Grouping Living Things

Lesson 1 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.

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Life Processes

What do all these things have in common?

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Life Processes

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

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.

The video gives you a quick introduction to living things.

https://www.youtube.com/watch?v=X9qGI4Ju8ak

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Life Processes

All living things must do all of these life processes

Movement
Respiration
Sensitivity

Growth
Reproduction
Excretion
Nutrition

MRS GREN

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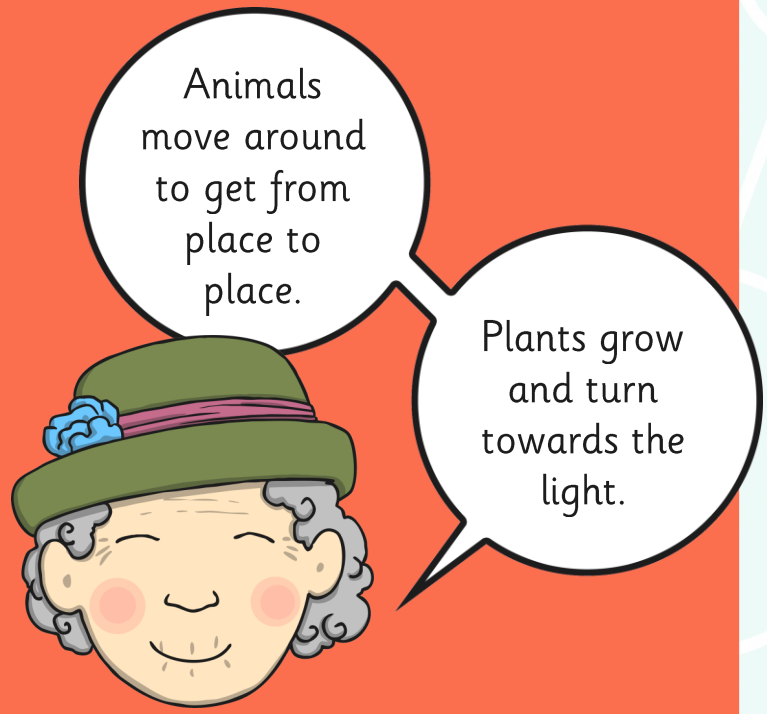
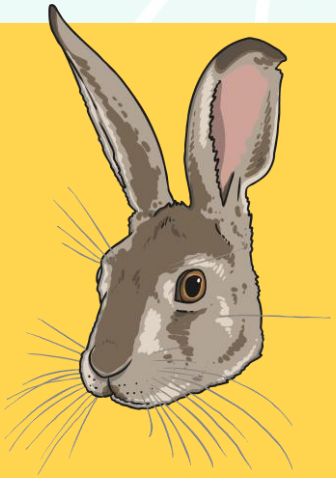
Life Processes

Movement

All living things move.





A hare runs to escape from danger.

A sunflower moves to turn its face towards the sun.

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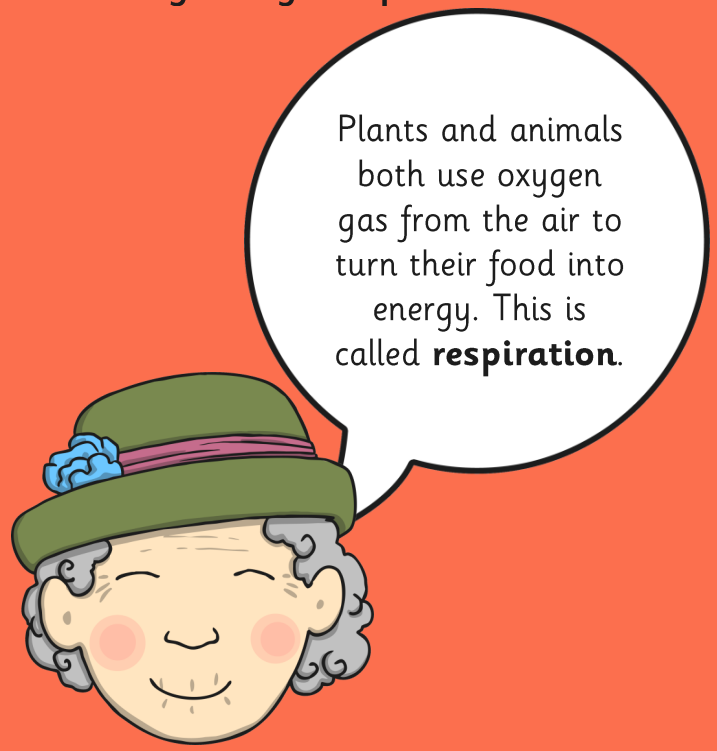
Life Processes

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.

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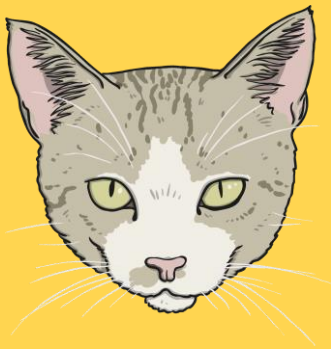
Life Processes

Sensitivity

All living things are sensitive.



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!

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Life Processes

Growth

All living things grow.

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.

Photo courtesy of sandipb (@flickr.com) - granted under creative commons licence - attribution

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Life Processes

Reproduction

All living things reproduce.

Animals lay eggs or give birth to live young.

Most plants reproduce by forming seeds.

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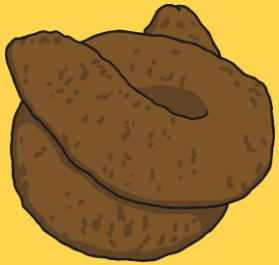
Life Processes

Excretion

All living things excrete.



Animals excrete waste through urine and faeces.

Leftover gases and water leave plants from their leaves.

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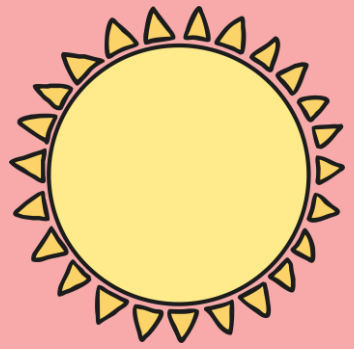
Life Processes

Nutrition

All living things need nutrition.

Animals may be carnivores, herbivores or omnivores.



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

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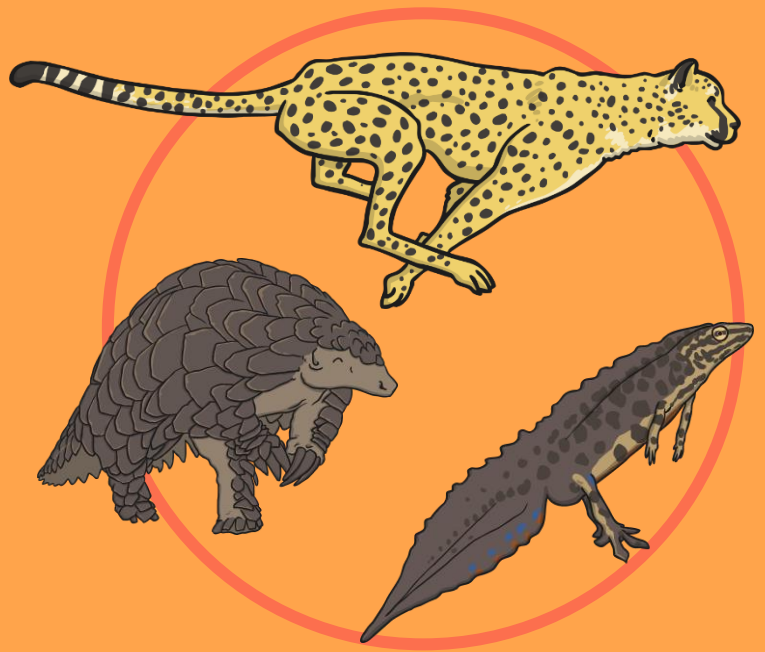
Life Processes

This video explains the processes of Mrs Gren again if you need more information

https://sites.google.com/panmurebridge.school.nz/ls12018/inquiry/whats-living/mrs-gren

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.



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Grouping Living Things

Can you think of a way we could sort these organisms into two groups?

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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? Can they be a **plant** and an **animal?**

plants

animals

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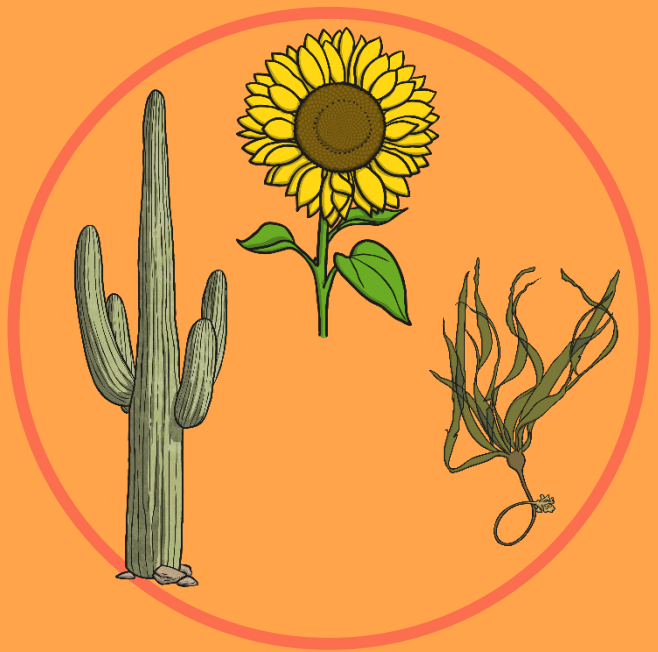
Grouping Living Things

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



plants

animals

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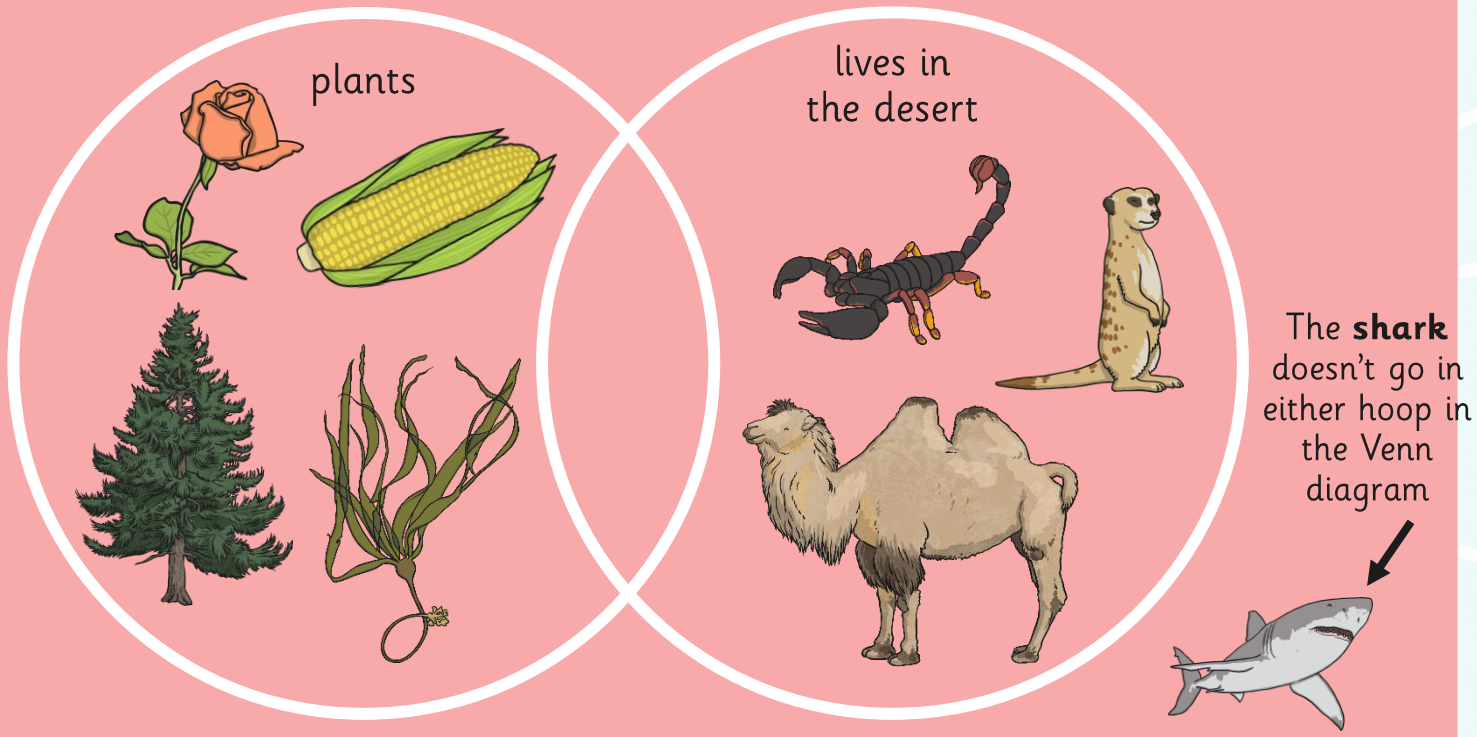
Grouping Living Things

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?

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Grouping Living Things

This is a **Carroll Diagram**. Can you name another 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 **Seaweed**	Snake Worm **Dandelion**

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

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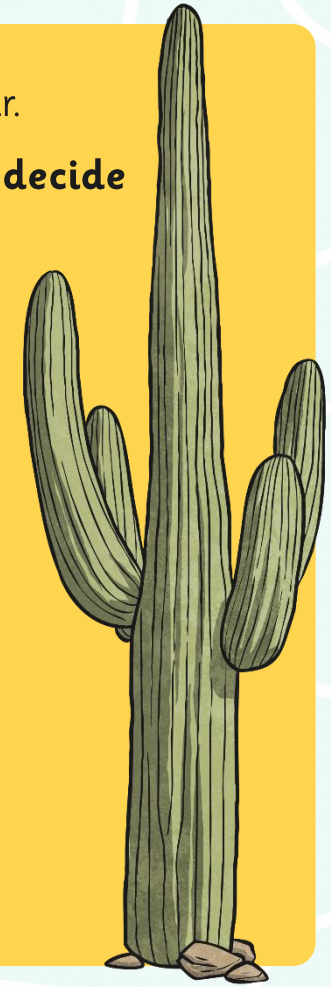
Criteria – 'the rule that we have used.'

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.**

They are often opposite, but not always – For example:



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.

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Criteria

What criteria or rules for sorting can you think of?

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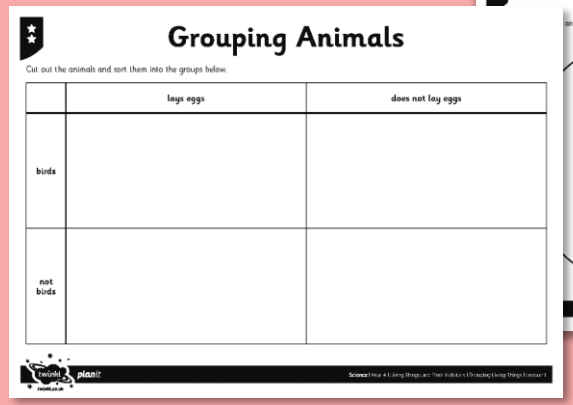
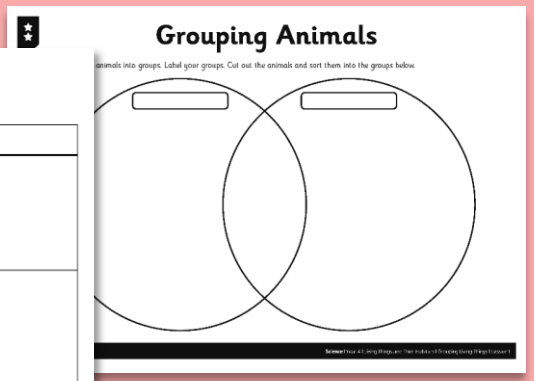
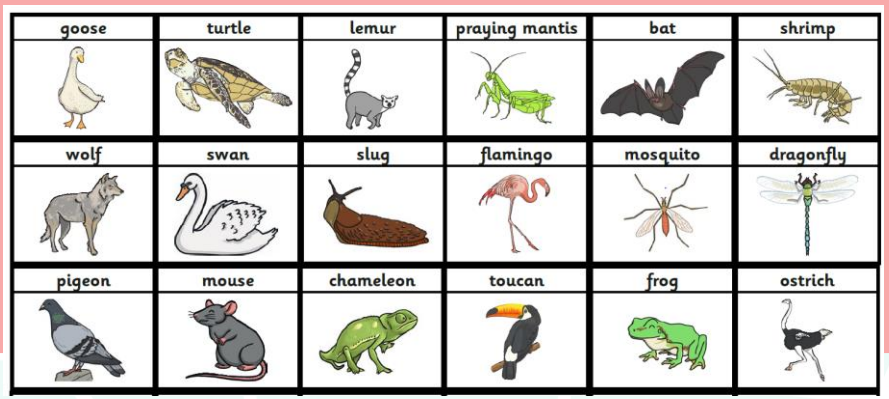
Grouping Animals Activity

You are going to group animals using Venn diagrams and Carroll diagrams. You can use the **criteria** (or rules) that have been chosen for you, or some that you choose yourself. Or you can do both.





You can also cut and stick the pictures, draw your own or just write the names of the organisms.



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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?

A cat does not fit any of the **criteria**.

A turtle lays eggs, it cannot fly and doesn't have 2 legs. It fits 1 **criteria**.

Lays eggs

snake

penguin

dragonfly

butterfly

duck

parrot

kangaroo

human

bat

Has two legs

Can fly

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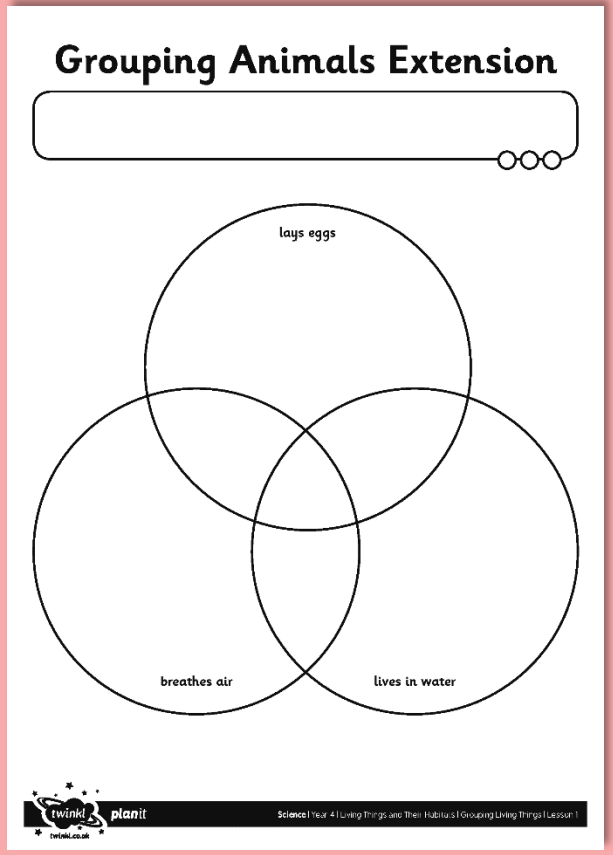
Extension activity - Sorting into Three Groups

Use the information for the animals to decide where to place them in the Venn diagram.
There are 3 different criteria, do they fit into 1, 2, 3 or none of the criteria?

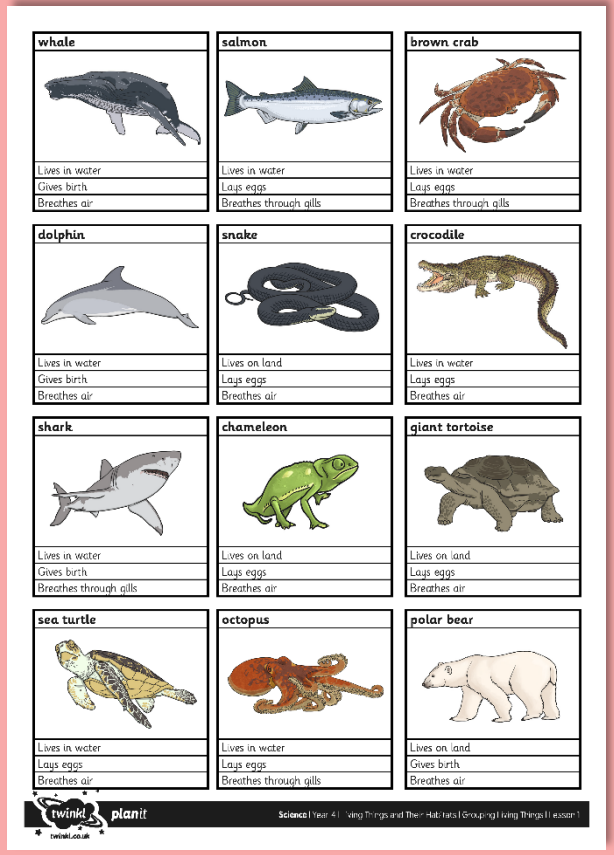


Grouping Animals Extension

lays eggs

breathes air

lives in water



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

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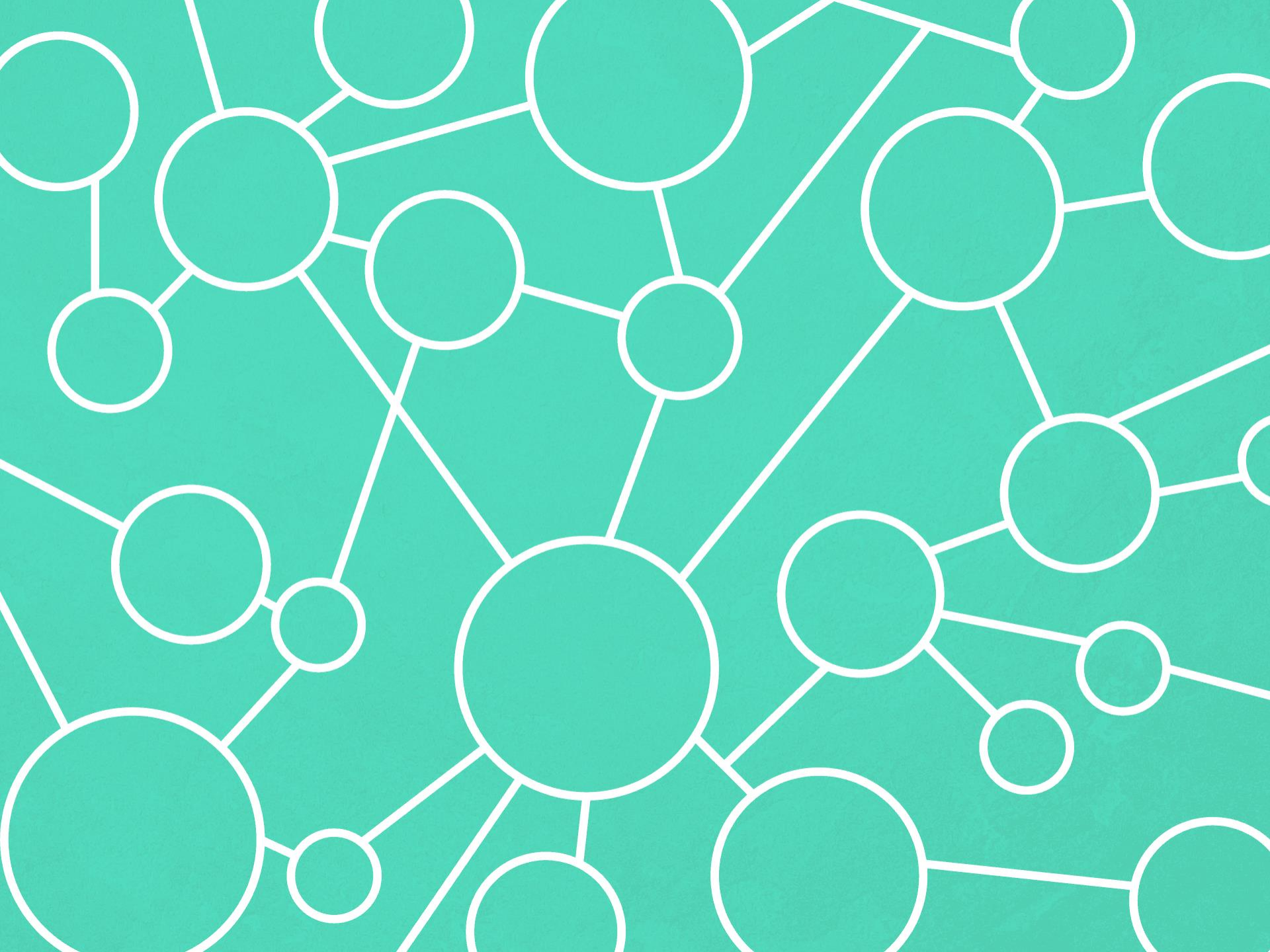
Watch the link and pause it at 3 minutes 20 seconds.

Challenge question – Why is Mrs Gren in the video incorrect? Watch the rest of the video to see what Chris Peckham tells her.

https://www.youtube.com/watch?app=desktop&v=Us3WOzgSWLM

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