

PLANT REPRODUCTION

Students' worksheets

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Lesson 1

Name _____

Introduction How to classify

Everyday, you classify. Think about it.
Sorting objects and putting them in a specific place is **classification**.

Practise classifying objects according to physical structure and characteristics.

Activity 1 - Living and non-living things

In this activity we are going to compare and classify a set of pictures.

- *How can they be grouped?*
- *How can they be studied?*
- *What keys are used to organize these objects into the following groups?*

.....
.....
.....
.....
.....

Activity 2 - Sorting game.

- Choose a creature and try to work out which one has your classmate picked.

Lizard	Goldfish	Owl	Rabbit	Snail	Spider	Butterfly	Crab
--------	----------	-----	--------	-------	--------	-----------	------

Ask Questions like these:

<p>Is</p> <p>Does</p> <p>Can</p>	<p>it</p>	<p>have</p>	<p>A mammal?</p> <p>Fly?</p> <p>Legs?</p> <p>Wings?</p> <p>Fur?</p> <p>A vertebrate?</p> <p>Warm blooded?</p> <p>Backbone?</p>
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3 - How can you classify these animals? (fig 1)

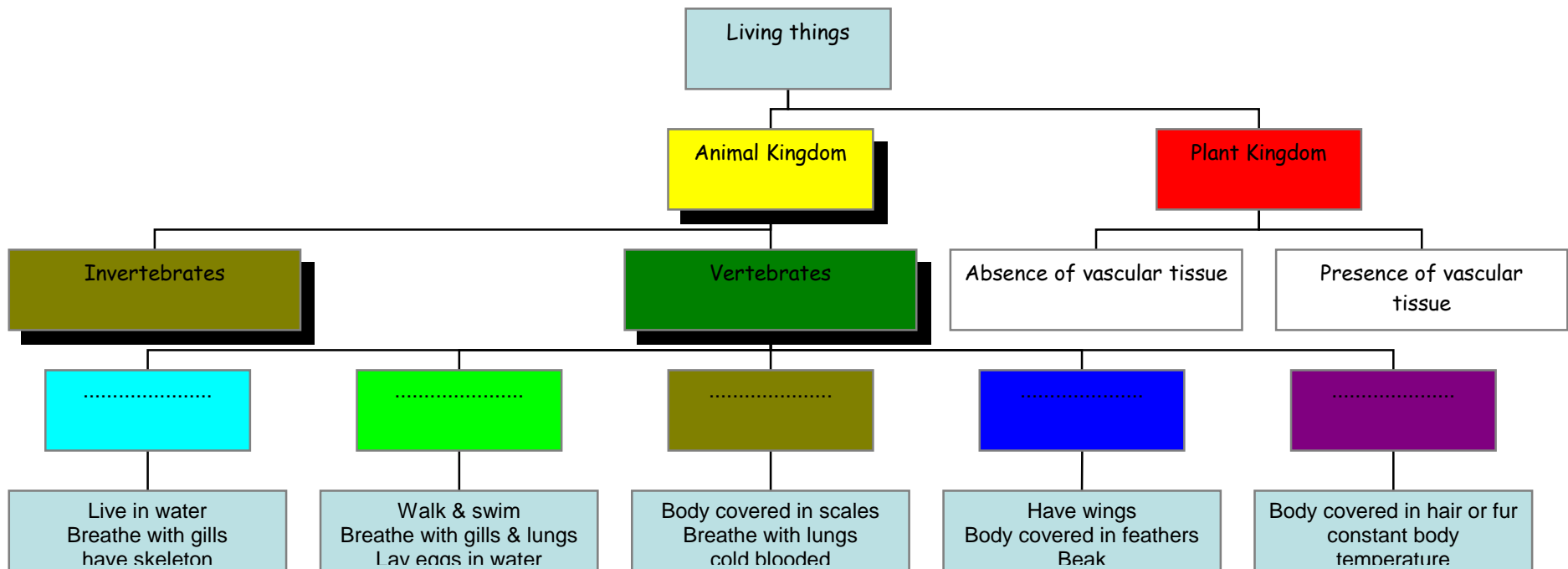
Name _____

CLASSIFY ANIMALS: dog, horse, bird, snake, crocodile, sardine, butterfly, whale, golden eagle, alligator, donkey, penguin, hake.

	FISH	AMPHIBIANS	REPTILES	BIRDS	MAMMALS
Warm-blooded or Cold-blooded					
Type of body covering					
Live birth or Hatched from egg					
Feed young with milk (yes/no)					
Has a skeleton					
Breathes with lungs or gills					



ANIMAL KINGDOM CLASSIFICATION (fig 1)



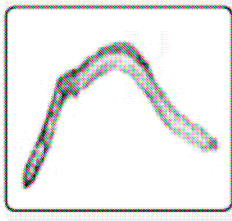
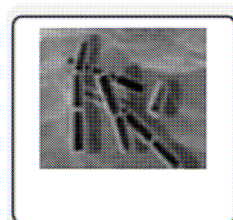
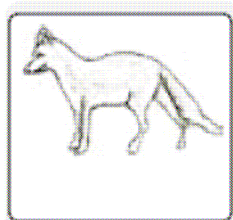
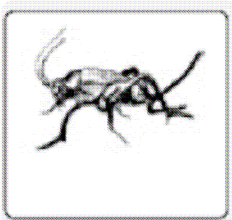
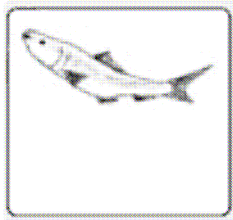
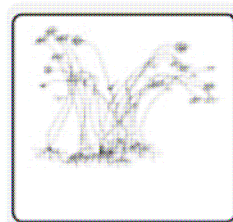
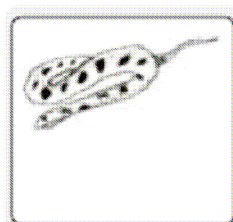
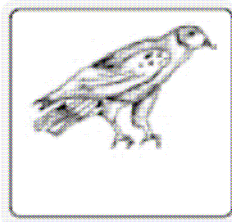
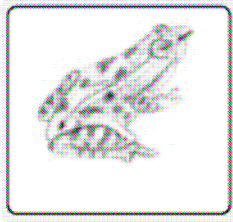


Activity 4

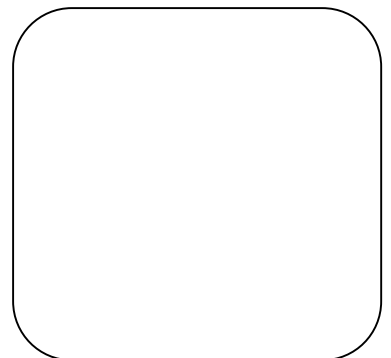
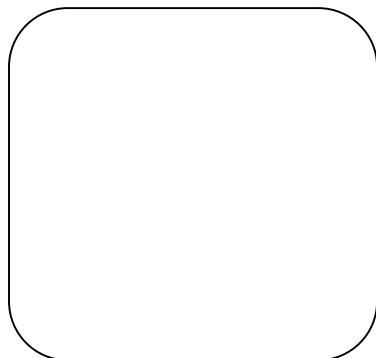
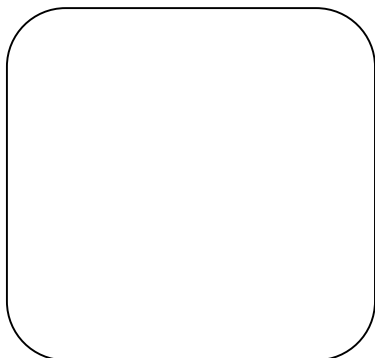
Name _____

The Key to living things.

In pairs, classify these living things using the dichotomous key on the next sheet.



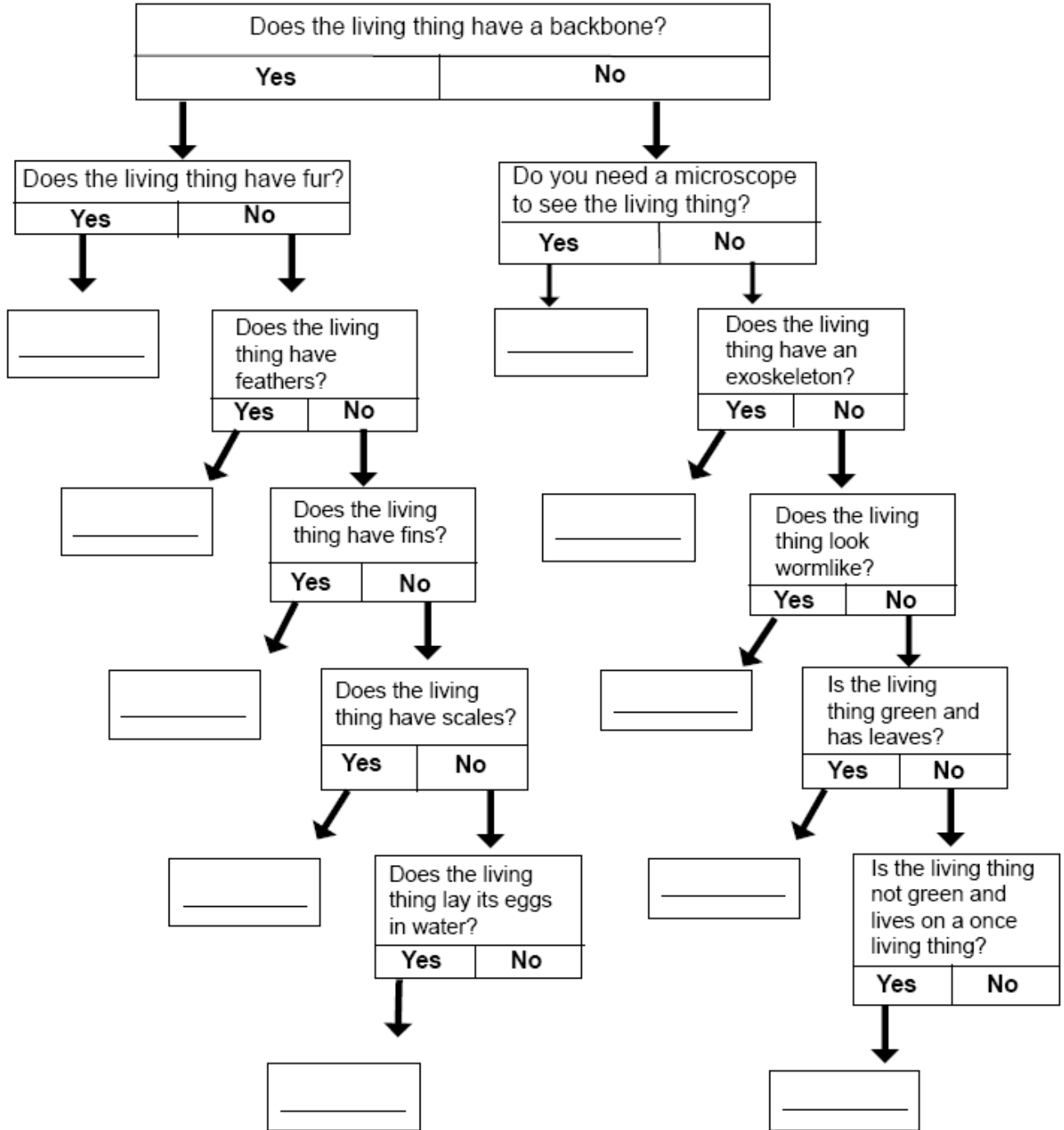
Now make your own drawings and share them with other students to put into the key.





DICHOTOMOUS KEY

Name _____





Lesson 2

Name _____

Activity 1 - Living things - what they need and what they can do. (fig. 2)

Application

Choose a plant, then write its name on the dotted line in the box in the table.

Choose an animal and write its name on the dotted line in the middle of the box.

Choose an object that has never been alive and write its name on the dotted line in the last box.

Synthesis

Look at your plant and answer each of the questions. If the plant has the characteristics in the list, write YES in the box.

If the plant does not have the characteristics, write NO in the box. Then repeat this for the animal and for the object you chose.

In groups of threes compare your answers, you can use sentences like this:

I think it is a because it
--

Activity 2

Application

Now you are going to look at some pictures of animals and plants (fig 2) e.g. *bee, spider, worm, mealworm, snail, dog, horse, bird, snake, crocodile, butterfly, whale, grass, ivy, holly, cherry tree, daffodil, oak tree, human* **which word describes these living things?**

Analysis

Group the living things into similar groups and give the reasons for doing so.

Synthesis

Produce a skeleton Mind map of these groups of living things groups on a poster.

Evaluation

Present your poster to rest of class.

PLANT REPRODUCTION
HOW TO CLASSIFY



- **Living things** - what they need and what they can do. (fig 2)

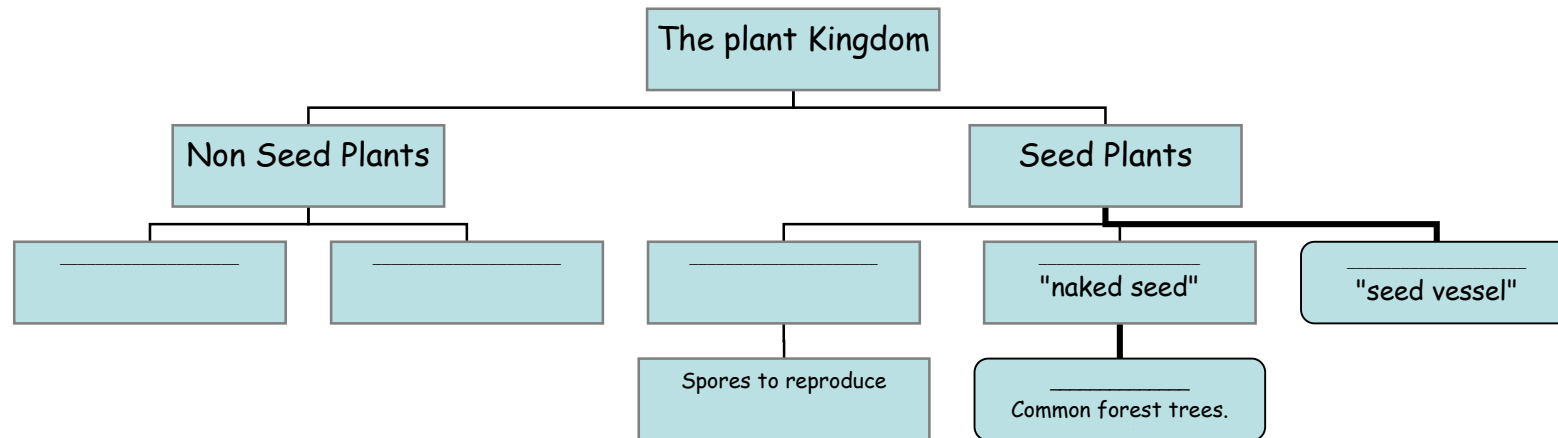
Characteristics (Living things need to do all these things)	A plant	An animal	An object that has never been alive.
M Does it show any movement?			
R Does it need air or oxygen?			
S Does it react to what is happening in its surroundings?			
G Can it grow larger?			
R Can it make more living things like itself?			
E Can it get rid of waste from itself?			
N Does it need food for energy?			



Activity 3

PLANT KINGDOM CLASSIFICATION

Complete the following chart.





Plant Kingdom Classification

Lesson 2

Name: _____

Activity 3

Botanists have developed a scientific classification system to group similar plants together. They make note of details about plant anatomy (especially that of flowers, fruit, seeds and leaves). They use these characteristics to divide plants into categories.

Application

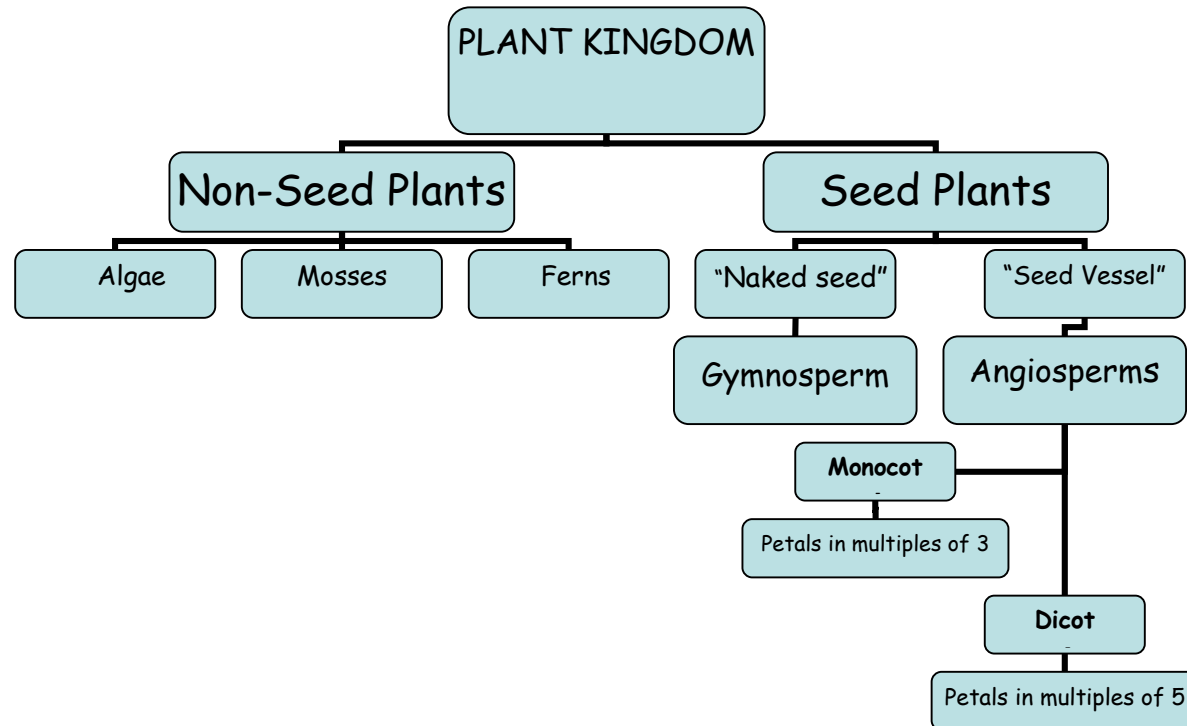
Working in pairs, read at the text carefully. After that complete the plant kingdom classification (fig 3).

At the end you can test your answers looking at slide 11 on the power point.

Plants are the key to life on Earth. Without them many other living organisms would soon disappear. This is because higher life forms depend on plants, either directly or indirectly, for their food. Most plants, however, are able to make their own food using sunlight. All plants fall into **two basic** categories. Flowering plants produce true flowers. The non-flowering plants include "primitive" plants, such as algae, mosses, and ferns. Horsetails, and liverworts, and the "gymnosperms" a group of plants which includes the conifers.

There are about 3000,000 species of flowering plant in the world today, and they grow everywhere from snowy mountains to arid deserts.

PLANT REPRODUCTION
HOW TO CLASSIFY





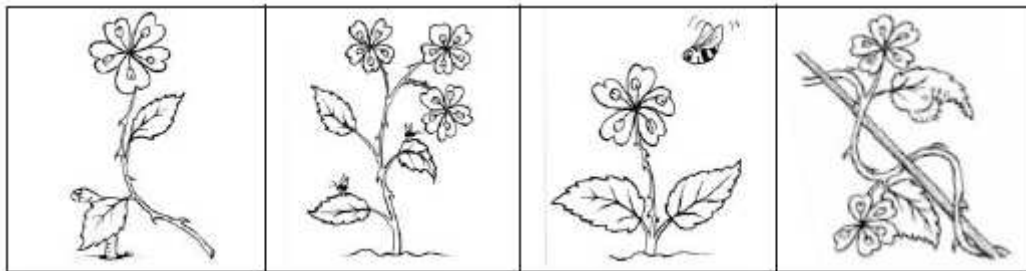
Activity 4 - Sort it - game with cards.

This activity is based on the card game "Happy families". There are 24 cards in the pack, made up of six sets of four cards.

1. Play the game in groups of three or four players. Spread the cards out (face upwards) and then sort them into groups in whatever way you like.

Then give children several minutes to discuss this. After that the children report back to rest of the class saying how they have sorted their cards and their justification for doing so.

2. Can you now sort the cards into six sets of four cards?. Again discuss in your groups how you can group the cards.





Name: _____

Revision activity

1. Use the information from the boxes to complete the questions

Scientists put living things into groups to make studying them easier.

The two main groups are animals and plants.

We can use keys to help us to identify living things.

a) Why do scientists put living things into groups?

b) What is the main difference between animals and plants?

2. Write true or false next to each statement.

1. _____ Living things are easier to study if they are classified.
2. _____ Classification is the process of grouping things.
3. _____ Geologists are scientists that classify living things.
4. _____ Latin is the language often used by scientists to name living things.
5. _____ Living things can be grouped into five major kingdoms.

3. Discovery Carolus Linnaeus.

In a pair work students can look for Carl Linnaeus Biography reading the article from the Internet.



DISCOVERY

CAROLUS LINNAEUS



Early naturalists tried to devise a system for naming species in a way that everyone could understand, without consideration of their language.

The scheme that biologists use today was devised in the eighteenth century by the Swedish botanist Carolus Linnaeus (1707 - 1778). He used Latin names, and gave all animals and plants a two-part name, such as *Sturnus vulgaris* for the common starling.

He used the two-part name for the same reason that people have surnames and the first names: The surname shows what family they belong to and the first name belongs to the individual. Scientific names for animals and plants work in the same way as the names of people, but the order is reversed, with the "surname" coming first. This surname covers a group of related species, known as "genus" (the plural of genera).

Sturnus is the genus to which all starlings belong, and *vulgaris* completes the name of one particular specie in the genus - the common starling.



Lesson 3

Name: _____

Activity 1

"Everything we think we Know about..." list.

- *Do all plants reproduce in the same way?*
- *Can a flower really be the secret of world domination?*
- *Has a plant got reproductive organs?*
- *How do plants reproduce?*

* Watch the power point "Parts of a flower and their functions" (slides 2 to 10).

Activity 2

In your pairs or threes, read carefully the functions and suit them with the names of the parts of a plant. Using the following patterns.

I think it is the
I think this is the

Ovule	Male reproductive organ that contains pollen grains.
Calyx	Consists of all the petals, which serve to attract pollinators through colour and scent.
Corolla	Receives the pollen from the anther.
Filament	Consists of all the sepals, which protects the flower before it opens
Anther	Female reproductive organ of flowers.
Stigma	Where the ovules are.
Style	A stalk that supports the anther.
Ovary	Pollen moves from a flower to another flower, from the anther of one flower to the stigma of another.
Stamen	Where the pollen is produced.
Pollination	Bottle-shaped organ that contains ovules.



Lesson 4

Name: _____

Activity 1

Get started:

Why do many flowers have brightly coloured petals?

A. True or false? Tick the correct answer.

	True	False
a. Flowers have brightly coloured petals so that humans will pick them.		
b. The sepals were closed to make a case around the flower when it has a bud,		
c. Trees never have flowers.		

B. Anne has taken a tulip flower to pieces and stuck the different parts on a piece of card.



- Help Anne to label each part of the flower with its proper name.
- The flower has male and female parts. Put a letter M besides the Male parts and a letter F besides the Female part.
- Match the parts of the flower to the function (what it is that they do for the flower) by writing the number in the lines before each sentence.

1. stamen	2. Ovary	3. Anther	4. Stigma
-----------	----------	-----------	-----------

- _____ holds the pollen
- _____ where the pollen enters the female part of the flower.
- _____ the stick that holds the anthers in the air.
- _____ where the ovules are stored.

Activity 2

Say this Rhyme:

Roses are red,
Violets are blue,
Everything is colourful
Just like YOU.

Activity 3

TOP TIP Make a set of cards with the name of the plant part on one side and write the function on the other side. Use them to test yourself and you'll soon be an expert.



Lesson 5

Names: _____

Activity 1: A simple flower dissection

Data

Figure 1: Drawing of the flower given.

Color _____ Position _____ Label Sepals and Petals

Figure 2: Flower Pinned Open.

Label: Sepals, Anther, Stamen, Filament, Stigma, Style, Ovary, & Pistil

Table 1: Table of Anther, Filament and Pistil Lengths in mm.

Flower part	# 1	# 2	# 3	Average (mm)
Pistil		none	none	
Anther				
Filament				

Figure 3: Double Stem and Leaf of Pistil and Average Stamen (anther + filament) Length.

Table 2: Summary Data Table of Pistil and Stamen Lengths.

	n	Max	Min	Range	sum	Mean	med
Pistil							
Stamen							



Names: _____

Analysis:

1. Name the female parts of your flower.
2. Name the male parts of your flower.
3. In **your** flower, which was longer?
4. According to our class data table, which had the longer lengths?
5. Was your flower a complete or an incomplete flower?
6. Was your flower releasing pollen? How could you tell?
7. Why would having a longer pistil or stamen be an advantage in pollination?
8. Draw the leaf of the gladiolus, the lily or the tulip. Note the margin and vein pattern, the spotted markings.

Conclusion:

Write 2-3 sentences on what you learned.

A3 card sheet

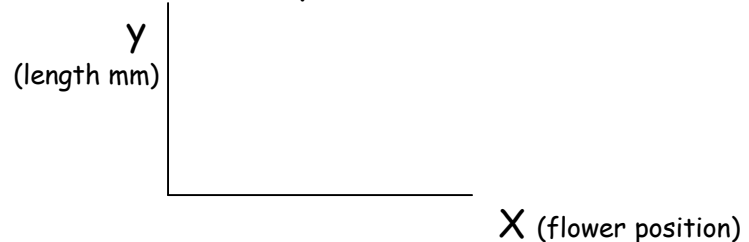
1. Drawing of the flower given Label: Sepals and Petals (fig 1)	2. Flower Pinned Open. (fig 2) Label: Sepals, Anther, Stamen, Filament, Stigma, Style, Ovary, & Pistil
3. Pistil (fig 3)	4. Stamen (fig 3)
Conclusion: a. b. c.	



Extension

Name : _____

Using the data from each lab group in your class, create a line graph of length in mm (y- axis) vs. flower position (x-axis). Using 3 lines, graph the average lengths of the anthers, pistils, and stamens. Do you notice any trends?



1. Write a suitable question for each answer:

a. _____
_____?

It consists of stigma, style and ovary.

b. _____
_____?

The pollen lands on the tip of the female organ in the flower and then starts to grow inside until it reaches the egg equivalent.

c. _____
_____?

Algae, mosses and ferns are the main plant group that don't have flowers and therefore can't make seeds. Instead they produce spores.

d. _____
_____?

Pollination happens first.

e. _____
_____?

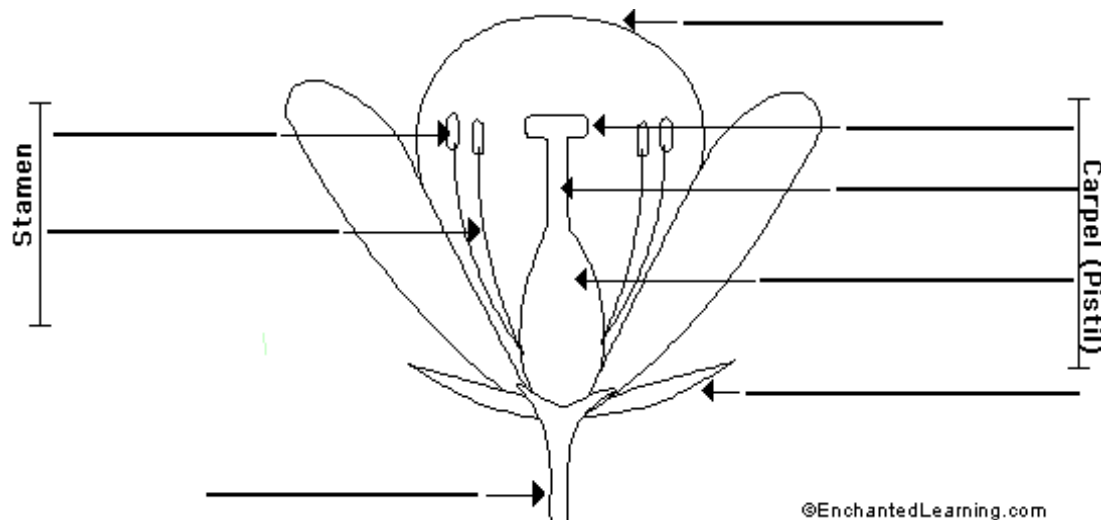
The petals die and fall off.



Name : _____

2. Complete the sentences, by joining a beginning with an ending using the key given and after that, label the parts of the flower.

	Beginnings	Endings	
1	The female sex cell in plants is called	the filament and the anther.	
2	The female sex organ in plants is called	the stigma, style and ovary.	
3	The female sex organ is made up from	the carpel.	
4	The male sex cell in plants is called	the stamen.	
5	The male sex organ in plants is called	the pollen.	
6	The male sex organ is made up from	the ovule.	



3. a. What is the main difference in appearance between sepals and petals?

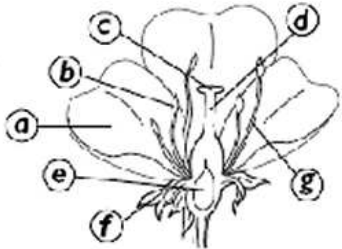

b. What is the function of the sepals?

c. What is the function of the petals?



Name : _____

4. Complete the following cards and review the new knowledge with your partner.

<p>Name the parts of the plant shown here</p> 	<hr/> <hr/> <hr/> <hr/> <hr/>
<p>What do plants anthers do?</p>	<hr/> <hr/> <hr/> <hr/> <hr/>
<p>Why do flowers have petals?</p> 	<hr/> <hr/> <hr/> <hr/> <hr/>
<p>What is the difference between Pollination and fertilisation?</p>	<hr/> <hr/> <hr/> <hr/> <hr/>



Lesson 6

Name: _____

Activity 1 - The pollination song (to the tune of: "This land is your land").

www.mbgnet.net/bioplants/pollination.html

How do plants pollinate? Listen to this song and decide, in your groups, the order of the lines in your verse, write numbers from 1 to 7. Then with the whole group find the correct order of each verse.

- _____ Carry pollen they need.
- _____ Or the wind that's blowing.
- _____ What gets the pollen going
- _____ Different kinds of birds do,
- _____ Butterflies and bees,
- _____ That's what makes pollination work.
- _____ To keep new plants growing?

- _____ And pistils, make the flower whole.
- _____ The sticky pollen.
- _____ What does a plant need
- _____ Reproductive powers,
- _____ Three things give flowers
- _____ To make a new seed?
- _____ The slender stamen,

- _____ Have a sweet perfume
- _____ That birds and insects active
- _____ And they'll spread the pollen as they go.
- _____ Then chances are good
- _____ When brightly coloured flowers
- _____ Find the plants attractive
- _____ And a sugary nectar

- _____ This plant spreads pollen on the wind.
- _____ Or brightly colored,
- _____ With stamens longer
- _____ and the flowers are smaller
- _____ If a flower's not scented,
- _____ The signs are stronger
- _____ in clusters tighter



Lesson 6

Name: _____

Activity 2 - Plant life cycle.

Put a number in each box to show the life cycle of the plant in the correct order.

- a. germination poppy seed poppy plant grows
 seed produced fertilisation pollination
- b. fertilisation germination pollination
 seed produced daisy seed plant grows
- c. plant grows fertilisation pollination
 seed produced germination dandelion seed

Activity 3

Circle the correct words to complete each sentence.

- Some plants are pollinated by insects/cats/slugs and other plants are pollinated by the Sun/wind/snow.
- Plants that are pollinated by the wind have rubbery/feathery "flowers", like grasses. This is so the wind can blow through and collect the pollen/nectar.
- Most seeds need dry/moist conditions to germinate.
- Plants that are germinated/pollinated by insects are often dull/brightly colours, and are scented. This attracts insects.
- Some seeds, such as cleavers are spread by beetles/animals when their tiny hooks catch on fur.
- Some seeds, such as raspberry seeds, are found inside juicy flesh. This is so that flies/birds/snails will eat them and spread the seeds.



Lesson 7

Name: _____

Activity 1 - Pollination

Write numbers, from 1 to 5, in each label according to the correct image in the "Pollination" power point. Use the key words to help you matching the labels to the correct slide.

_____ **Most insect-pollinated flowers are large and brightly coloured so that insects can easily find them.**
If they are small they may be grouped together to look like a large flower.

_____ **Pollination is the carrying of pollen from the **stamens** (male part of the flower) to the **stigma** (on the female part of the flower).**

_____ **As an insect moves from flower to flower, **pollen** stuck to its body has a good chance of **landing on a stigma**.**

_____ **Wind-pollinated plants produce a lot of pollen and this increases the chance of success.**

_____ **Fertilisation takes place when the **pollen** tube and the **ovule** come **together**. After fertilisation the ovule develops into a **seed**.**

Activity 2

How is pollinated by?
..... **Is** pollinated by

Below are the names of six plants. Three are pollinated by insects, and three are pollinated by the wind. Decide which are which and fill in the table below appropriately. Write the name of each plant in the correct column.

- Dandelion**
- Buttercup**
- Sunflower**
- Stinging nettle**
- Willow tree**
- Grass**

Insect-pollinated	Wind-pollinated



Lesson 7

Name: _____

Activity 3

Write the correct words from the box into the spaces provided to complete the sentences.

Fertilisation animal explosion water
 pollination germination wind dispersal

1. When the pollen and ovule join together, it is called _____.
2. Seeds have to get from the plant to the ground to allow new plants to grow. This is done by _____.
3. There are four methods of seed dispersal, they are _____,
 _____, _____, _____.
4. _____ is when a new plant starts to grow from a seed.

Activity 4 - Dandelion Life-cycle mobile.

Make a mobile of the life-cycle of the dandelion. Cut along the lines. Glue each picture on to card with the matching sentence on the back. Cut out. Use cotton thread to join up the mobile in the correct order.

Material needed: scissors, glue, card, cotton thread, colouring pencils.

The flowers die and fall off.	The dandelion seed head or "clock" forms.	The flowers grow.
The seeds are dispersed by the wind	A bee pollinates the flower.	The seed germinates.
The young plant begins to grow.	The seed lands in soil.	

PLANT REPRODUCTION



POLLINATION & FERTILISATION

Lesson 8

Name: _____

Activity 1 - Plants and their adaptations for pollination.

Each student needs three wild plants (these can be from the local area).

1. Identify your plants.
2. Decide if any of them have adaptations for pollination as listed below.
3. Write its name and draw it in the row provided alongside that feature.

<u>Adaptation</u>	<u>Name of the plant 1</u>	<u>Name of the plant 2</u>	<u>Name of the plant 3</u>
Highly coloured.			
Highly scented.			
Bell-shaped.			
Large lower lip.			
By pollen being blown around in the wind.			
Flowers at night.			

How are the plants shown below pollinated?



Dandelion



Foxglove



Cocksfoot Grass



Bird's-foot-trefoil



Bluebell

--	--	--	--	--

Share the results with the whole group and discuss.

Which adaptation is most commonly found and why should this be so?



Lesson 8

Name: _____

Activity 2

Write *birds*, *fur*, *wind*, *water* or *explosion* in the boxes to show how you think each seed is dispersed.



a. dandelion



b. strawberry



c. sycamore



d. coconut



e. mistletoe



f. Himalayan Balsam



g. cleavers



h. elderberries

I think seeds can be dispersed by
I think that can be spread by

Write a sentence for each kinds of seed dispersal:

- a. _____ .
- b. _____ .
- c. _____ .
- d. _____ .
- e. _____ .



Lesson 8

Name: _____

Activity 3

Look at the seeds below and write down your hypothesis about the reasons why seeds that take a long time to fall can be blown a long way from their parent plant.



pea



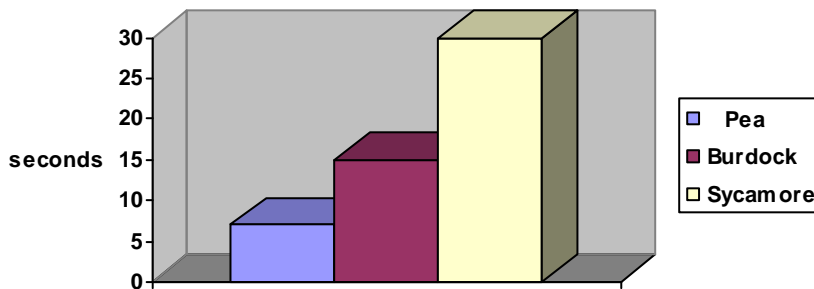
burdock



sycamore

- a. Which seed falls the fastest? _____
- b. Which seed took the longest to fall? _____

This bar chart shows you the time each seed took to fall.



- c. Give **two** reasons why it helps seeds to be a long way from the parent plant:
- 1. _____
- _____
- 2. _____
- _____



Lesson 8

Name: _____

Activity 4

Finding out about how fruits and seeds are dispersed.

Look at these fruits carefully and answer the following questions. Half part of the class is going to investigate the blackberry fruit (a) and the other half the Dandelion seed (b). Join in pairs share and compare your ideas.

Do the fruit or seed have hooks?

Do the fruit or seed have a parachute of hairs?

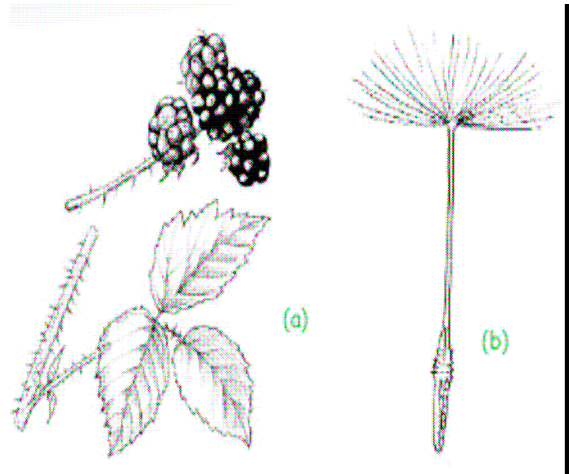
Do the fruit or seed have wings?

What colour is the fruit?

Is the fruit shiny?

Is the fruit or seed juicy?

How do you think the seeds of your plant are spread around?



a) Blackberry

b) Dandelion



Lesson 8

Name: _____

Activity 5

Adaptations of plants for seed dispersal.

Most plants just scatter their seeds, but some have special adaptations for dispersal.

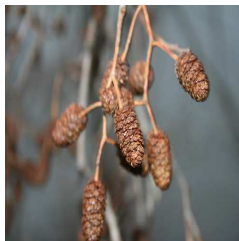
1. Look at the plants below to see if they have special adaptations.
2. If they have, draw or write their names in the correct box below.

Blown by wind	Eaten by birds	Buried or carried by mammals	Bursting and scattered	Carried by water

How are the fruits shown below adapted for seed dispersal?



Sweet chestnut



Alder cones



Blackberries



Cleavers



Pine cone

Compare your answers with a classmate and then think about the following question. Which adaptation for seed dispersal is most commonly found?

**Lesson 8****Name:** _____

Extension activity.

INSECT POLLINATION

Pollination is when a _____ grain is carried from one plant to another.

The pollen is made in the _____, which is the male part of the plant. _____ are attached to the flowers because of their bright _____ and strong smell. The bee lands on the flower and pick up the pollen from the _____. The bee then flies to another plant and leaves the pollen on the _____ of the plant. The stigma is the _____ part of the flower. The pollen grain then goes down the style to fertilise an _____ in the _____. They can then grow into a _____. And the ovary can turn into the _____.

The Missing Words!!!

petals	seed	stigma	female
ovule	fruit	pollen	anther
	insects	ovary	



Lesson 9

Name _____

Activity 1

Watch the Asexual Reproduction Video and complete the text choosing the correct word in brackets:

http://www.blinkx.com/video/plant-reproduction-asexual-reproduction-britannica-com/-8ufFe2tIM0sw_VjBJoUOQ

After winter has thawed, the first flowers of early _____ (spring / summer) appear. But these plants have not grown from seeds, they have reproduced from _____ (rhizomes / bulbs).

Bulbs enable plants to reproduce asexually. That is _____ (with/without) producing gametes. Bulbs are known as perenating organs. They allow plants to survive in _____ (favourable/adverse) conditions and then to grow quickly when the time is right.

The swollen rhizomes of irises have a similar function, but asexual reproduction does not rely solely on perenating organs.

This Liverwort can reproduce asexually via gemmae. Gemmae are small discs of green tissue that grow inside special caps. When mature, they break off from the parent plant often due to the action of rain drops.

They scatter away from the parent plant and will eventually grow into a new gammetophyte plants.

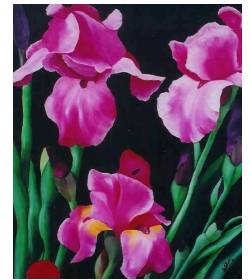
Plants like this bryophyllum can also reproduce asexually. Miniature plantlets develop at the edges of its leaves, in time these will drop off and develop into independent plants.

Mature strawberry plants are able to establish new plantlets on the end of long _____ (rhizomes / runners).

Gardeners are able to cultivate plants asexually via _____ (cuttings/corns). This is possible because of stems cells like these are able to trigger the formation of root cells and will start to grow roots.

The ability of many plants to reproduce asexually helps commercial growers, because it's quicker and more reliable than growing plants from seeds. It also ensures growers that quality is consistent.

Asexual reproduction is all about exploiting a good niche. In such circumstances the value of sexual reproduction, with its results and diversity may actually weaken the dominance of an established group. But, in a changing environment _____ (uniformity / diversity) means survival.





Lesson 9

Name _____

Activity 2

Asexual Reproduction – Growing geraniums (*pelargoniums*) from cuttings.

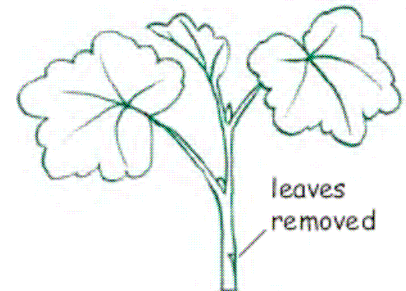
A cutting is any vegetative part of the plant, stem, leaf, or root used to produce a new individual.

Resources for each child:

- A small plastic pot (7 cm diameter) There must be some holes in the bottom of the pots to drain freely.
- Two plastic dishes.
- A polythene bag, large enough to enclose the pot (transparent) or half of a 1.5 litre lemonade bottle.
- A 50:50 mixture of peat-free compost and horticultural sand.
- Plant labels.
- Healthy mature geranium plants from which to take the cuttings.

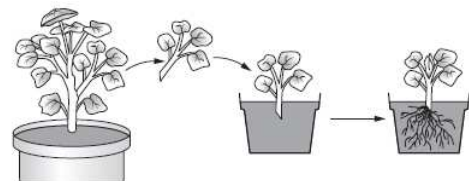
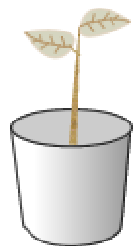
Preparing the pots

1. Label your pot and fill it with the soil mix, pressing down gently. (Remember the soil needs to have plenty of air in it).
2. Place the pot in a dish of water until the surface becomes moist and then leave the pot to drain while the cutting is being taken by the teacher.



Planting the cutting

1. Push your cutting gently into the soil to just below the lowest leaf and firm it in by gently pressing on the soil around it.
2. Cover your cutting with a transparent cover. Half a lemonade bottle is ideal. A polythene bag can be used, but it should be arranged so it is not touching the cutting.
3. Place your cutting in a warm light place, preferably not in full sun. After one week, water your pot by standing it in a dish of water. Repeat after about 10 days by which time the cutting should have rooted and new leaves should have started to develop.





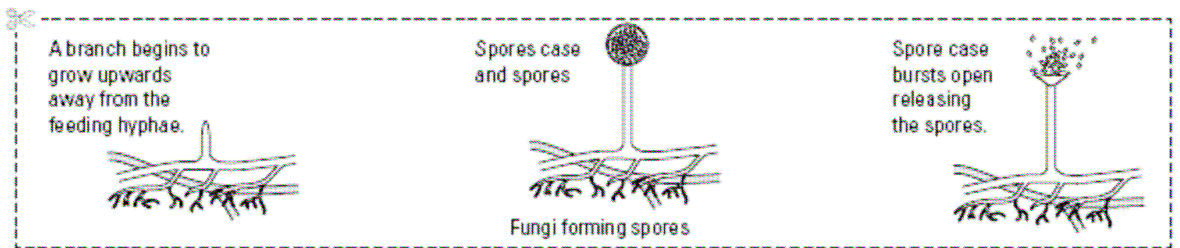
Lesson 10

Name _____

Activity 1

1. Complete the jigsaw puzzle. Cut out all the drawings from below.
2. Colour in each of the drawings.
3. Paste each one under the matching headings.

Runners	Bulbs	Bacteria splitting in two
Cuttings		
Spore formation		





Lesson 10

Name _____

Activity 2

QUIZ

Divide the class into three teams. Give time to each group to read the questions and to talk about which would be the possible answer. After that children have to choose a classmate to be the group's secretary and put the cards on the wall.

Listen to the questions carefully and show the A, B, C or D cards to the answer that you think is the most suitable.

QUESTION 1

Which are the female parts of a flower?

QUESTION 2

How do plants attract insects?

QUESTION 3

Dandelion seeds have fluffy parachutes.....

QUESTION 4

When pollen joins with the egg is this.....?

QUESTION 5

Which of the following are seeds?

QUESTION 6

How are seeds from grass dispersed?

QUESTION 7

Wind-pollinated flowers have:

QUESTION 8

Which part of the flower turns into a seed?

QUESTION 9

Which is the correct order of occurrence in seed formation?

QUESTION 10

Which of the following is NOT considered to be an example of asexual reproduction?

QUESTION 11

Which of these plants requires water to reproduce?

QUESTION 12

Which words describe the basic structure of vascular plants?



Extension activity

Name _____

Break the Code Puzzle

The following sets of numbers are sentences in code. Each number represents a letter of the alphabet. You can break the code if you can figure out what letter each number represents. One word in each sentence is done. Use these words as clues to break the code.

1. S O M E _ _ _ _ _
 8 3 12 1 10 13 2 11 7 8 9 1 10 9 3 19 5 20 1 2 8 1 26 5 2 13 13 6

2. I N G R A F T I N G _ _ _ _ _
 4 11 17 9 2 18 7 4 11 17 2 11 1 24 10 13 2 11 7 4 8 12 2 19 1 21 6

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 15 3 4 11 4 11 17 17 3 3 19 10 2 9 7 8 3 18 3 11 1 10 13 2 11 7

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 7 3 17 3 3 19 10 2 9 7 8 3 18 2 11 3 7 16 1 9

3. B U L B S _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 21 5 13 21 8 8 5 20 16 2 8 3 11 4 3 11 8 2 9 1 12 3 8 7 13 6

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 12 2 19 1 3 18 7 4 17 16 7 13 6 10 2 20 14 1 19 13 1 2 25 1 8

4. A F R I C A N _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 2 18 9 4 20 2 11 25 4 3 13 1 7 8 20 2 11 17 9 3 24 11 1 24

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 10 13 2 11 7 8 18 9 3 12 7 16 1 4 9 13 1 2 25 1 8

5. S T R A W B E R R Y _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 8 7 9 2 24 21 1 9 9 6 10 13 2 11 7 8 5 8 1 9 5 11 11 1 9 8 7 3

6. T H I C K _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 2 7 16 4 20 14 8 7 1 12 24 4 7 16 21 5 19 8 4 8 2 7 5 21 1 9



Extension activity

Name _____

Figure 1 shows four plants that reproduce without seeds. Look at it and complete the table below.

Diagram	Plant part used in reproduction.	Plant that reproduces this way.	How does reproduction occur?
A			
B			
C			
D			

Figure 1.

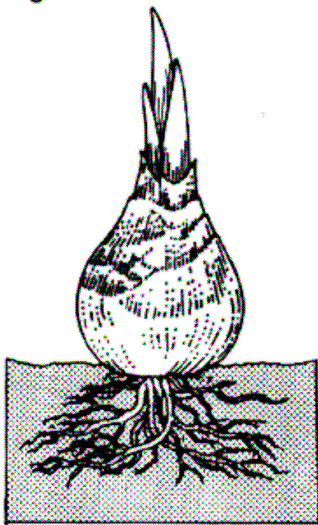


diagram A

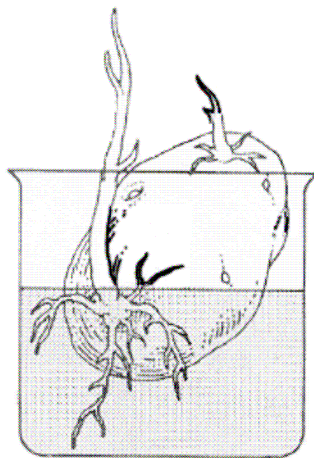


diagram B

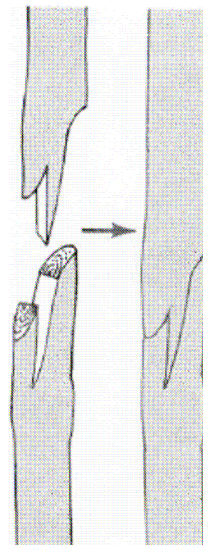


diagram C

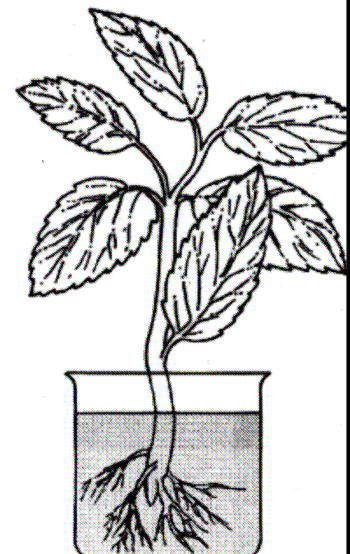


diagram D

Without plants, many other living things, including us, could not exist.



Extension activity **Name** _____

Organise the class into four groups. Two groups are going to look for the advantages and disadvantages of sexual reproduction (A, B) and the other two groups look for the disadvantages and advantages of asexual reproduction (C,D). They can use some web pages to search for information.

Discuss the advantages and disadvantages associated with each form of reproduction and write your ideas down. After that, get pupils involved in new groups (A,C) and (B,D) to share their knowledge.

Pupils have to be able to communicate the facts they know to the others.

SEXUAL REPRODUCTION	
ADVANTAGES	DISADVANTAGES
.....
.....
.....
.....
.....

ASEXUAL REPRODUCTION	
ADVANTAGES	DISADVANTAGES
.....
.....
.....
.....
.....