

Botanical Gardens




Study Centre

Basic Botany - Flower Structure



The Birmingham
Botanical Gardens
& Glasshouses

 **Birmingham City Council**
Learning and Culture

Brief Descriptions of Activities

Flower Structure

- a Study Centre-led activity
- Using large-scale models and bee (glove puppet) to take pupils through the basic flower parts and their functions

Investigating Floral Structure

A wide range of flowers are always on display in the glasshouses.

Their structure can be recorded in a variety of ways:

- Directed observation through use of questionnaires
- Drawing half a flower and labelling its structure
- Creating a plan of the flower as if viewed from above
- Creating a simple floral formula (this worksheet is using a simplified form of the recording system used by botanists)

See worksheets 1-4 at back of booklet.

Pollination Mechanisms

- An extension of this work is to look at a variety of ways in which plants are designed in order to attract different pollinators

See 'A Guide To Pollinators' at back of booklet.

- Busy Bees. This is a game where pupils act out pollination

See worksheet 5 at back of booklet

Guide To Pollinators

“Bee Flowers”

Typically yellow, blue or purple. They produce pollen and lots of nectar, are often marked with lines and blotches and are sweetly scented at certain times of the day.

“Butterfly Flowers”

Vivid colours, often purple, red or white. Usually open during the day with a long thin corolla tube, lots of nectar and a strong scent.

“Moth Flowers”

Often white, pink or pale yellow, open at night and have a heavy scent.

“Wasp Flowers”

Often pinkish or dirty red, with horizontal or drooping cups into which the short tongued wasp can push its head.

“Bat Flowers”

Pale or mauve with a strong musty scent. Bell shaped flowers are strongly built and open at night.

“Bird Flowers”

Red, orange or yellow with peculiar colour combinations. Usually long tubed with lots of nectar and little scent.

“Fly Flowers”

Often colourless or mottled with reds and purples. Relies on smell of dead meat.

The Pollination Game

- a Study Centre-led activity

- Large-scale flower parts are available for children to reconstruct flowers. A role-play can then ensue with one pupil taking the part of a bee, collecting and transferring pollen from the 'flowers'.

Flower To Fruit

- Opportunities are always available for observation of the changes which occur after a flower has been pollinated and becomes a fruit.

Links with Science National Curriculum

KS2	Sc 1	2e 2f 2h
	Sc 2	1b 1c 3d
KS3	Sc 1	2f 2g 2i

Looking at Flowers

Choose from the flowers provided. Examine one carefully using a hand lens if necessary and try to answer the following questions:

Do the flower petals show symmetry?

Are the petals separate or formed into a tube?

How many petals are there?

Are sepals present? If so, how many are there and what colour are they?

Are the stamens separate or attached to something else?

Are the filaments long or short?

How many lobes has the anther?

Can you see pollen grains?

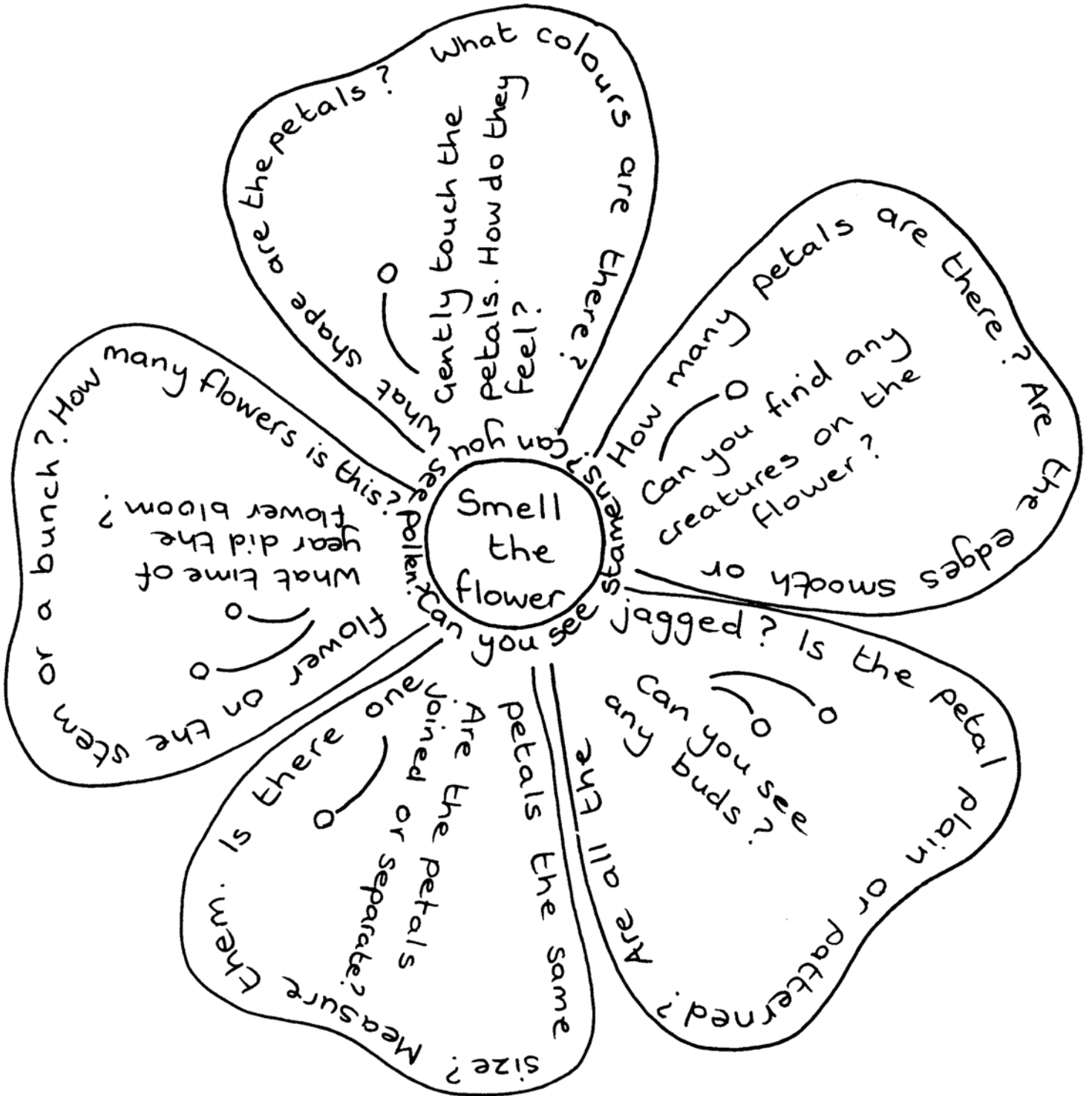
Are there one or more ovaries?

What shape is the stigma?

How long is the style?

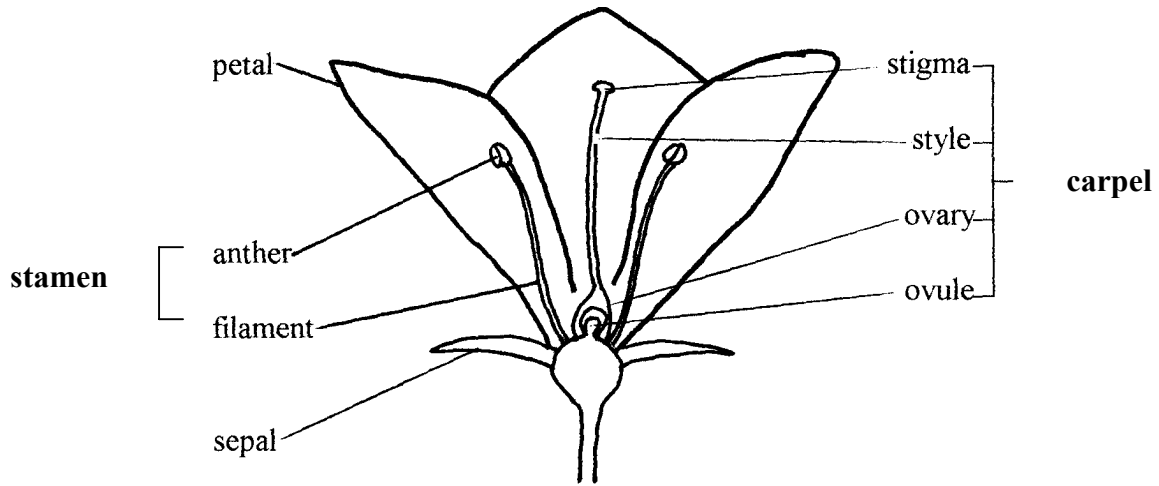


Looking at Flowers





Recording Floral Structure

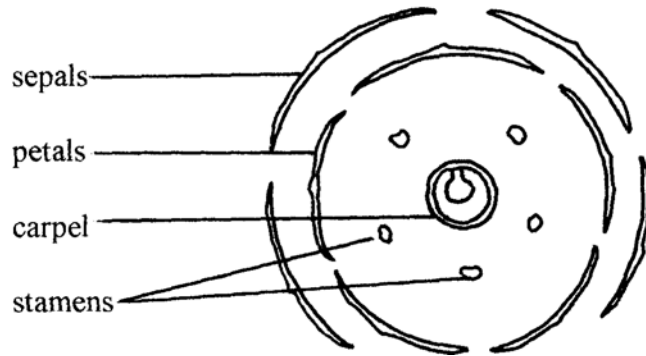


Half Flower

Choose 4 different flowers and imagine you have cut your flower in line with the main stem to give a vertical section, and draw.



Recording Floral Structure



Floral Diagram

This shows a plan of the flower when looked at from above. Choose 4 different flowers then draw and label them from this angle.

Busy Bees

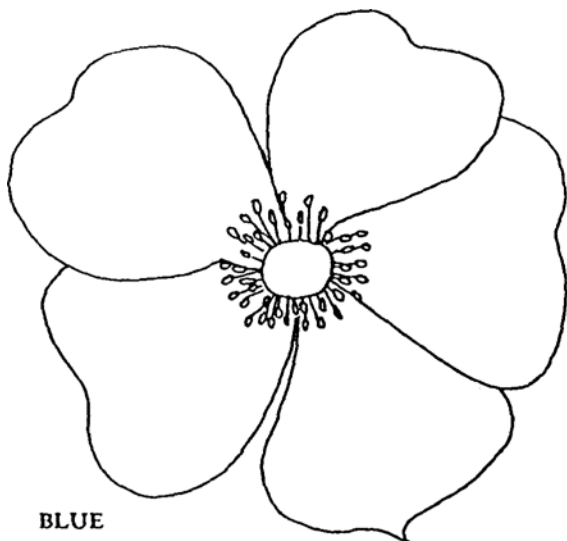


Do bees prefer different colour flowers?

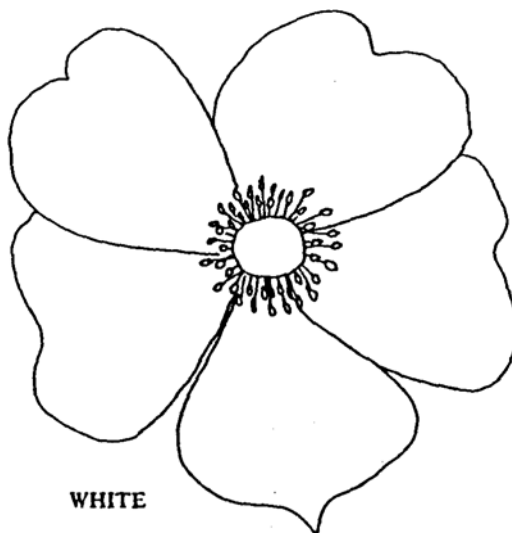
1. Choose a comfortable place where you can observe bees visiting different colour flowers. Make sure that you are quiet and do not disturb the bees working.
2. Every time you see a bee put a tick in the correct colour flower on the recording sheet.
3. Everyone must carry out this survey for the same length of time.
4. Count up the bees on each flower and use the totals to create a graph.

? Is there a link between the colour of the flower and the number of times it was visited by bees

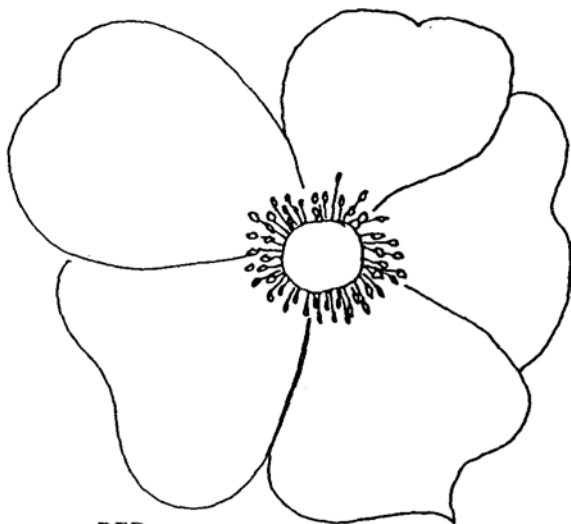
? Can you think of any other reasons why bees visit flowers



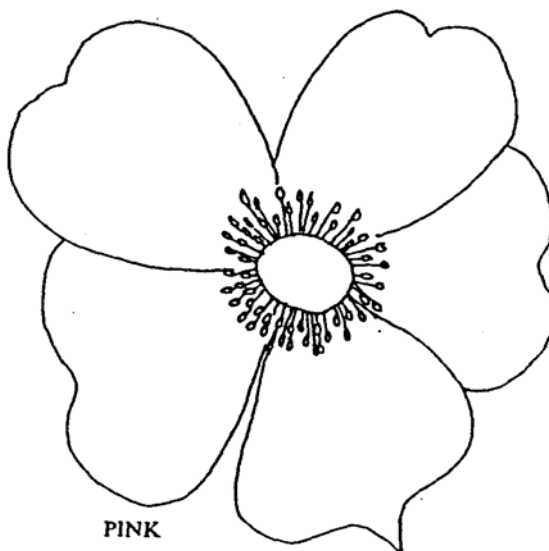
BLUE



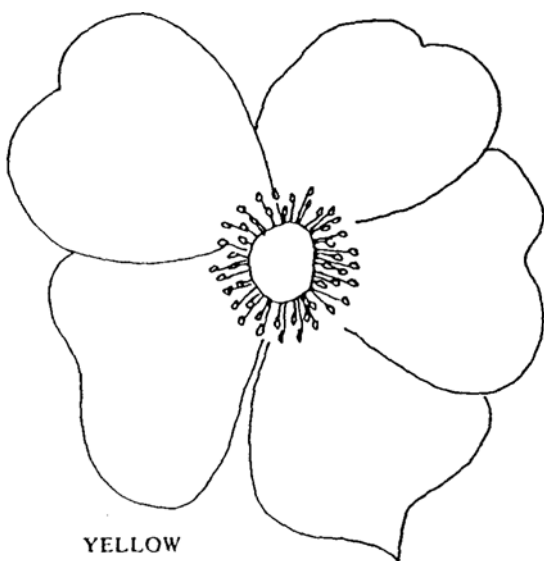
WHITE



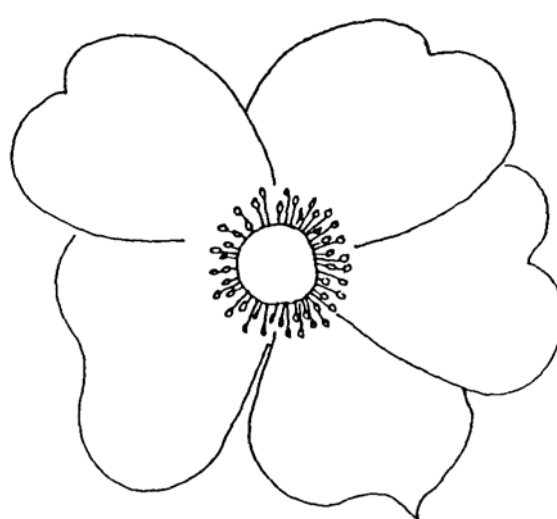
RED



PINK



YELLOW



ORANGE