

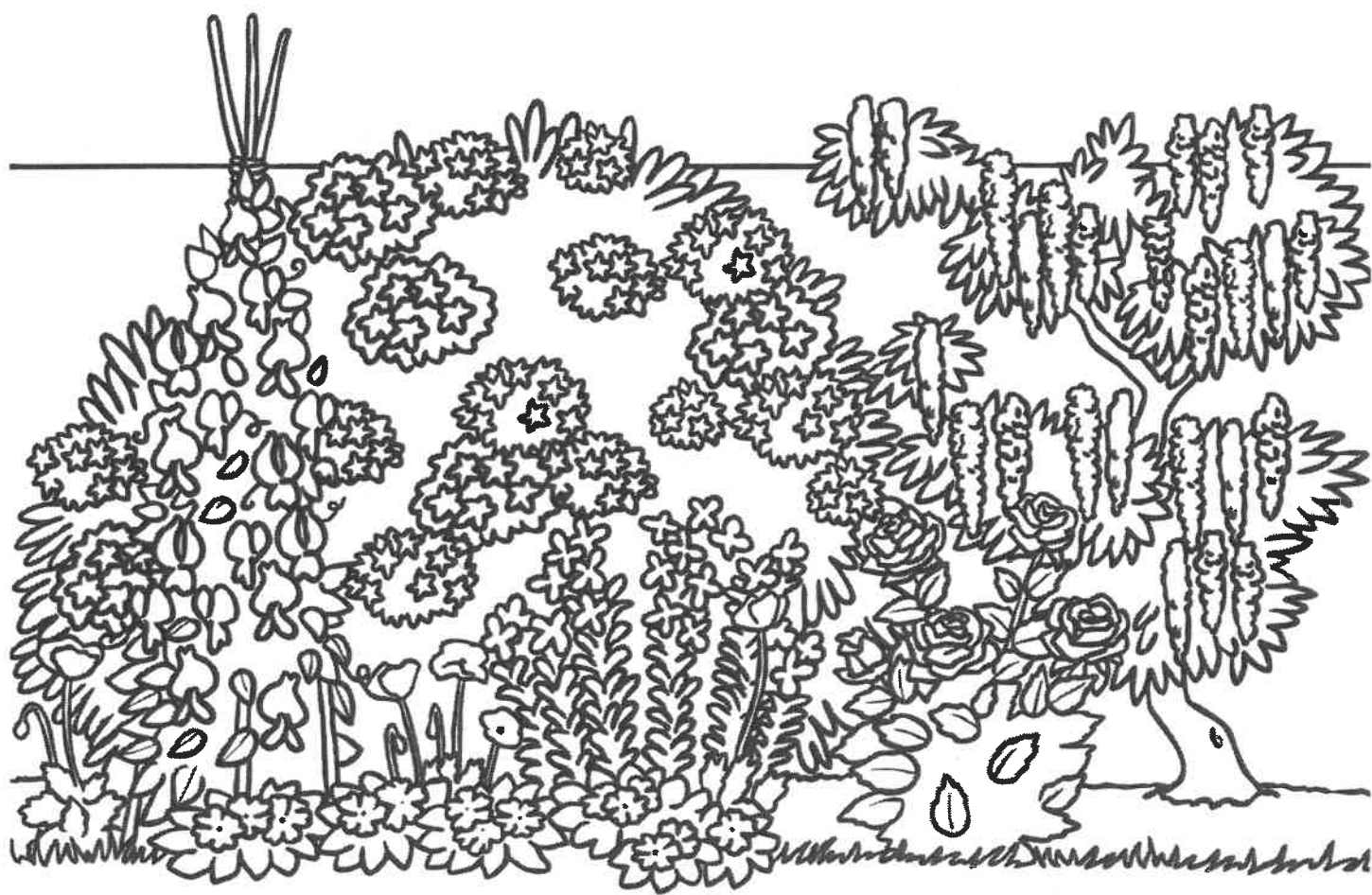
A decorative border of small, stylized pencils surrounds the central text. The pencils are arranged in a rectangular frame, with some pointing inwards and others outwards, creating a border around the text.

Year 1 Science

Year 1 Science - Plants

Learning from Home

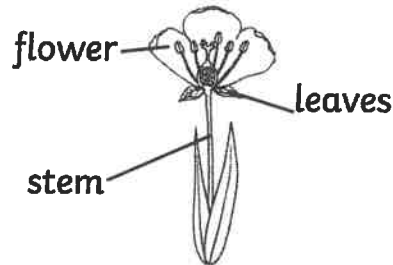
Activity Booklet



Plant Hunters

Go for a walk in your local woods or countryside. If you live in a town, try walking by a local river or canal or go to the park. Find examples of the flowering plants named below and pick one of each (see above), take a photo or sketch them. Find one other flowering plant as well.

Back at home, draw your four plants in the boxes and colour them in. Then label the parts like this:

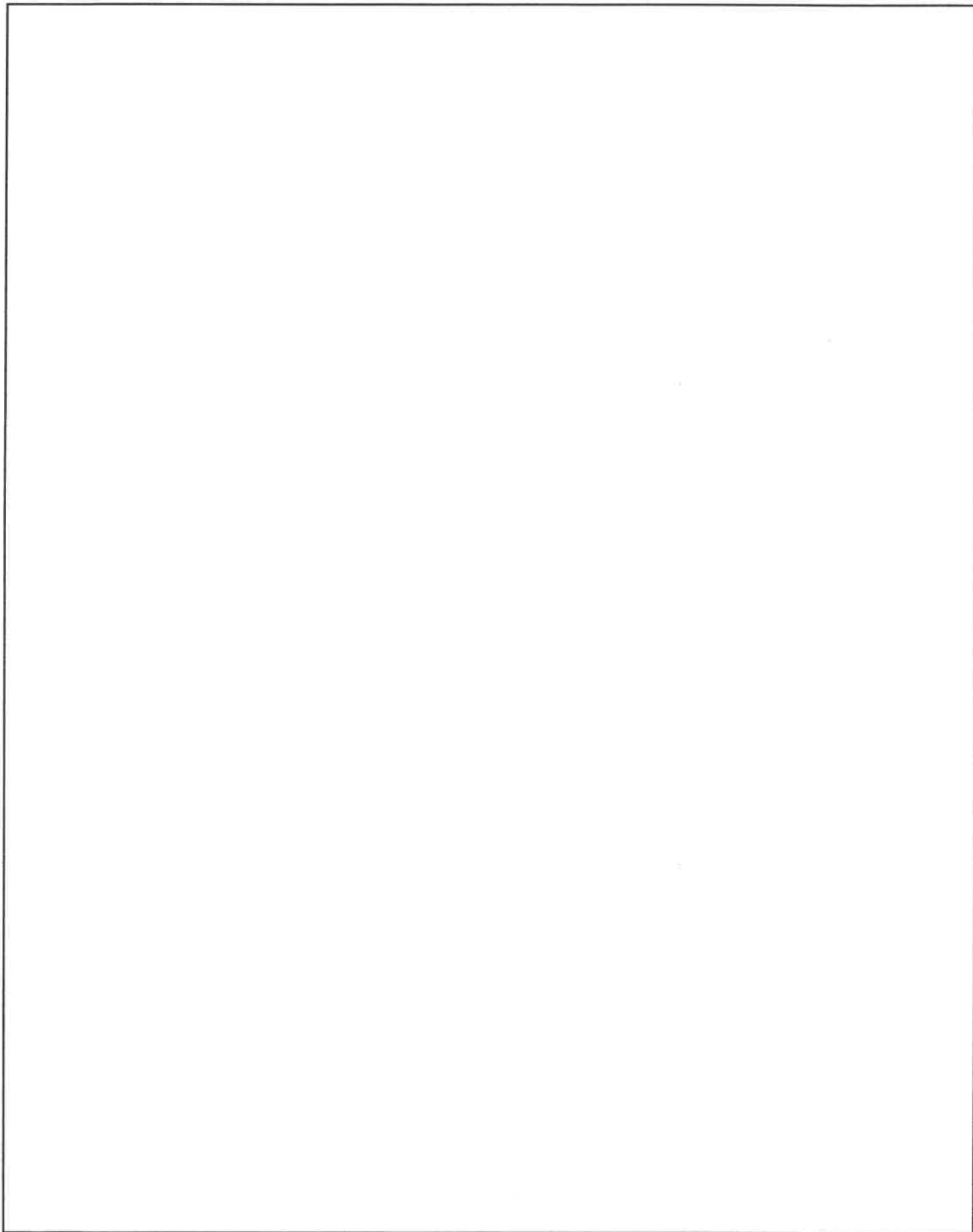


clover	grass
dandelion	another plant

Note for parents: This activity is best done in late spring or early summer when there will be a large number of flowering plants. Encourage your child to sketch or photograph the plants so they have a record of what they have seen and can study the pictures and talk about them later. If your child does wish to pick flowers, encourage them to take only one per plant, and make sure you are aware of plants that are poisonous (for example, deadly nightshade) or which are endangered and cannot be picked (for example, some varieties of bluebell).

Plant Hunters

Challenge: draw and label three more plants.



The Root of It

Carefully pull up some plants by the roots. Shake off the extra soil and then have a good look at the roots, using a magnifying glass. Draw a picture of the roots here:



Talk to your helper about why a plant has roots. Use books or the internet to find three reasons.

Note for parents: This activity can be done when you are having a weeding session in your garden. Alternatively, look at the roots of some of the plants you have grown as part of one of the other activities on this sheet.

Changes Throughout the Year

Go for a walk in your local woods in Autumn. Have a look at what is happening to the trees. Draw or write what you can see.

Note for parents: The best time to start a conversation about deciduous and evergreen trees is in the Autumn, when children can be encouraged to notice the changes in deciduous trees. It is worth knowing that evergreen trees often have small, thin and/or shiny leaves. These are all adaptations that enable the tree and its leaves to survive cold, snowy weather.

Changes Throughout the Year

Can you find any trees that look different? Take a leaf from a tree that is changing and a tree that is not. What differences can you see? Draw the two leaves and describe them.

deciduous leaf	evergreen leaf

Seasonal Trees

Decorate the trees on the following page to show what happens in spring, summer, autumn and winter. You can use coloured pens or pencils, painted fingerprints or scraps of tissue and paper.

Make some notes here so you can decide how to decorate each tree:

spring	summer
autumn	winter

Note for parents: There are lots of great time lapse videos on the Internet, showing deciduous trees changing throughout the year. Children need to understand that deciduous trees don't just change in the Autumn, but all year round. Watch one of these videos with your child and discuss what they can see. The completed decorated trees can make a great calendar gift if you attach a small calendar booklet, which you can buy from craft shops!

Seasonal Trees

spring



summer



autumn

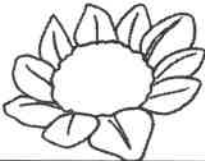


winter



Plant Food

Have a look at these vegetables. Can you decide which part of the plant they come from? If you are not sure, find a picture of the plant growing – this might help!

Word Bank - root, leaves, stem, flower		
Plant/vegetable	What part do we eat?	Do you like it?
broccoli 		
carrot 		
lettuce 		
spring onion 		
cauliflower 		
celery 		

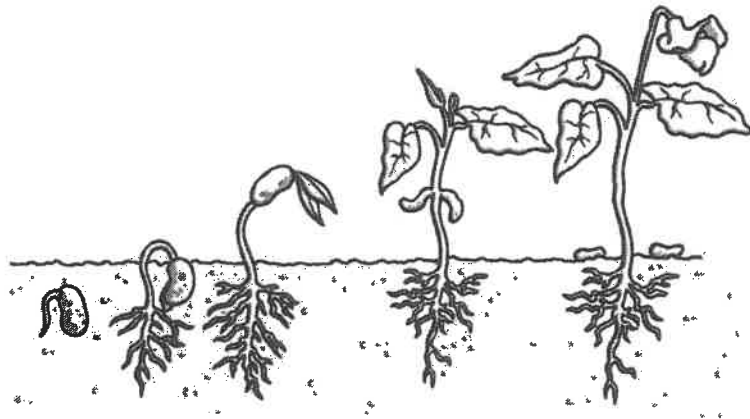
Note for parents: This activity helps children to relate their knowledge of plants to everyday life. To make the activity as practical as possible, go with your child to the supermarket or greengrocer and buy a small amount of each of the plants. When you have discussed which plant part they are, encourage your child to try each one and say which they prefer.

Growing Seeds

- Do seeds need water to germinate (begin to grow)? Plant seeds in two separate pots. Water one every day. Don't water the other one. What happens?
- Do seeds need warmth to germinate? Plant seeds in two separate containers. Put one in the fridge and keep one out in another room. What happens?
- Do seeds need light to germinate? Plant seeds in two separate containers. Put one in a dark place such as a cupboard, and the other in the light. What happens?
- Do seeds need soil to germinate? Take some cotton wool and place it in a saucer. Dampen it slightly and sprinkle cress seeds on top. Keep the cotton wool moist and watch what happens.
- Another great trick with cress is to take an empty eggshell and place it in an eggcup. Draw a face on the eggshell and fill it with damp cotton wool. Sprinkle cress seeds on top and watch your egg-man grow hair!

Once your seeds have germinated, try these tricks:

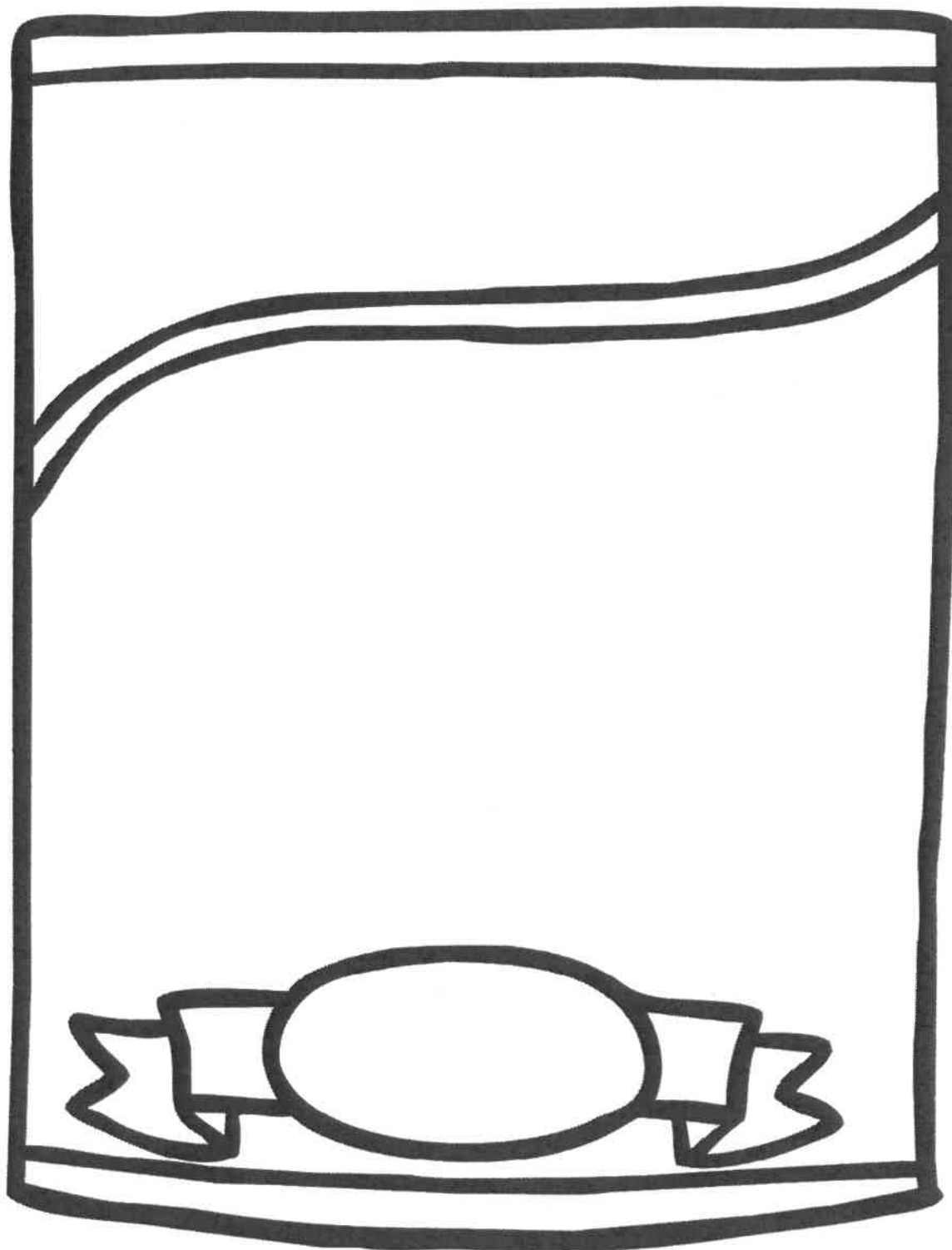
- Water one plant regularly and don't water the other. What happens?
- Take a cereal box or shoe box, and cut a small hole near the top. Place your new plant inside and seal the box up completely. Now wait and watch your plant try to escape from the box!



Note for parents: Planting and growing seeds is a fun, engaging way of teaching children about how plants grow and develop, and can give them opportunities to carry out simple investigations. The quickest and most rewarding seeds to grow are cress, broad beans or sunflowers, with the added bonus that the final plant is either edible or beautiful! Here are some ideas of things you can try and observe when your seeds are growing. Before you try each one, ask your child to think about what may happen (make a prediction) and, if appropriate, explain why. Encourage your child also to think about making each test 'fair' - this basically means changing only one thing (the variable) and keeping everything else the same. So if we are testing whether plants need water, the only thing we change is the amount of water we give the plants. Everything else that might affect the plants' growth must be the same - temperature, light, type of plant etc.

Share What You Know

Imagine you are writing instructions to go on the back of a packet of seeds. What would you tell people to do to make sure their seeds grow and stay healthy?



Note for parents: Children can complete this activity at their own level. Confident writers should be able to have a go at writing the instructions; less confident writers may need more support, or to express their ideas verbally.

More Fun Activities with Plants

- Put several drops of food colouring into a beaker of water then place the stem of a white carnation flower into the water. Over time the flower will change colour as the water is drawn up through the stem by 'capillary action'. To make this more interesting, have two beakers with two different colours of water. Carefully split the carnation stem up the middle using a sharp knife, then place half the stem in one colour and half in the other. Ask your child what they think will happen.
- Grow some food! Salad crops like radishes and lettuce can be grown easily, in pots or containers. Strawberry plants usually grow well, provided the fruit is protected from birds. Or you could grow potatoes in an old bin or a specially designed potato bag.
- Go through your cupboards and sort all the food in there according to whether or not it comes from a plant. Or you could look at what you are eating for dinner and discuss the plants you are eating. Children may be surprised to learn that things like bread, oils and cereals come from a plant. Discuss with your child, that foods that don't come from plants also need plants – for example, we would not be able to have burgers, eggs, milk or cheese if animals could not eat plants.

Key vocabulary

Children should become familiar with this vocabulary and, where appropriate depending on age and ability, should be able to read and spell the words.

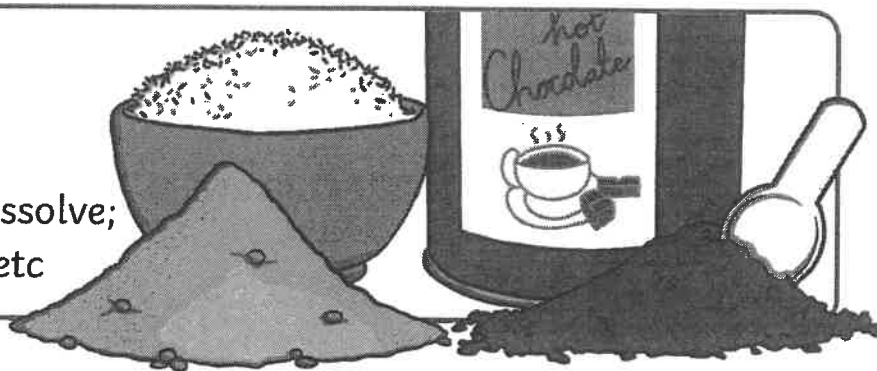
stem	blossom	evergreen
leaf	trunk	deciduous
root	branch	germinate
bulb	seed	plant
flower	fruit	bud
petal		

Dissolving

Which solids dissolve in water?

You Will Need

- Water (hot and cold)
- Transparent Containers
- Substances to try and dissolve; sand, sugar, salt, coffee etc



Method

- 1 Add a teaspoon of whichever solid you are testing to a glass of cold water and a glass of hot water, stir and observe the difference.
- 2 Look to see if the solid dissolves in the hot water and cold water and if one is better than the other.
- 3 Can you design a chart to record your observation?

The Science Bit

Things like salt, sugar and coffee dissolve in water. They are soluble. They usually dissolve faster and better in hot water. Pepper and sand are insoluble, they will not dissolve even in hot water.

For Older Children

Everything is made of particles which are always moving. When a soluble solid (solute) is mixed with the right liquid (solvent), it forms a solution. This process is called dissolving.

Two things that affect the speed at which the solid dissolves are temperature and the size of the grains of the solid. Caster sugar which is made of fine particles will dissolve quickly, but bigger sugar particles will take longer.

Solids dissolve faster in hot water as in hot water the water molecules are moving faster, so bump into the solid more often which increases the rate of reaction.

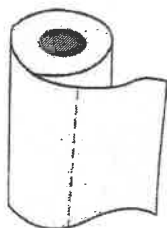
Awe and Wonder

Paper Towel Colour Mixing

You will need:



Water



Kitchen roll



Plastic glasses



Food colouring
in primary
colours

Method:



1. Put red food colouring into one glass and blue food colouring into another glass. Add water to both glasses.
2. Using 1-2 sheets of kitchen roll, roll length ways into a tube.
3. Bend in half and dip one end into each glass.
4. Watch what happens as the colours travel.
5. What can you see happening? What happens to the colours?
6. What colour can you see where the blue and red meet?

The Science

Water moves up the paper towel because the paper is absorbent, it sucks up water. The colour travels with the water making the paper change from white to red or blue. Colours mix when they are joined together, red and blue make purple. See what colours can be made with just the primary colours.

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Awe and Wonder

Fizzy Colours

You will need:



Paint pots or plastic cups



White vinegar



A few tubs of bicarbonate of soda

Shallow tray



Paintbrushes or medicine syringes



Food colouring in several colours



Method:

1. Pour out the bicarbonate of soda into the tray and spread it out.
2. Drop a few blobs of different coloured food colouring into each paint pot.
3. Top up to half full with white vinegar.
4. Put a paintbrush or medicine syringe into each paint pot.
5. Suck the coloured vinegar into the syringe or soak the paintbrush.
6. Drip the colour into the tray. What happens to the powder? What happens to the liquid?
7. Once you have dripped 2 or more colours use the brush to mix the 2 colours together. What happens?
8. What can you see in the mixture?



The Science

You just made a chemical reaction! You mixed the acid (vinegar) and the alkali (bicarbonate of soda).

Did you see the bubbles of carbon dioxide (CO_2)? That is a gas. The bicarbonate of soda is an alkali, it reacts or changes when it mixes with an acid like vinegar because they are very different. If you mix either one with water (which is neutral, not an acid or an alkali) nothing happens because they are not as different.

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Awe and Wonder

Rainbow Colour Mixing

You will need:



A bowl



A cup of milk
(whole or 2%)



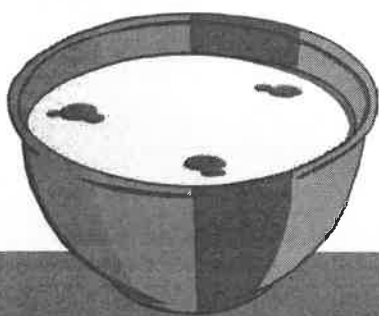
Different colours
of food colouring



Washing-up
liquid

Method:

1. Carefully pour a cup of milk into a bowl.
2. Taking care not to mix the colours, drop three drops of one food colouring at one side. About a third of the way around, add three drops of another colour and another third of the way around, add three drops of another colour.
3. Next, squeeze a drop of washing-up liquid into the centre of the bowl.
4. What happens to the colours?



The Science

Milk is mainly water with another big ingredient: fat. The washing-up liquid bonds with the fat in the milk. The food colouring is pushed out because the bond is so strong.

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