire
Stamen anthers (six)	• packing nodules (foamed starch) • cotton wool • small pieces of sponge
Pollen (lots)	• rice stained yellow (teaspoonful!)
Ovary (one)	• small plastic fizzy drink / water bottle (the cap or top represents the stigma)

Let the children select from the box and construct a flower. They can stick it down on card. You can discuss with the children what each item represents as they construct the flower.

As an alternative, you can encourage children to make a 3D version of the flower. For an example of a 3D flower, see 'A model *Brassica* flower' on the SAPS website. This also gives templates that you can use for the sepals and petals. A completed 'SAPS *Brassica* flower' is illustrated in Part 2.

Further activities

1. Create a 3D SAPS model flower (see SAPS website)

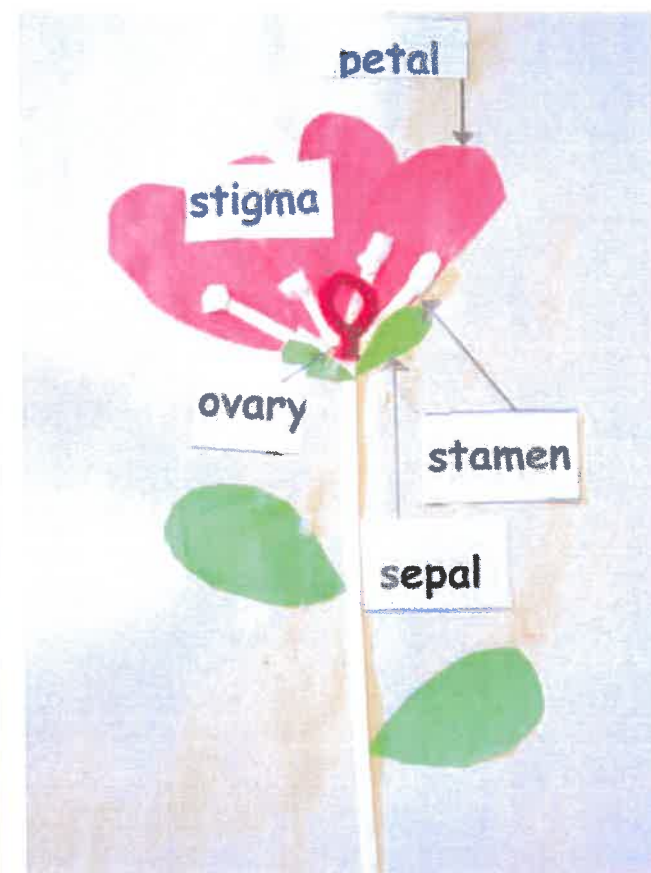
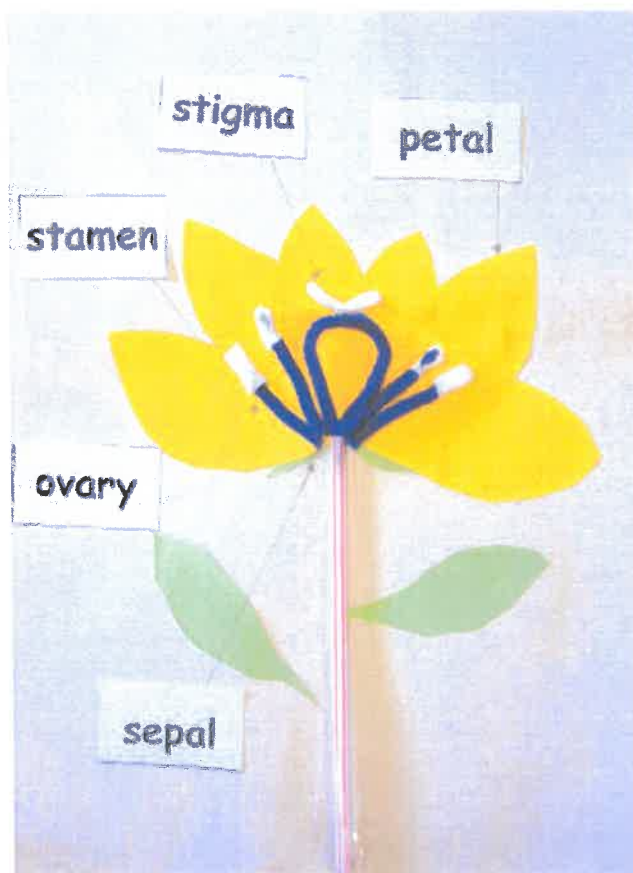
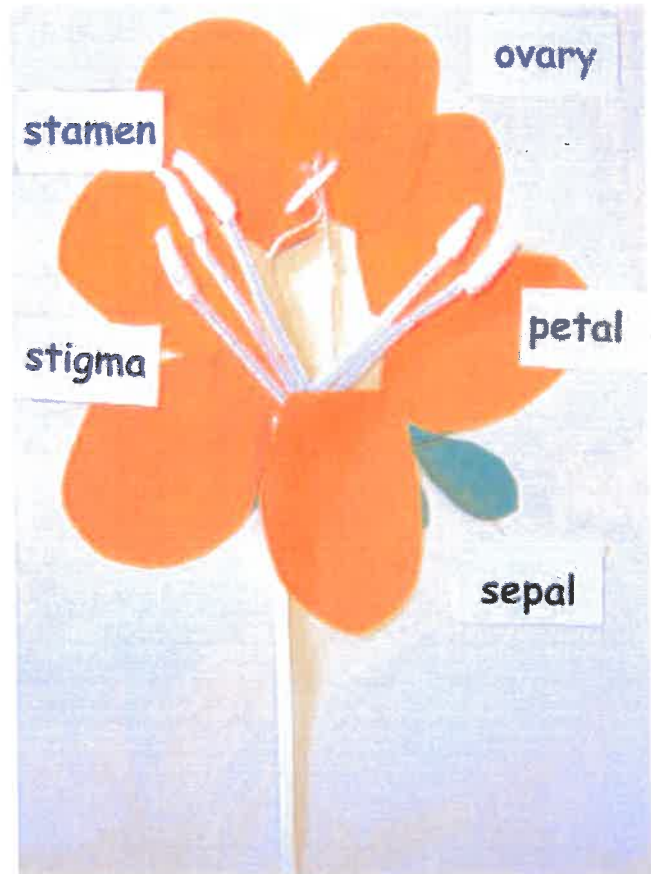


Figure 8. Some flowers created by children (in Year 4 at the Cavendish School). These collages were made using a selection of different art materials and the labels were added by the children.

Parts of a flower

→ Teacher Guidance

Colouring a flowering plant game

Resources

Each child or group will need the following:

- Two dice, each with 1 to 6 dots
- Pupil Sheet (page 19) of the flowering plant (one for each child)
- A list of numbers and corresponding parts of the flowering plant to be coloured (as on Pupil Sheet)
- Colouring pencils or felt tips



Each part of the plant is numbered:

- 2 = sepals
- 3 = flower stem
- 4 = roots
- 5 = carpel (stigma, style and ovary)
- 6 = stamens
- 7 = leaf
- 8 = leaf bud
- 9 = pollen
- 10 = ovules
- 11 = petals
- 12 = any part of the flower

Activity: Playing the game

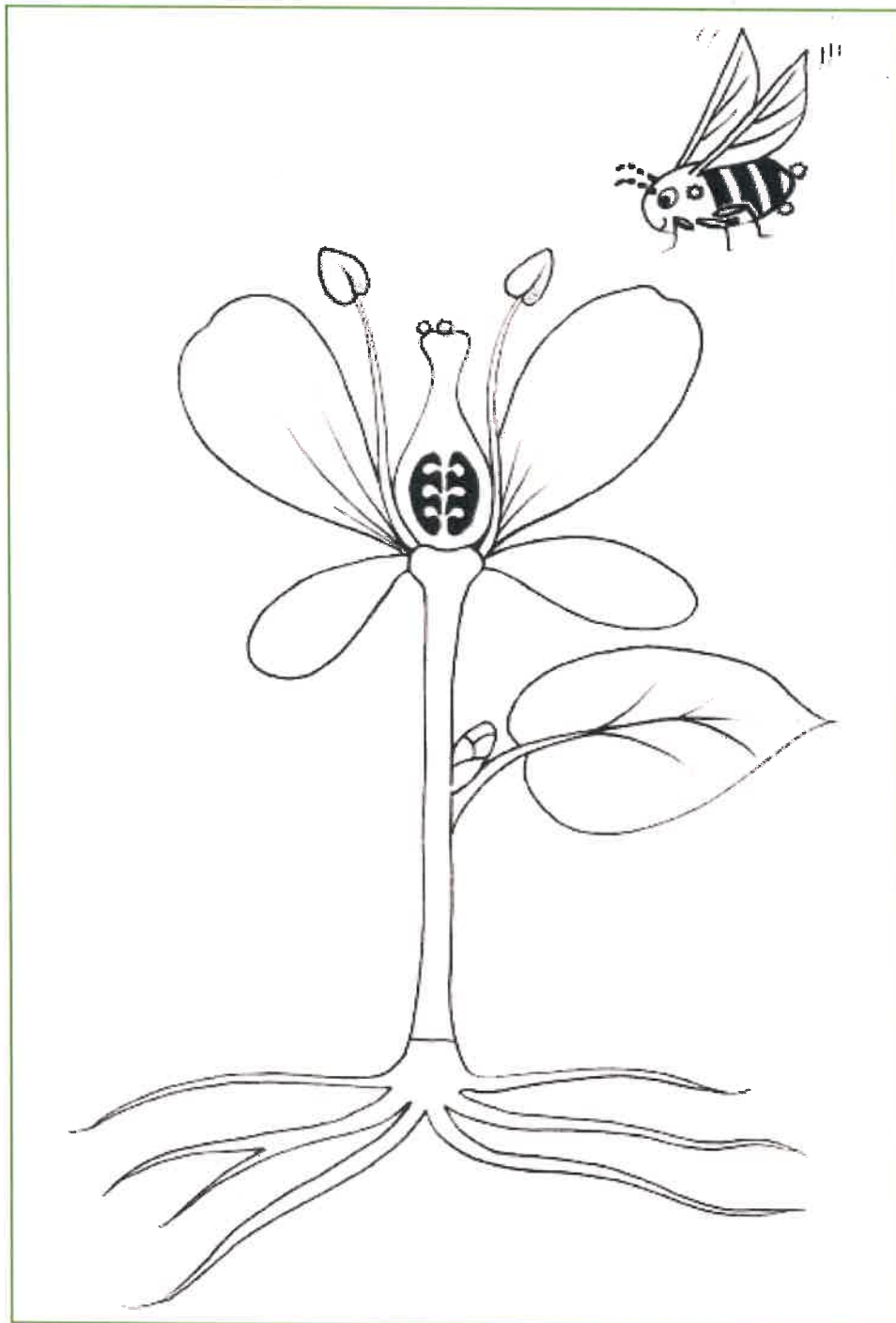
The game can be played in groups of two to four children, with each child taking it in turns to throw the dice.

The first child throws the dice and colours in the appropriate part of the plant that corresponds to the number on the dice. The winner is the first child or group to complete the colouring of their flower correctly.

➔ Pupil Sheet

Colouring a flowering plant game

Throw the dice. Colour the part of the flowering plant to match the number you have thrown. Look at the box below to see the number you need for each part.



2 = sepals	3 = flower stem	4 = roots	5 = carpel (stigma, style and ovary)	6 = stamens
7 = leaf	8 = leaf bud	9 = pollen	10 = ovules	11 = petals
				12 = any part