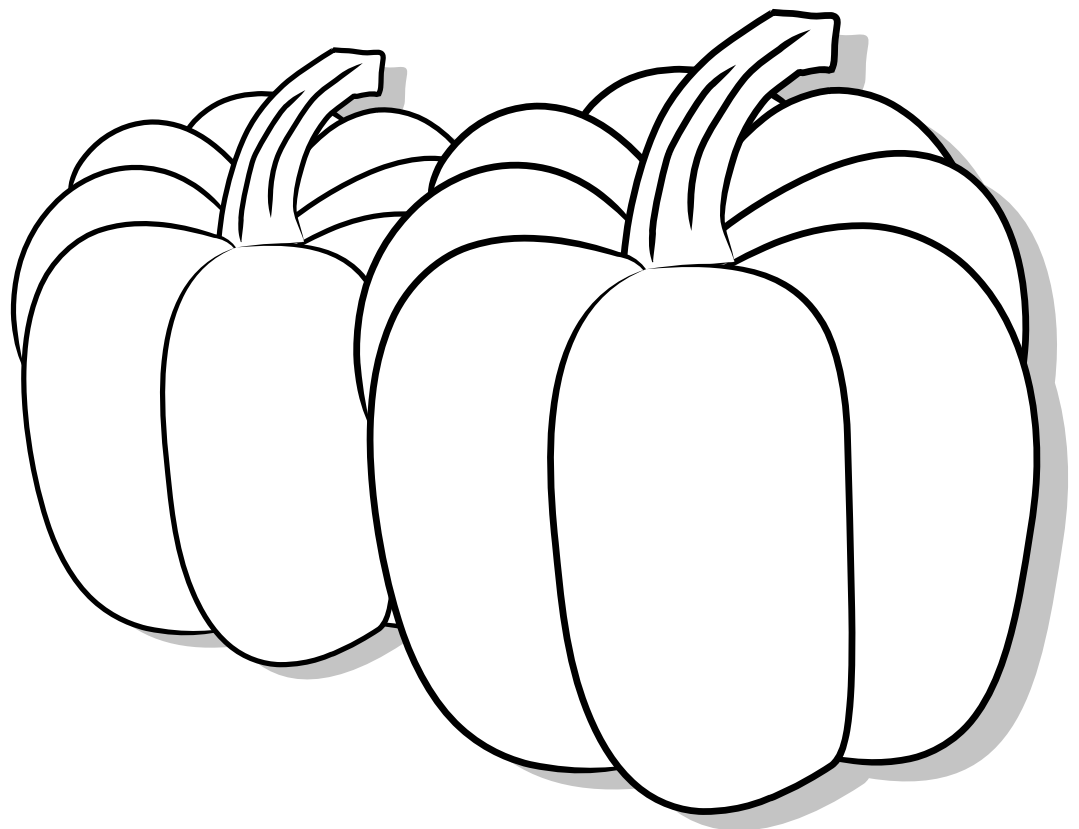




GROW BIG, STRANGE & NASTY PLANTS

PLANTS



GROW BIG, STRANGE & NASTY PLANTS

GROW BIG, STRANGE & NASTY PLANTS is a fascinating resource for your Classroom.

If the instructions in the instruction manual are followed your class will benefit from many hours of close plant life observation.

These notes have been produced to give you a bank of practical classroom activities, with photocopiable pages to enable you to get the best out of your **GROW BIG, STRANGE & NASTY PLANTS** kit in your classroom.

They are designed primarily to help in planning and implementing the National Curriculum Science *Life Processes and Living Things*. There are also opportunities to cover *Attainment Target 1: Scientific Enquiry*, in particular obtaining evidence through observation.

There are links with the requirements of the *Literacy Hour* for non-fiction work, for example: reading and following directions/instructions, writing captions, assembling information, writing descriptions, lists and observations.

The children's observations can give real opportunities for *Data Handling*. It is worth noting that if the kit is started at the beginning of the year during winter and spring, time should be set aside in the summer months to observe the flowers and fruits.

The kit provides everything you need to sow the seeds. You may want to have some more pots and compost for the extra Sunflower and Pumpkin seeds provided in the kit. Please also note that the 'thrive' compost can be used for all seeds, but it must be used for the insect-eating Sundew plant.

The **GROW BIG, STRANGE & NASTY PLANTS** instruction manual that comes with your kit contains information about the plants in the kit. You may find it useful to photocopy it for groups of children to use as a resource when carrying out the activities in these notes.

PLANTS CLASSROOM ACTIVITIES

The kit is best started in January if you want to plant all the seeds at the same time. The Mimosa and Sundew plants can be planted any time of the year. It should be noted that the seeds could take weeks to germinate. If you start the kit at the beginning of the Spring Term some of the seeds may not germinate until the Half Term. Allow time in your planning to observe the plants and their growth throughout the Spring and Summer terms.

PLANTS ACTIVITY ONE

The Instruction Manual tells you how to plant each seed. The children could skim and scan the text for the specific instructions on planting. From these, and their own experience of planting the seeds, the class could write a list of instructions for each seed. They could also include a section entitled 'Equipment needed' and 'Notes for care of plant'. If the children find the terrarium tricky to open and close for watering use an elastic band around the 'body' of the terrarium and a paper clip to close the top. Use PLANTS ACTIVITY SHEET ONE. Use a different sheet for each plant.

PLANTS ACTIVITY TWO

In this activity the children will be investigating seeds. Have available for the children a variety of fruits that contain seeds. Good examples are: apples, tomatoes, grapes, melon, sweet peppers, pears, kiwi and cucumbers. Get the children to look for where the seeds are located in the fruit. Use PLANTS ACTIVITY SHEET TWO for the children to record their findings. When the data has been collected the children could discuss and compare their findings. This activity should produce opportunities for a lot of descriptive language use as they describe the differences between the seeds. Ask the children to draw a cross section of the fruit, labelling where they found the seeds.

PLANTS ACTIVITY THREE

In this activity the children are asked to observe and examine a seed itself. You will need to provide some Broad Bean seeds that have been soaked overnight. Ask the children to carefully take the outer skin off the bean and describe what they see. They should find that the seed has two large parts (called cotyledons). In between these they will find a small root and the beginnings of a shoot and its tiny leaves. The two large parts of the seed will provide the food the young plant needs until the roots and leaves are big enough to provide its own food (with some seeds the cotyledons are pushed above ground where they form the first pair of leaves). Using PLANTS

PLANTS CLASSROOM ACTIVITIES

ACTIVITY SHEET THREE the children could draw what they see and label their work. An example of a drawing of a Broad Bean seed can be found on the page of drawings provided with this pack. After this activity line the inside of a jam jar with blotting paper and place some soaked beans between the paper and the glass. Put the jar in a light place and keep the paper moist. The class can then observe the seed growing. When you put the seeds in the jar place some of them at different angles or upside down. The children can then observe the root finding the way down and the shoot growing upwards despite being planted the wrong way up!

PLANTS ACTIVITY FOUR

Using PLANTS ACTIVITY SHEET FOUR get the children to think about the living conditions plants need in order to thrive. By using a terrarium the humid conditions of the tropical rain forest can be imitated. Get the children to research this habitat by using all sources of information available to them. This could lead to work on other plant habitats that occur around them in their local environment.

PLANTS ACTIVITY FIVE

Once the sunflower seeds have germinated and the shoots appear above ground they grow very quickly. For this activity you will a long piece of card or paper to plot the growth of one of the sunflowers. The children could get involved in the discussion about the size of paper needed by estimating the final height of the plant. An old roll of wallpaper can do the job. The aim is to measure the plant once a week. Cut a piece of string to the same length of the plant and stick it on the chart each week with the date and height. Again the children could estimate the amount of growth the plant makes each week. This activity should promote a lot of mathematical and scientific language. Another follow on activity to this measurement work is to get the children to make a list of things they can find sharing the same measurement of their plant each week. This activity could also be done to plot the growth of all of the plants in the kit, but the sunflower produces quicker more dramatic results.

PLANTS ACTIVITY SIX

This activity tests the children's knowledge about plants. They need to know what plants need to thrive: light, air and water. They can also demonstrate that they know the different parts of a plant. Asking the older children to draw and label a flower as well as the plant can extend this activity. This could be labelled with: petal, stamen, stigma, ovary and sepals.

PLANTS CLASSROOM ACTIVITIES

PLANTS ACTIVITY SEVEN

Using PLANTS ACTIVITY SHEET SEVEN ask the children to produce a life cycle of a plant. A simple one would be of a Sunflower: Seed, germination, seedling, seed production, old plant dies, seed. Older children could be asked to produce a life cycle of a dandelion: Pollination, fertilisation, seed production, seed dispersal, and germination. If a life cycle of a tomato is produced the production of the fruit will feature.

PLANTS ACTIVITY EIGHT

In this activity the children are asked to match a 'plant word' with a glossary definition.

We hope you enjoy using these activities with your class. We would welcome your feedback. There are many books and publications that include many other activities to try out in your classroom to really enrich your class' knowledge about the wonderful life of plants.

Don't forget to try the suggestions in the handbook: use the cube to grow a square tomato, win a competition with the tallest sunflower, see how heavy you can grow a pumpkin! Have Fun!

ALSO INCLUDED IN THE PACK:

A page of pictures of plants to use when creating own work sheets.

A page of facts about Strange and Nasty plants.

A book list.

PLANTS ACTIVITY ONE

Follow the instructions for planting each of the seeds provided in the kit.

See if you can write a set of instructions for planting seeds for someone else to follow.

Name

PLANTS ACTIVITY TWO

Name.....

Pick four fruits. Draw the fruit and the seeds you find.

<p>Fruit..... How many seeds?.....</p>	<p>Fruit..... How many seeds?.....</p>
<p>Fruit..... How many seeds?.....</p>	<p>Fruit..... How many seeds?.....</p>

PLANTS ACTIVITY THREE

Look at your seed closely. Draw and label what you can see. Look for the root and the shoot. Can you see any tiny leaves?

Name

PLANTS ACTIVITY FIVE

Worksheet unnecessary. See page 4 for a description of the activity and equipment needed.

PLANTS ACTIVITY SIX

Draw a plant and label it with these parts:
Stem, Roots, Leaves, Flower.

Fill in the missing words.

Plants need, and
to live.

Name

PLANTS ACTIVITY SEVEN

The life cycle of a

Write a sentence for each step of the life cycle you have drawn.

Name

PLANTS ACTIVITY EIGHT

Match the words on the left with the correct definition.

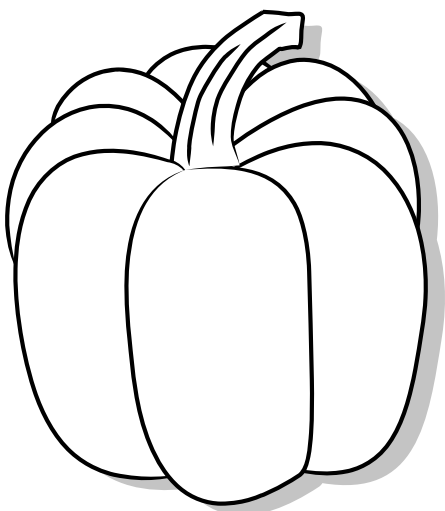
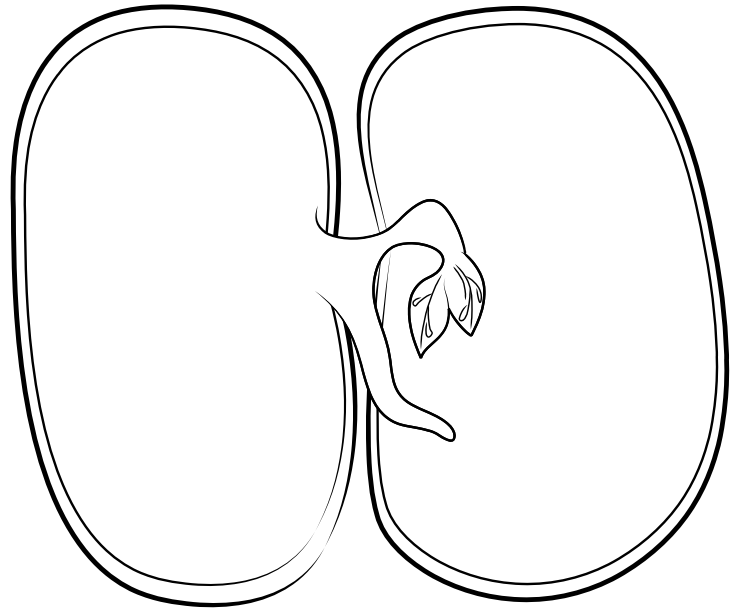
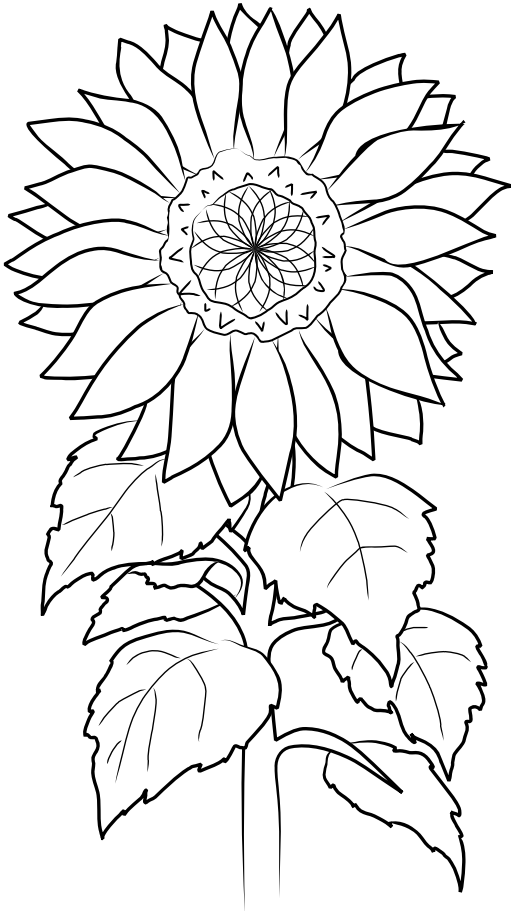
Nectar	the process of attaching pollen with a female cell
Fruit	the growth of a seed
Pollination	the sweet fluid made by the plant to attract insects
Sepal	the male part of the plant
Compost	the female part of the plant, it catches the pollen
Stamens	the protective outer leaves of the bud
Stigma	decayed leaves and grass
Germination	the seed bearing part of a plant

Name

SOME FACTS ABOUT STRANGE & NASTY PLANTS

- There are more than 335,000 plant species.
- Many plants protect themselves by producing a substance that stings or poisons. The Stinging Nettle has thousands of tiny acid filled spikes that break off and pierce your skin when it is touched. This causes an itchy painful rash. The Poison Ivy plant from America produces poisoned oil that causes the skin to develop painful blisters.
- Australians have a very nasty tree called a Stinger Tree. It has tiny poison filled spikes like the Stinging Nettle, but the poison can prove to be deadly if you are stung all over your body.
- The Venus Flytrap is a meat-eating plant. It catches flies to enrich its diet of the minerals it needs to thrive. They usually grow in marshy or boggy areas. It has touch sensitive leaves like the Mimosa plant. Once caught in the leaf trap the fly dissolves in a liquid produced by the plant. This liquid 'feeds' the plant through the leaves. It takes it several weeks to digest one fly.
- The Sundew plant in your pack also catches flies and insects. Its leaves act like a flypaper, catching flies in a sticky 'glue'. Once caught the insect is wrapped up by the leaf. Like the Venus Flytrap it dissolves the fly within a digestive juice, enriching its diet. The Sundew plant gets its name because the 'glue' droplets on the leaf shines like dew in the sunlight.
- Mistletoe feed on other plants. They steal nourishment from the plants that they grow on. They have special roots that tunnel into their host tree and suck up the sap. The Dodder plant does the same thing.
- The largest tree in the world can be found in America. One giant Sequoia Tree is 29m around the trunk and 84m tall!
- There is a cactus in America called Saguaro that can reach 16m tall. Cactus plants can also be nasty if you get too close to them, they have spikes instead of leaves. The spikes collect droplets of water in the air (mist and dew), which runs down the plant to the roots. The spikes also prevent animals biting the water filled plants when they get thirsty.
- The Rafflesia plant lives in a tropical habitat. It can produce a flower that can grow up to a width of 91cm and weigh up to 6kg.

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PLANTS BOOK LIST

The **GROW BIG, STRANGE & NASTY PLANTS** booklet provides plenty of interesting facts about the plants in your kit. However you may like to find out more. The books listed below are recommended, also encyclopaedias and general books about Plant life.

Many schools and children have access to the Internet. Searches could be made and classes may find they are able to communicate their findings and data about their plants with other schools around the world that are also investigating plants in the classroom.

Plants Starting with science series ~ Vanderlinden/Gold
Published 1997 Heineman.

Plants Find out about series ~ Steve Pollock Published
1995 BBC.

Plants Grow Do you know how series ~ Stephen Parker
Published 1985 Piccolo Piper.

Plant Eyewitness Guide 14 ~ David Burnie Published
1989 Dorling Kindersley.

Fly Trap: Plants That Bite Back ~ Martin Jenkins
Published 1996 Walker Books.

Plants: Strange Plants ~ Angela Royston Published 2000
Heineman.

Life Cycle of the Sunflower ~ Angela Royston Published
1999 Heineman.

Tropical Rain Forests Natures Green Umbrella series ~
William Morrow Published 1997 Mulberry Books.

PLANTS CLASSROOM FEEDBACK SHEET

We would appreciate your comments about your teacher pack notes and any other ideas you might have about using **GROW BIG, STRANGE, & NASTY PLANTS** in the classroom.

You can write to us, e.mail or fax us back on this form.



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