

Science – Year 3/4A Spring 2

Plants

A Feast of Flowers, Fruits and Seeds

Session 1

Resource Pack

Clues to the Secret in the Box

Begin by giving clue 1. Then take 3 guesses, if no one guesses correctly give clue 2 before taking 3 more guesses and so on.

1. There is just one thing in the box, but there are many different types of it in the world
2. They come in different shapes and sizes, the largest is more than 3m tall and the smallest is about the size of a grain of rice
3. About 400 years ago, one type was more valuable than its own weight in gold
4. You can get them in every colour you could possibly imagine
5. Some of them can be eaten as food
6. They can be used to make perfume
7. They can be used to make poison
8. They are living things
9. Some types can eat flies
10. Some types can help cure diseases
11. It is made by a plant
12. It has petals

Botanical Painting Reminder Sheet

The same flower can be painted in different ways, but however you paint it, you need to look very closely at the structure of it. Pay particular attention to what is in the centre.



1. Write your name on your sheet.
2. Using a pencil, first draw an outline of the basic shape, the petals and inner structure.
3. Mix your colours in a mixing pallet. Try to match the shade you can see and add water to make paler shades.
4. Build up the colour in layers from the lightest shades first to the darker ones.



5. Add details with a fine brush, e.g. speckles, lines or stripes. Don't forget to keep using your magnifier to look closely.

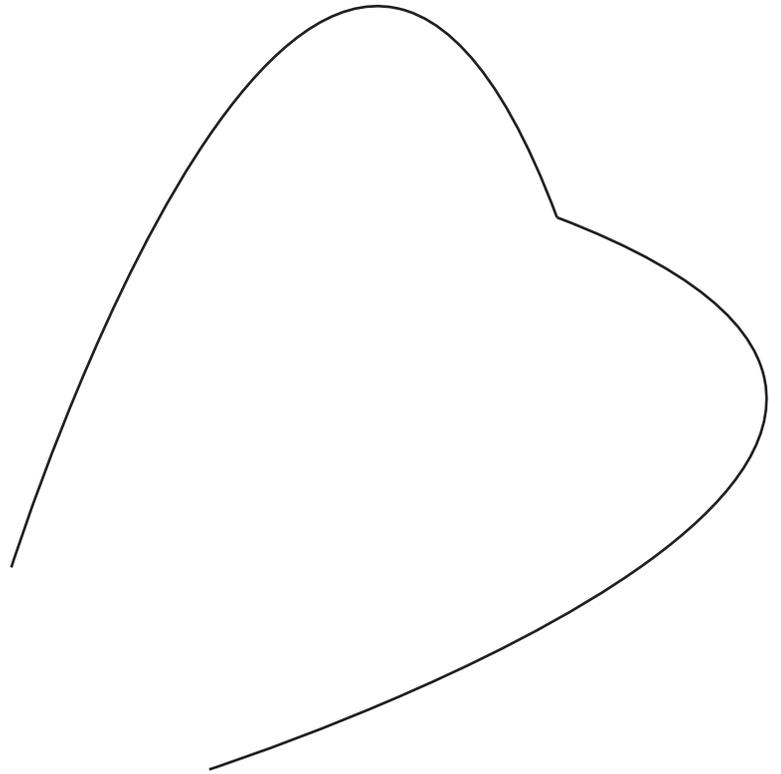


6. Add scientific notes (annotations) in pencil. Describe what you can see. Think about shape, colour, structure, petals, stems and leaves but most important of all, describe the structures in the flower's centre. Use a ruler to draw a line pointing to the part you are describing.



Petal template

Print on to A4 coloured card. Fold into quarters with the petal shape uppermost. See the plenary PowerPoint for further instructions.



Session 1 Teachers' Notes

The Outcome

Each session the children will learn about plant life cycles and alongside this will discover that the stages of the life cycle can provide food. They will learn to make a new 'dish' each session which can be served at a feast for invited guests at the end of the block. To give extra motivation, it is suggested that the children accompany the presentation of the food with a showcase of their learning. This could take the form of art, dance, music, and narration (all of which will be covered in the block) or alternatively an exhibition of work.

For this session you will need 2 different types of flowers as follows:

Edible Flowers

You will not need massive quantities but rather a few varieties that the children can taste (perhaps just a petal each initially and a few that can be put into the mini salads, for example one rose can provide petals for many salads (when mixed with leaves and a few other ingredients in a small bowl or disposable cup).

Common edible varieties include:



Pansies Lavender Tulips Marigolds Roses Dandelions Clover Nasturtiums

There are many others as well but take care to ensure that you have identified them correctly. Ask an expert, e.g. a qualified florist for help if you are not sure.

Specimen Flowers for Botanical Illustration

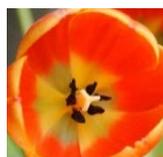
You will need enough blooms for one between two as you want the children to observe these closely. Allow a few extras as well for some choice and second attempts. Choose flowers that show the reproductive parts clearly. This is important because although the children may not know what these are yet, or what their purpose is, you want them to observe them and describe them to lead into the next stage in the learning - pollination. Good examples are:



Lilies
Daffodils



Nasturtiums
Tulips



Dog roses



Poppies

Lilies are a great choice as the stamens and stigmas are really obvious. If buying these from a florist (or they can usually be bought very cheaply at discount supermarkets) make sure you get them 4 or 5 days ahead of the lesson so they have a chance to open. The individual blooms can then be snipped off to give lots of specimens. Try to have at least 3 different types of specimen flower if possible.

Sourcing Your Flowers

If you talk nicely to a local greengrocer, florist or market stall holder they may sell you heavily discounted “over blown” blooms or even give you some for free at the end of the day. If parents, colleagues and friends have gardens or allotments, it is well worth putting out a plea beforehand for flowering weeds or garden flowers. Common weeds such as dandelions and clover will give you some edible flowers for free! Remember it is illegal to pick wild flowers so you will need permission from the owner of the land. If you have a school garden you may be able to source some flowers and flowering weeds from there and the children will enjoy going out to pick some for themselves.

Health and Safety

Sensitivity to Pollen

Before you begin this block of lessons it may be wise to check pupils’ sensitivity to pollen and if necessary make some alternative arrangements, for example children could do some internet research on flowers or paint from a photograph in a different learning space.

Food Allergies

As this block of learning will involve food preparation and tasting, it is advisable to check up on the children’s food allergies/intolerances and dietary requirements. This session involves preparing a salad from mixed fresh, plant ingredients.

The Flower in the Box

Before the start of the session, you will set up a guessing game for the children by secretly placing a flower in a lidded box and then telling them that the box holds the secret to their next science topic. Choose a large beautiful bloom for the maximum wonder factor.

Managing the Activity Part of the Session

The independent activity is botanical watercolour painting. This is a highly absorbing and enjoyable task that will really encourage the children to look closely at the flower specimens (one of the main objectives). Make sure you have your resources ready to allow for a smooth transition but keep the flowers hidden so they do not spoil the guessing game at the beginning. Encourage children to make more than one attempt if they have time. Watercolour technique takes practise and they will learn to control the paint and mix the colours by repeated experience. Place the Botanical Painting reminder sheets on the tables so that they can refer to these from time to time. Allow them to change the water in their pot regularly to help keep their colours bright when mixing. Make sure the children know where to put finished paintings to dry. Take one third of the class at a time to make the edible flower salad.

Making Edible Flower Salad

Hygiene

Begin by talking to the children about hygiene when preparing food and the importance of washing hands thoroughly with soap and water before they begin. Hand washing should take at least 20 seconds (the time it takes to sing "Happy Birthday to you" twice through!). After washing hands, try to keep them away from faces, hair and noses!

Ensure your flowers have been washed thoroughly along with your other salad ingredients.

Tasting Flowers and Making Salad *(one third of the class at a time, swapping round throughout the session)*

Remind children that not all flowers are safe to eat so they should never eat flowers without being completely sure that they are edible. Tell them that all the flowers they are using today are completely safe.

Ask the children if they have ever eaten flowers before. They will probably say no. Show them some broccoli and cauliflower. Explain that both of these are flowers too but they have not opened out properly yet. Cut some small pieces of each for the children to try. They are delicious raw. Give children small samples of your other edible flowers and encourage them to taste each one. Model tasting them yourself, discuss the colours, textures and flavours. Some children may be reluctant so encourage these children to smell them instead.

Give each child a bowl or disposable cup for them to make their mini salad and a chopping board and knife between 2 (or one each if you have enough). Lay out the choice of salad ingredients for the children to choose from. They should begin by sprinkling a few salad leaves into their container before adding a few other items. Suggested items include:

Cherry tomatoes, radishes, broccoli/cauliflower florets, cucumber, onion or spring onion, peas, sweetcorn

You will not need all of these, just enough to give a bit of choice.

They should slice and chop ingredients where necessary. **First demonstrate safe use of cooking knives. A good technique for children is to hold the item to be sliced onto the board with a fork and then to slice between the prongs (so fingers are well out of the way).**

Finally sprinkle the top of the salad with one or two petals or small edible flowers. The children can then add a teaspoon or two of salad dressing and toss it with their fork before eating it. Remind the children this will be one of the dishes they will serve guests at their feast!

Plenary Activity

Following the painting task the children will have observed the reproductive parts closely of several flowers. The short Plenary PowerPoint introduces the concept of these being the male and female parts within the flower and teaches the names of these parts. The short task involves building a flower model in groups of 3 and then rehearsing the names of the reproductive parts.

A little preparation is needed to have these resources ready for each group. Perhaps put them ready in a plastic document sleeves to give out quickly.

Each group will need:

- A blob of Plasticine™ or sticky tack the size of a small conker
- 6 cotton buds with one end cut off (just use strong scissors for this) to represent the stamens
- 1 cotton bud with both ends removed to represent the style and a small blob of Plasticine™ on top to represent the stigma
- A piece of thin coloured A4 card folded into quarters with a petal pre-drawn into the folded corner (do this using the template session resource)

