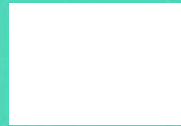




Science

Living Things and Their Habitats

Grouping Living Things



Aim

- I can group living things in a range of ways.
- I can use a range of methods to sort living things.

Success Criteria

- I can sort living things into groups.
- I can generate criteria to sort living things.
- I can sort living things into a Venn diagram.
- I can sort living things into a Carroll diagram.



Life Processes

What do all these things have in common?



Life Processes

All of these images are of living things. Sometimes we call them '**organisms**'.

Even though they might be very different from each other, all of these organisms share certain characteristics. All living things do certain things to stay alive. These are called **life processes**.

All animals, including humans, do these things. Plants do too, although they do them in different ways.

We can remember life processes by thinking about Mrs Gren.



Life Processes

Movement

Respiration

Sensitivity

Growth

Reproduction

Excretion

Nutrition

MRS GREN



Life Processes

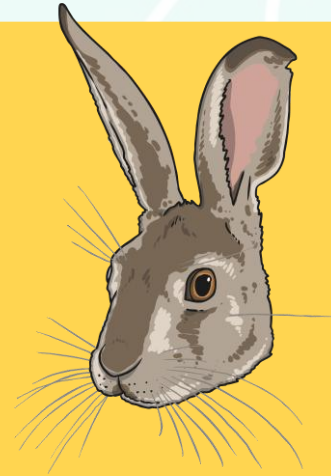
Movement

All living things move.

Animals
move around
to get from
place to
place.



Plants grow
and turn
towards the
light.



A hare runs to
escape from
danger.



A sunflower
moves to turn
its face towards
the sun.

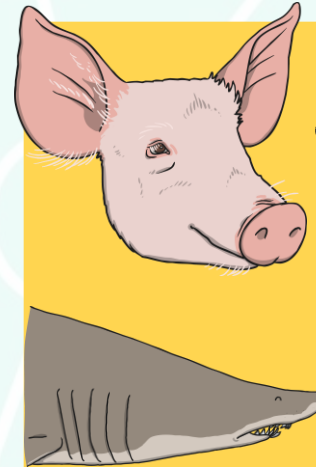


Life Processes

Respiration

All living things respire.

Plants and animals both use oxygen gas from the air to turn their food into energy. This is called **respiration**.



Land animals breathe oxygen through their mouths or noses. Sea creatures breathe oxygen dissolved in the water through their gills. Both types of creature then use this oxygen in their body for **respiration**.

Plants both respire and photosynthesise. While photosynthesis happens when the plant is in light, plants respire by taking in oxygen and giving out carbon dioxide during darkness.

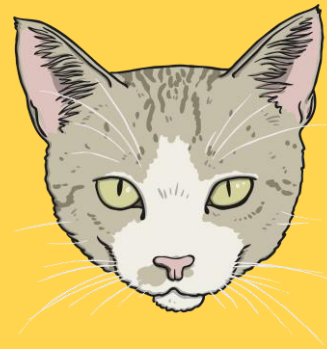


Life Processes

Sensitivity

All living things are sensitive.

Every living thing can detect changes in their surroundings.



Animals use their senses to see, hear, taste, touch and smell the world around them.



Plants can also detect changes in the environment. This mimosa plant curls up when you touch it!



Life Processes

Growth

All living things grow.

Animals grow from babies to adults.

Seeds grow into plants.



This ocean mola started life as an egg not much bigger than a full stop. It will grow to weigh about 1000 kg - this is the same size as a large bull!




Bamboo can grow up to 3cm every hour.

Life Processes

Reproduction

All living things reproduce.



Animals have young.

Plants produce seeds from which more plants grow.



Animals lay eggs or give birth to live young.



Most plants reproduce by forming seeds.



Life Processes

Excretion

All living things excrete.

Waste products are removed from the body.

Both plants and animals have to get rid of excess gas and water.



Animals excrete waste through urine and faeces.



Leftover gases and water leave plants from their leaves.

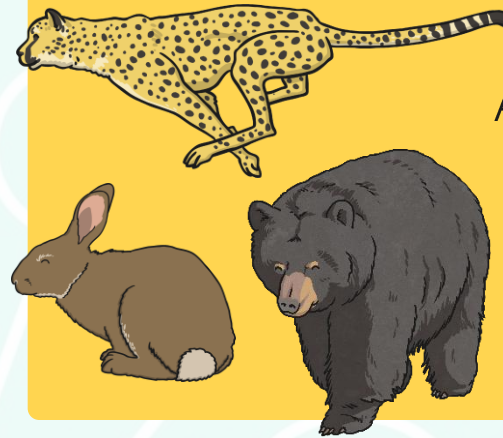
Life Processes

Nutrition

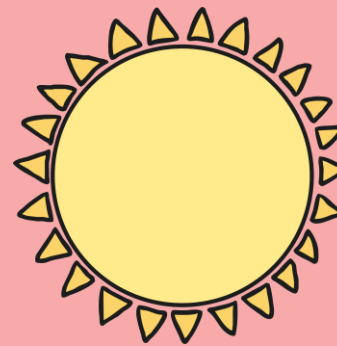
All living things need nutrition.

Green plants make their own food using sunlight.

Food is eaten to provide energy to live.



Animals may be carnivores, herbivores or omnivores.



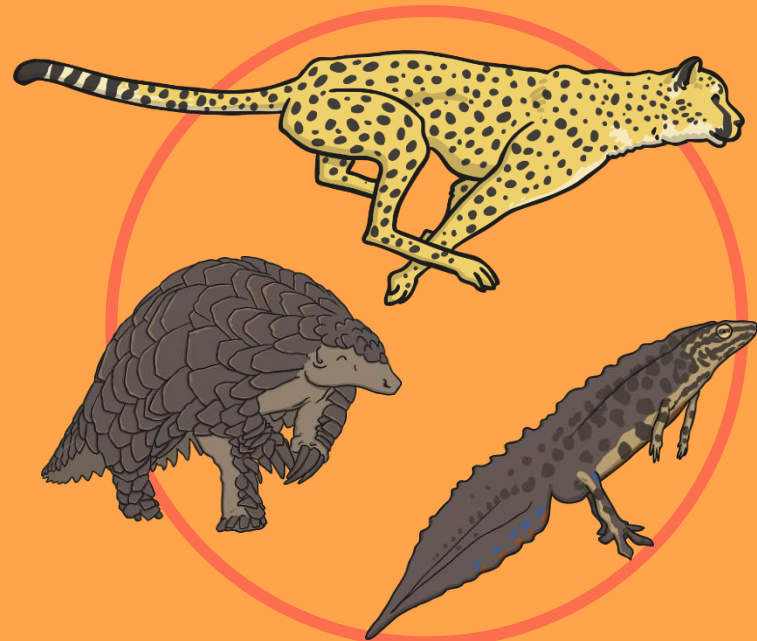
Green plants make their own food using the energy from the sun.



Life Processes

All living organisms share these characteristics. This is how we know they are alive!

Living things have lots of other similarities, and many differences too. We can use these similarities and differences to sort the living things into groups.



Grouping Living Things



With a partner, think of a way we could sort these organisms into two groups.



Grouping Living Things



Here the organisms have been sorted into two groups. We have used a diagram to represent these groups.

Can an organism be in both groups at the same time?



plants



animals



Grouping Living Things



Here, an organism cannot be both an animal and a plant, so it can not be in both groups at the same time.



plants



animals



Grouping Living Things



This is called a Venn Diagram. Where does a cactus go in this diagram? How about a polar bear?



How is this diagram different to the previous diagram?

Grouping Living Things



This is a Carroll Diagram. Can you name an animal to go in each section of this diagram?

| | Lives in water | Lives on land |
|--------------------|-------------------|-----------------|
| Has legs | Crab Sea otter | Horse Spider |
| Does not have legs | Whale Fish | Snake Worm |

Could you put a plant in this diagram? What about a dandelion? Or seaweed?



Criteria



We have asked some questions to sort our living things into groups so far.
We sometimes call these criteria, which means a rule that we use to decide something.

Plant or animal.

Lives in the desert or does not live in the desert.

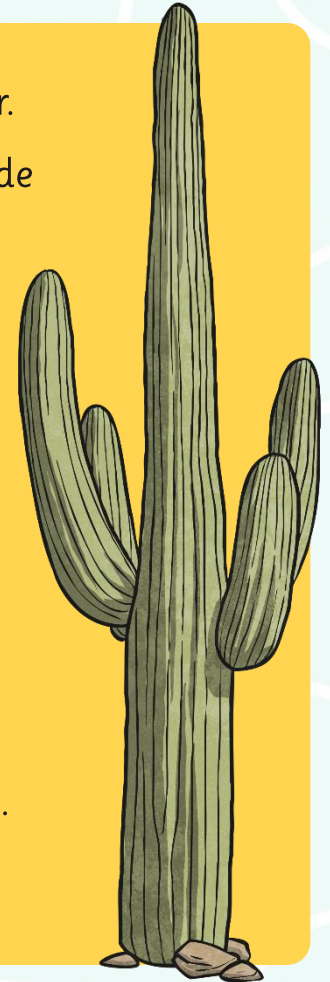
Has legs or does not have legs.

Lives on the land or lives in the water.

Today, you are going to be sorting animals.

With a partner, think of different groups that you could sort animals into.

Think of as many different groups as you can.



Criteria




What
criteria did
you think
of?



Grouping Animals



You are going to group animals in a variety of ways, using some criteria that have been chosen for you, and some that you choose yourself.

 **Grouping Animals**

Cut out the animals and sort them into the groups below.

| | lays eggs | does not lay eggs |
|-----------|-----------|-------------------|
| birds | | |
| not birds | | |



Sorting into Three Groups

Venn diagrams can be used to sort lots of groups of animals.

Where would a turtle go on this diagram?

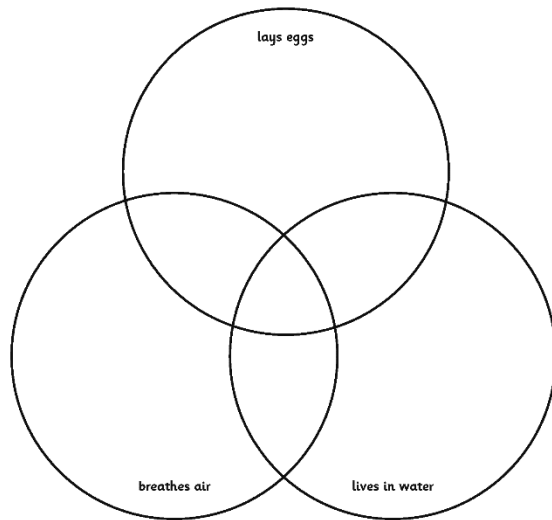
Where would a cat go?















Sorting into Three Groups



Grouping Animals Extension



| | | |
|---|--|---|
| whale  Lives in water Gives birth Breathes air | salmon  Lives in water Lays eggs Breathes through gills | brown crab  Lives in water Lays eggs Breathes through gills |
| dolphin  Lives in water Gives birth Breathes air | snake  Lives on land Lays eggs Breathes air | crocodile  Lives in water Lays egg Breathes air |
| badger  Lives on land Gives birth Breathes air | chameleon  Lives on land Lays eggs Breathes air | giant tortoise  Lives on land Lays eggs Breathes air |
| sea turtle  Lives in water Lays eggs Breathes air | octopus  Lives in water Lays eggs Breathes through gills | polar bear  Lives on land Gives birth Breathes air |



Grouping Animals Quiz



Grouping Animals Quiz

Use your Grouping Animals Extension Activity Sheet to answer the following questions.

1. Which animals lay eggs and breathe air?

2. How many animals lay eggs, live in water and breathe air?



3. Name the animals that live on land.

4. How many animals live in water and breathe air?



5. Name the animals that do not breathe air.

6. Name three other animals that would go in the same group as the polar bear?



7. What kind of animal are the organisms that breathe air, live in water and do not lay eggs?

Reptiles Fish Mammals



8. Bonus question: Give a reason why there is an empty group.



Grouping Animals Quiz



1. Which animals lay eggs and breathe air?

snake

giant tortoise

chameleon

crocodile

sea turtle



Grouping Animals Quiz



5. Name the animals that do not breathe air.

brown crab

salmon

octopus

shark



Grouping Animals Quiz



Well Done!



Aim

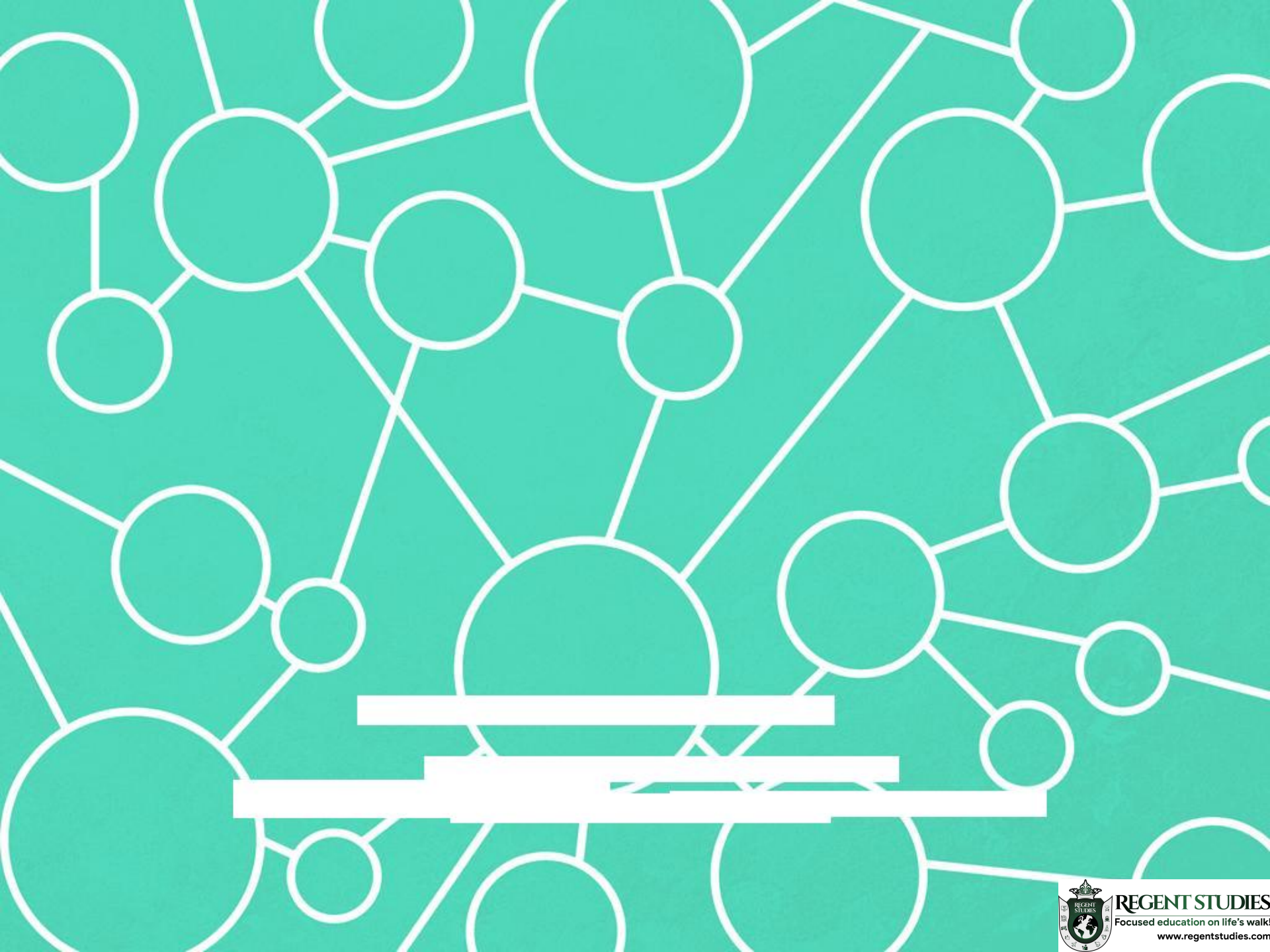


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