

Botany Pack



THE BIRMINGHAM
BOTANICAL
GARDENS
TURN OVER A NEW LEAF

Brief Descriptions of Activities

Investigating Floral Structure

A wide range of flowers are always on display in the glasshouses. Their structure can be investigated and recorded in a variety of ways:

- Observation through use of questions (Worksheet 1)
- Drawing half a flower and labelling its structure (Worksheet 2)
- Creating a plan of the flower as if viewed from above (Worksheet 3)
- Creating a simple floral formula (Worksheet 4 uses a simplified form of the recording system used by botanists)

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 the back of this booklet.
- Busy Bees: an investigation into which colour flowers bees prefer (Worksheets 5 and 5a)

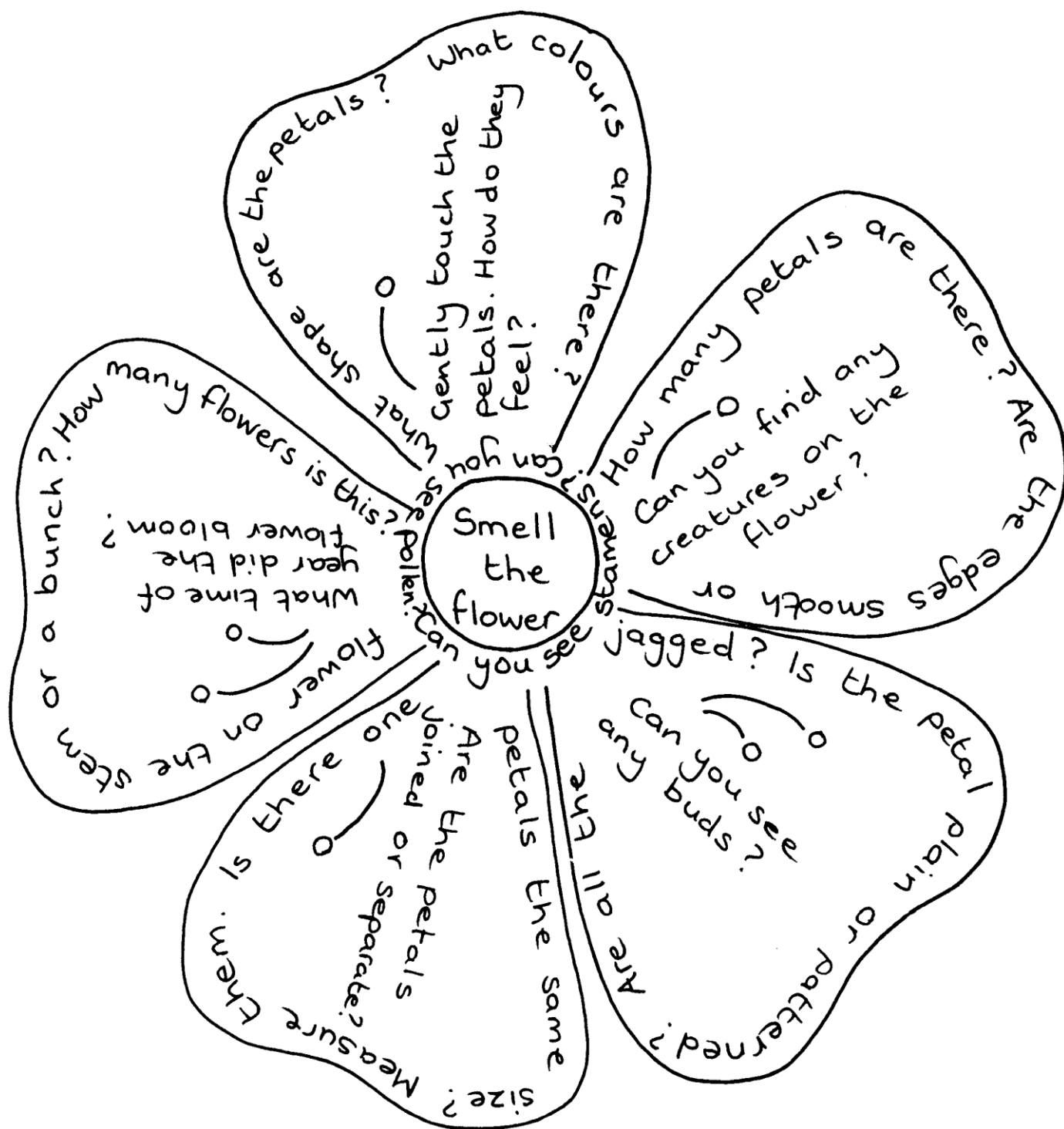
Flower to Fruit

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

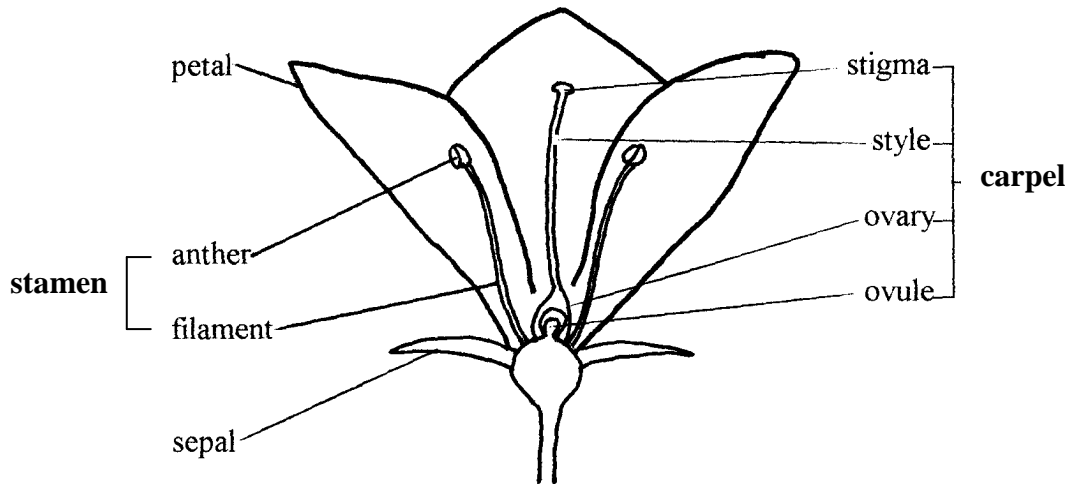
(Worksheet 6)

Looking at Flowers

Choose a flower from one of the glasshouses. Examine it carefully (using a hand lens if you have one) and try to answer the following questions:

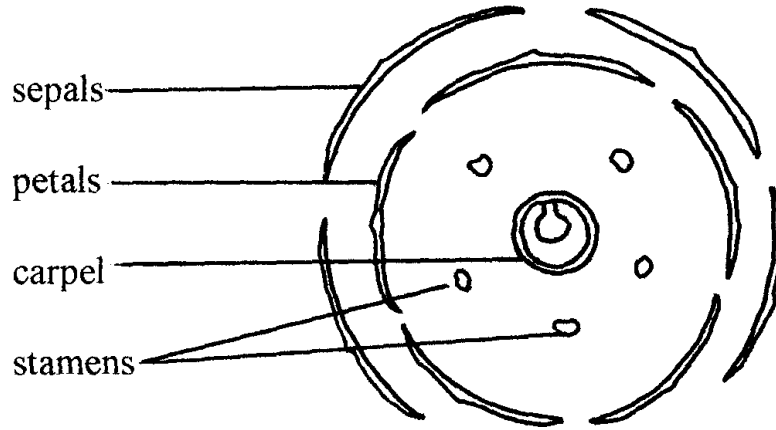


Recording Floral Structure: Half Flower



Choose 4 different flowers. Imagine you have cut each flower in line with the main stem to give a vertical section, and draw in the boxes:

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.

Name: _____

Floral Formula

By counting the number of sepals (S), petals (P), anthers (on the end of the stamens) (A) and carpels (C), you can make up a floral formula to compare flowers. For example: **S3 P6 A12 C1**.

<p style="text-align: center;">Drawing</p> <p>Floral formula:</p>	<p style="text-align: center;">Drawing</p> <p>Floral formula:</p>
<p style="text-align: center;">Drawing</p> <p>Floral formula:</p>	<p style="text-align: center;">Drawing</p> <p>Floral formula:</p>

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 (worksheet 5a).
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 back at school.

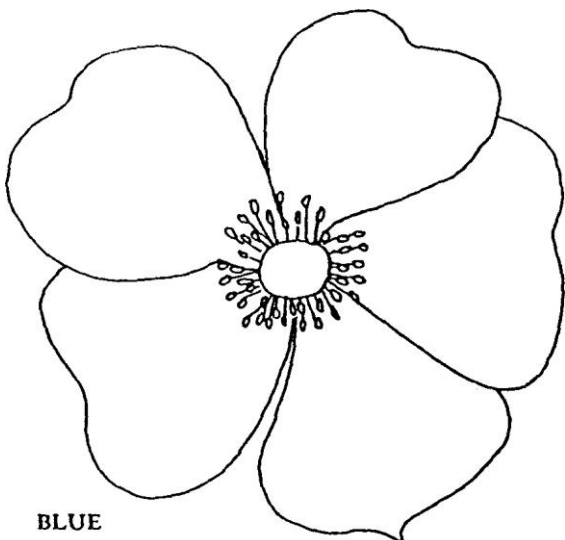


Is there a link between the colour of the flower and the number of times it was visited?

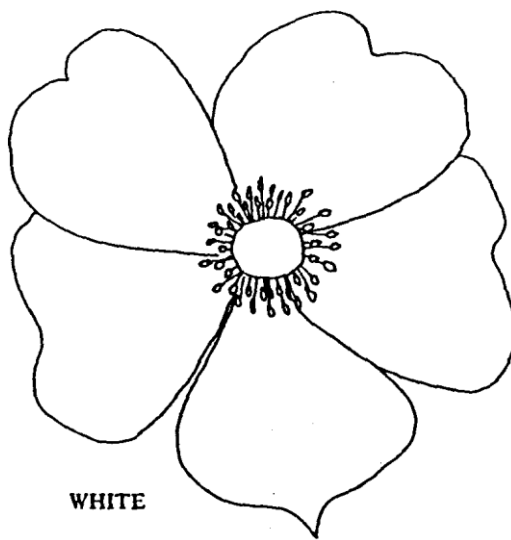
Can you think of two reasons why bees visit flowers? (Hint: think about what they collect)



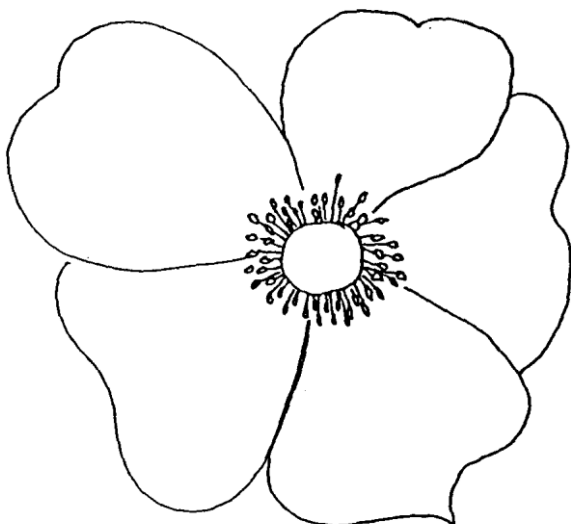
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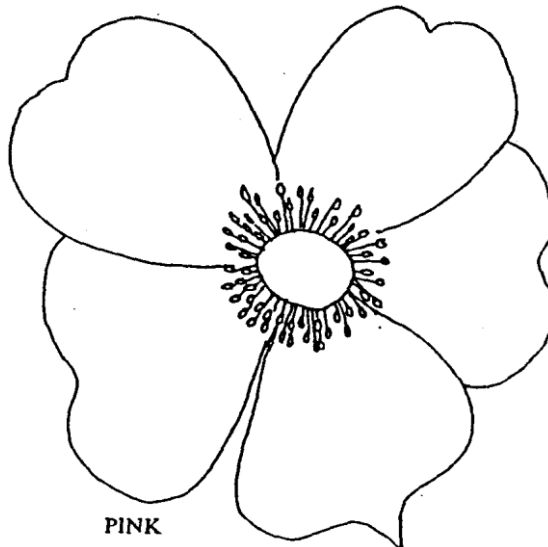
BLUE



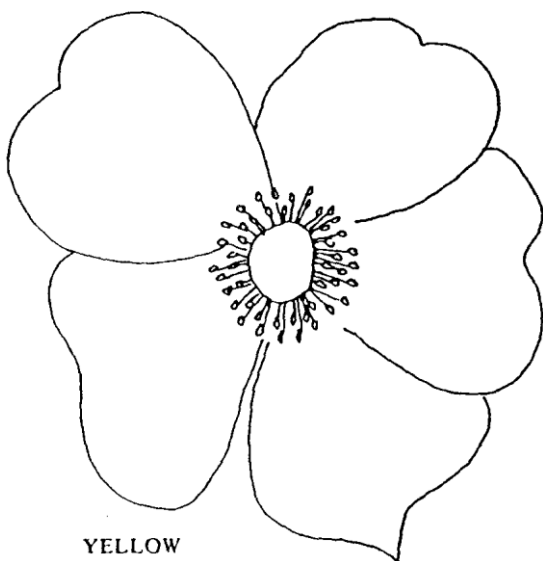
WHITE



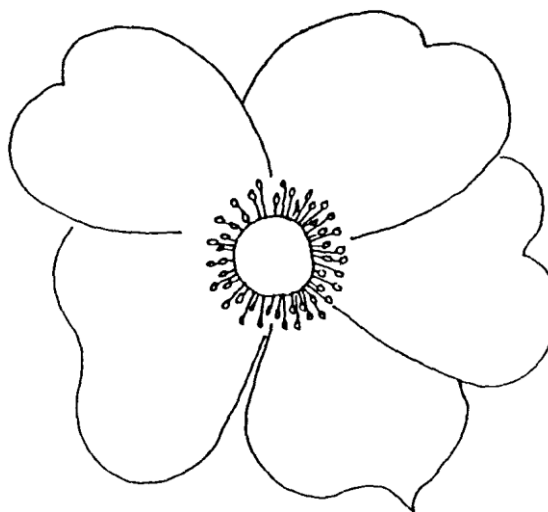
RED



PINK



YELLOW



ORANGE

Flower to Fruit

Find 4 different fruits growing in the glasshouses or outside (the Mediterranean House and the Growing Schools Garden are good places to look). Examine each fruit carefully (using a hand lens if you have one) and draw detailed, labelled diagrams in the boxes.

- Remember that many fruits are enlarged flower ovaries that become thick and juicy to protect the seeds inside. Can you see where the sepals were when it was a flower?
- When they ripen, fruits are brightly coloured to encourage animals to eat them, which means that the seeds can then be dispersed. Can you use some interesting adjectives to describe the colours?

Name: _____

A 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.