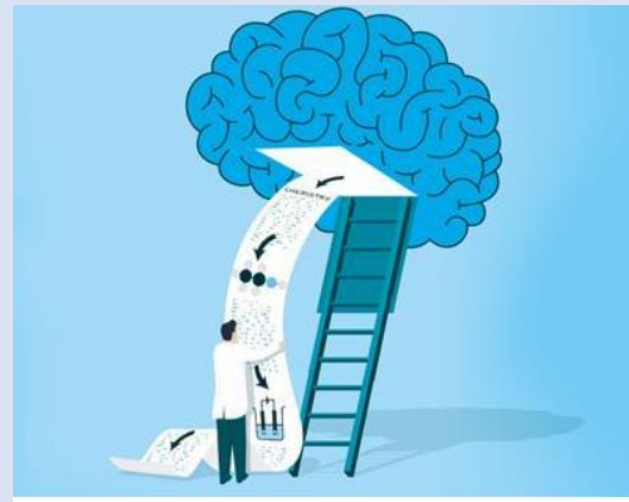


Revision for AQA Entry Level Science exam

Biology: Inheritance, Environment and Evolution



Note to parents and students:

- Please click/tap on [blue underlined](#) texts on this document as those are links to interactive games
- Revise little (could be only 5 minutes) and often to store information in long- term memory



Consumer or Producer Game

<https://wordwall.net/resource/35748047/science/producers-consumers-and-decomposers>



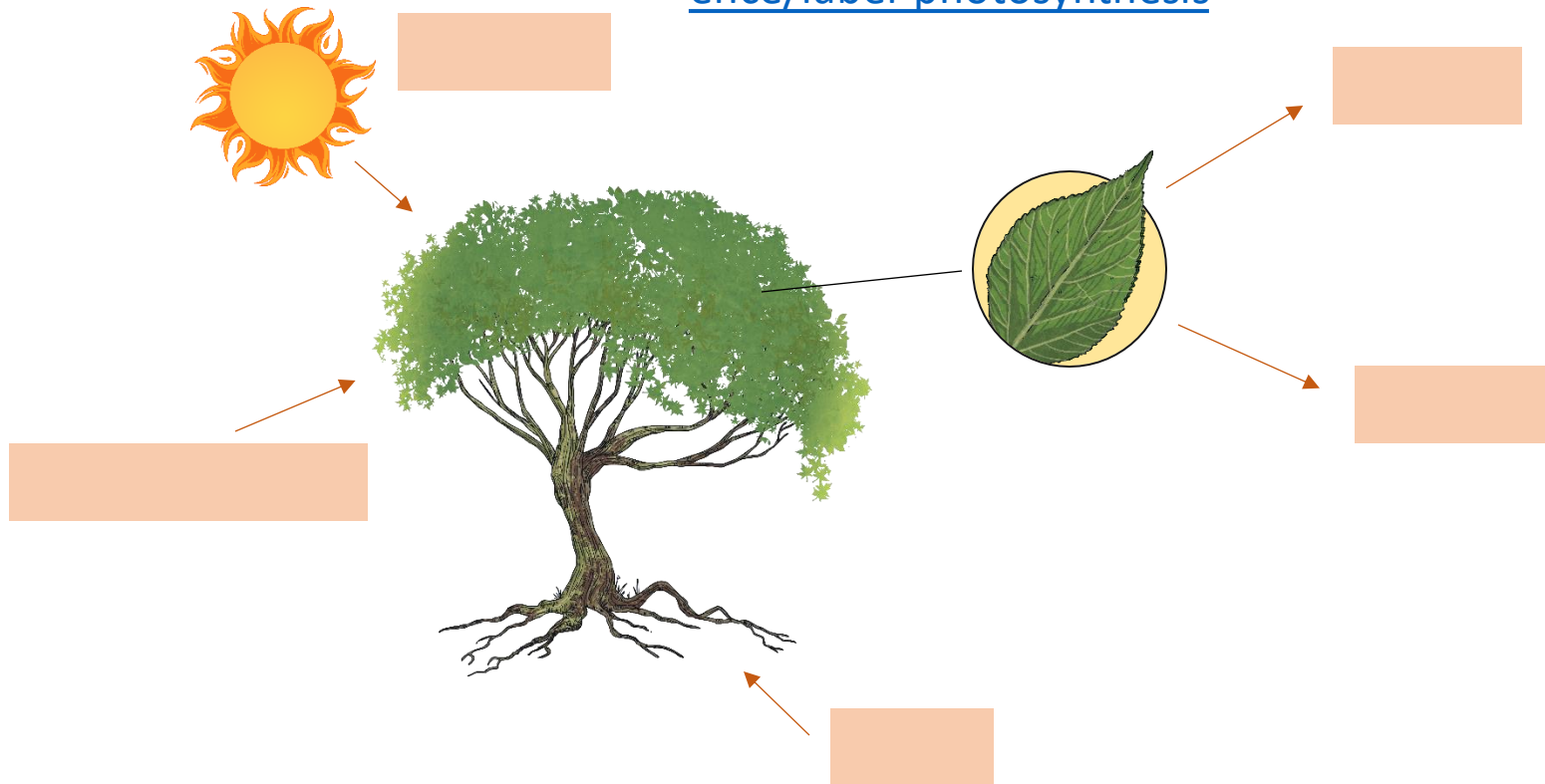
Producers

Consumers

Decomposers

Can You Label the reactants and products of Photosynthesis?

<https://wordwall.net/resource/6161495/science/label-photosynthesis>



sunlight

water

oxygen

carbon dioxide

glucose

Consumer or Producer Game

<https://wordwall.net/resource/35748047/science/producers-consumers-and-decomposers>



Producers

Consumers

Decomposers

QUICK RECAP: Photosynthesis

Plants and algae make their own food through the process of **photosynthesis**. They take in carbon dioxide and **water** and convert it to **glucose**. Oxygen is also made as a **waste** product. **Light** from the sun is required to make this chemical reaction happen.

Light glucose

waste water

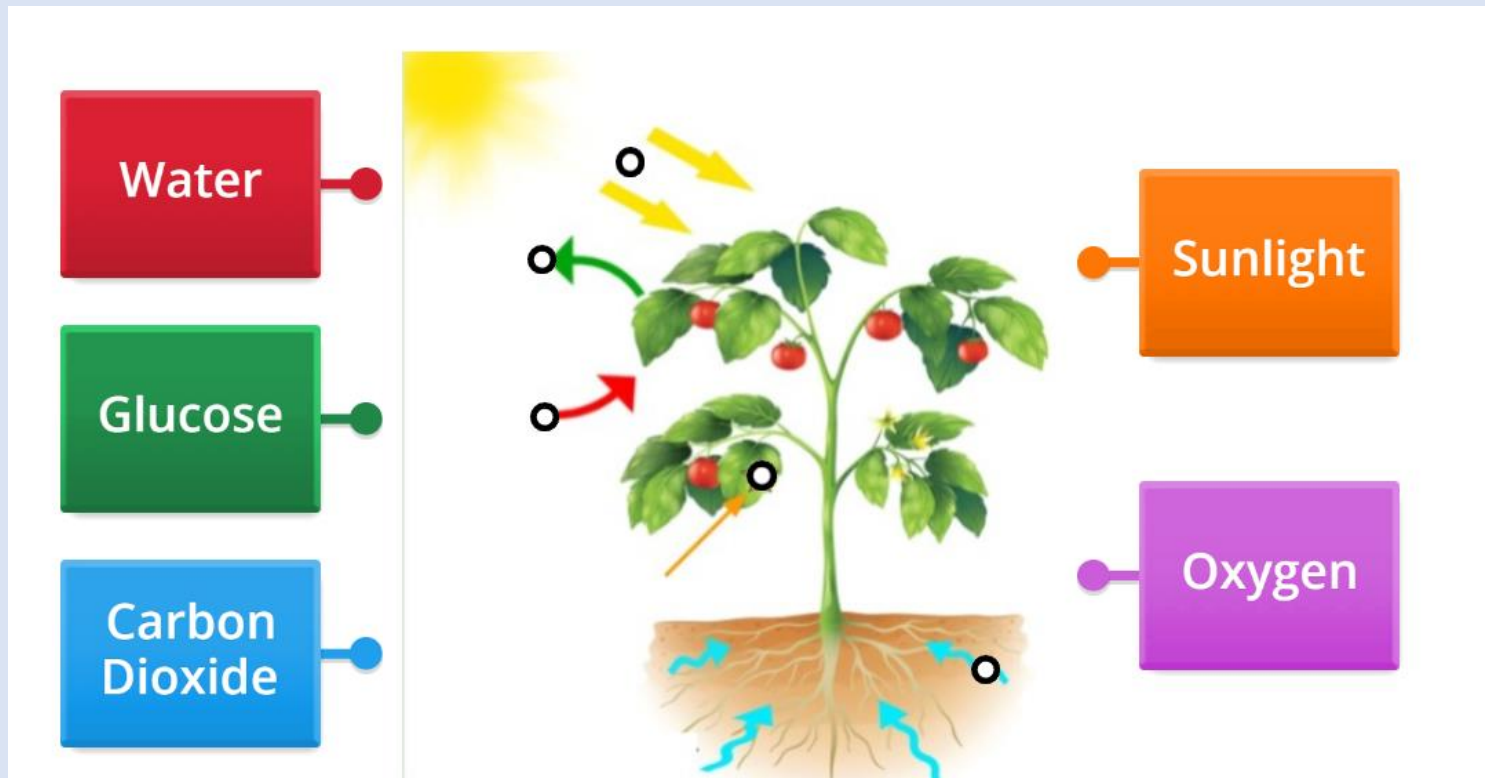
photosynthesis



Challenge: Write the word equation for photosynthesis.

Photosynthesis Game:

- <https://wordwall.net/resource/6161495/science/label-photosynthesis>



Key vocabulary game:

- <https://wordwall.net/resource/11653678/science/producers-consumers-and-food-webs-vocabulary>



all living and nonliving things and all their interactions in an area

An organism that gets energy by eating only other animals

an organism that gets energy from eating plants or animals

an organism that gets energy by eating both plants and other animals

an interconnected set of food chains

an organism that uses sunlight to make its own food for energy

an organism that gets energy by eating only plants

the process where plants use sunlight, water, and carbon dioxide to produce sugar and release oxygen

Adaptations

Animals are **ADAPTED** to their habitats. This means that they are suited in special ways to the place that they live and to the way they live.

They need to adapt to:

- Obtain food
- Keep safe
- Build homes
- Withstand weather
- Find mates



Polar Bear

POLAR BEARS HAVE
AN EXCELLENT
SENSE OF SMELL.

THIS ADAPTATION
HELPS THEM FIND
THEIR PREY.

A POLAR BEAR HAS THICK
WHITE FUR.

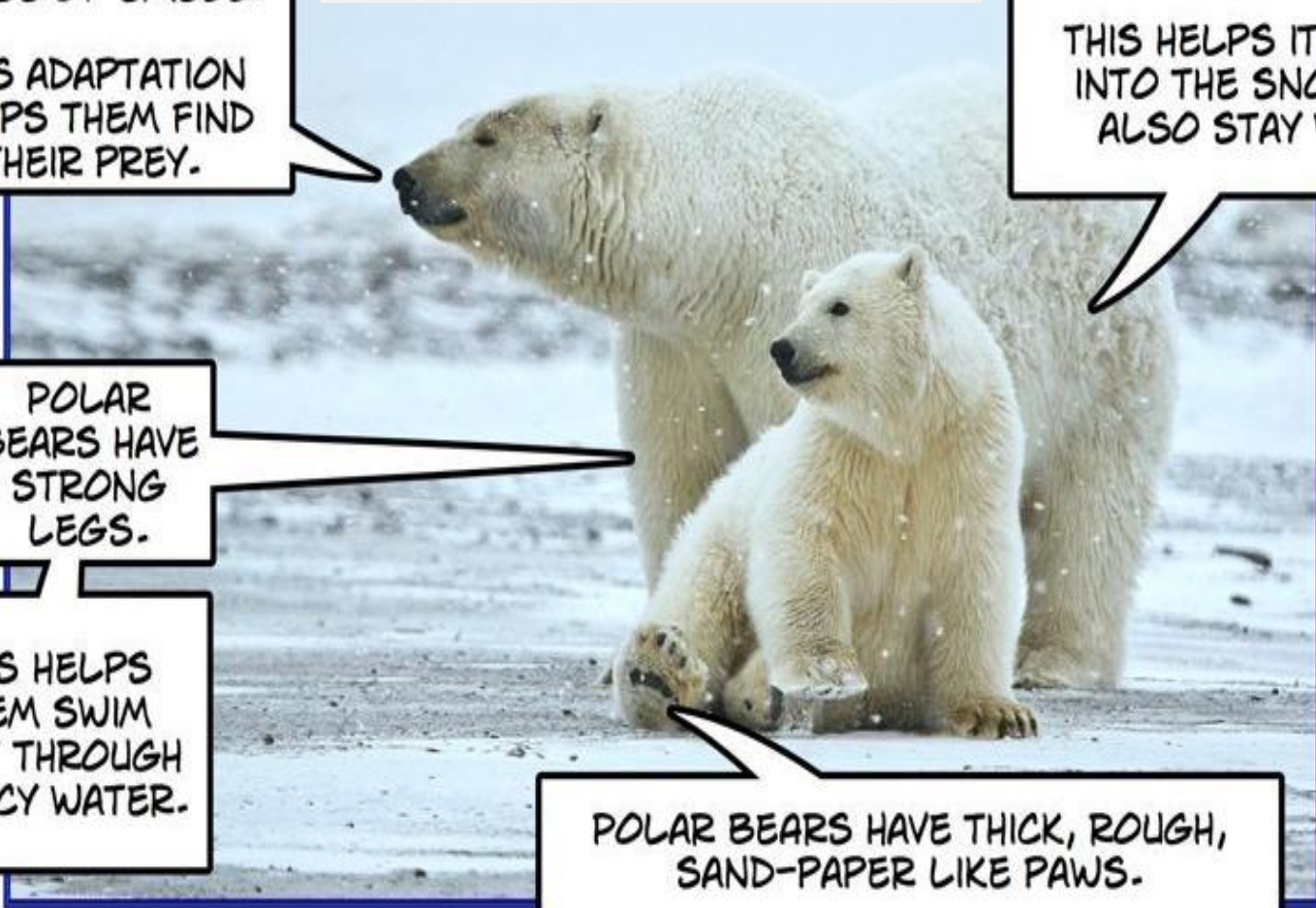
THIS HELPS IT BLEND
INTO THE SNOW AND
ALSO STAY WARM

POLAR
BEARS HAVE
STRONG
LEGS.

THIS HELPS
THEM SWIM
FAST THROUGH
THE ICY WATER.

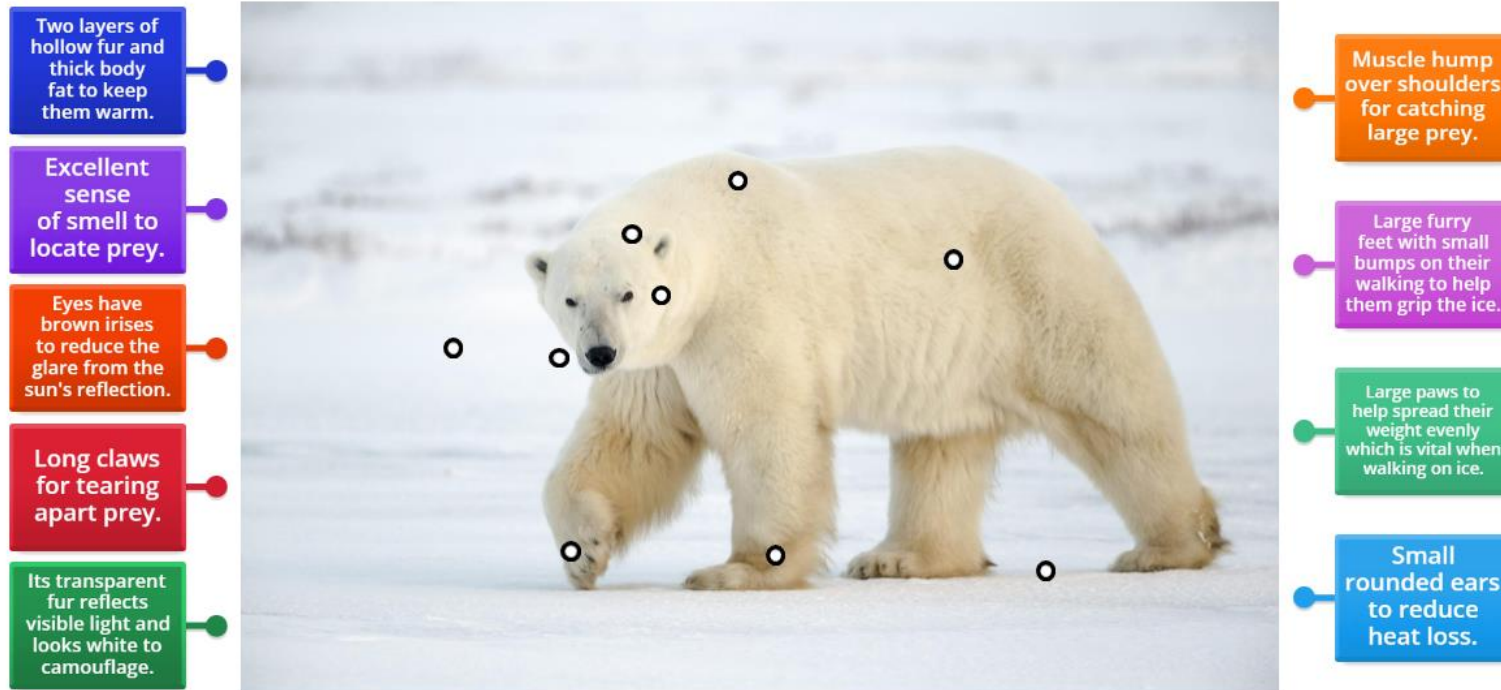
POLAR BEARS HAVE THICK, ROUGH,
SAND-PAPER LIKE PAWS.

THIS HELPS THEM GRIP THE SLIPPERY
ICE AND GET GOOD TRACTION.



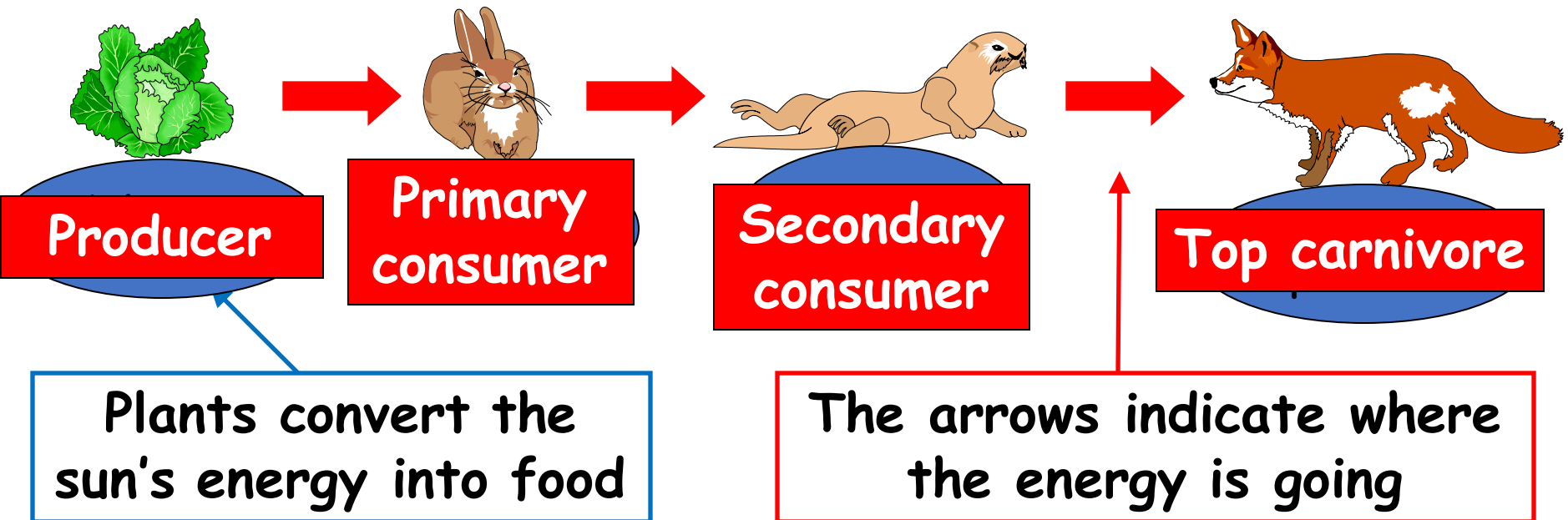
Polar Bear adaptation game:

<https://wordwall.net/resource/2971571/science/a-polar-bears-adaptation-year-6>



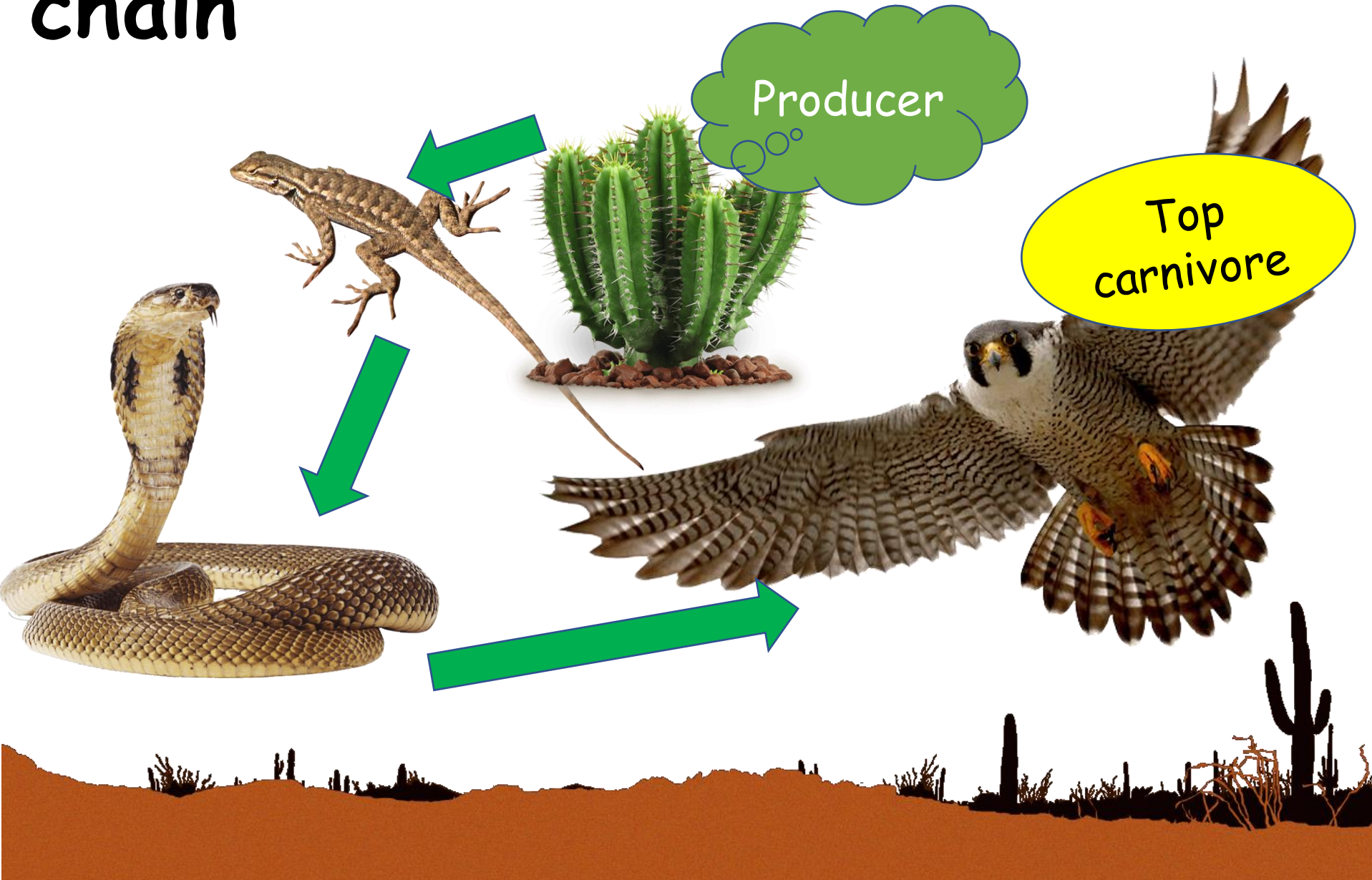
A **food chain** is a way of showing what eats what in a community.

It also shows where the energy goes in a food chain (i.e. "what gets eaten by what")



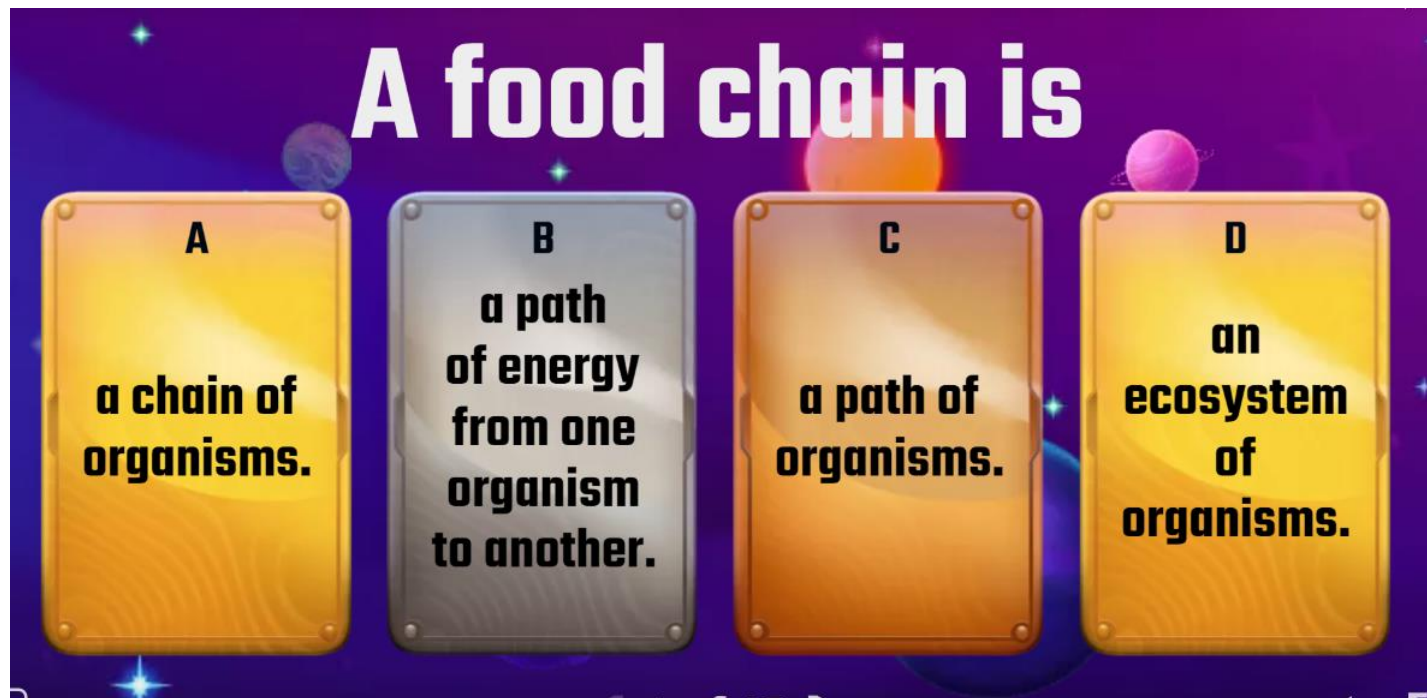
Food chains always start with a plant which contains a store of chemical energy from the sun

A desert food chain



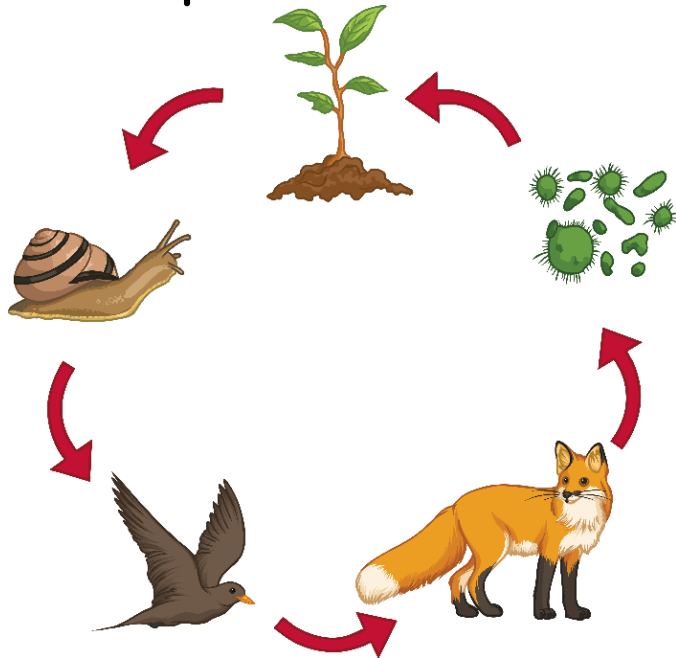
Food Chain quiz:

- <https://wordwall.net/resource/22806430/biology/food-chain>



The Cycle of Life (and Death!)

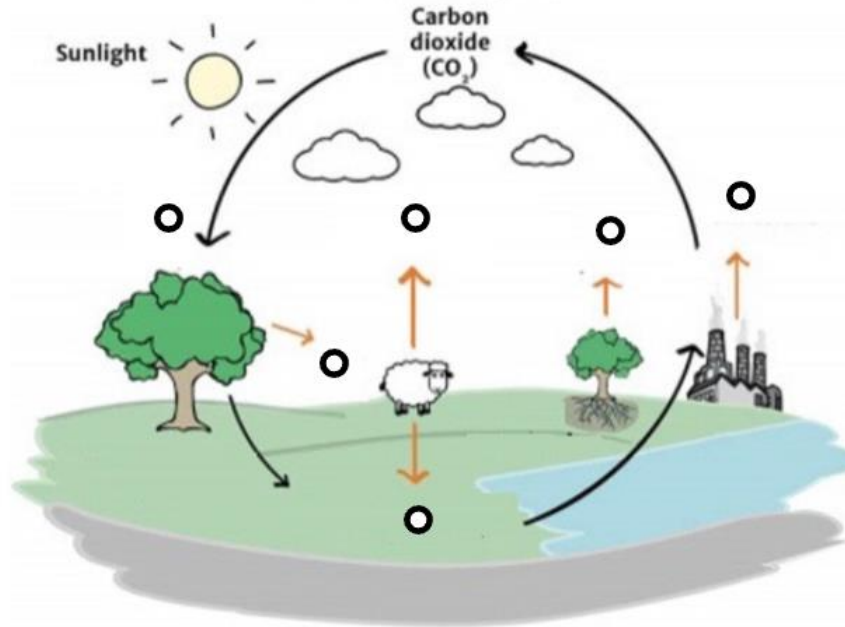
When plants and animals die, **microorganisms** break down their bodies. This is called decay. This releases the materials they contain such as carbon, hydrogen, nitrogen and oxygen. Carbon dioxide goes back into the atmosphere.



These materials are returned to the soil and air to be **recycled** where they can be used again by other plants.

<https://wordwall.net/resource/9761044/science/carbon-cycle-diagram>

Carbon Cycle



Burning fossil fuels releases carbon into atmosphere-combustion

Animal cellular respiration releases CO_2

Plant cellular respiration releases CO_2

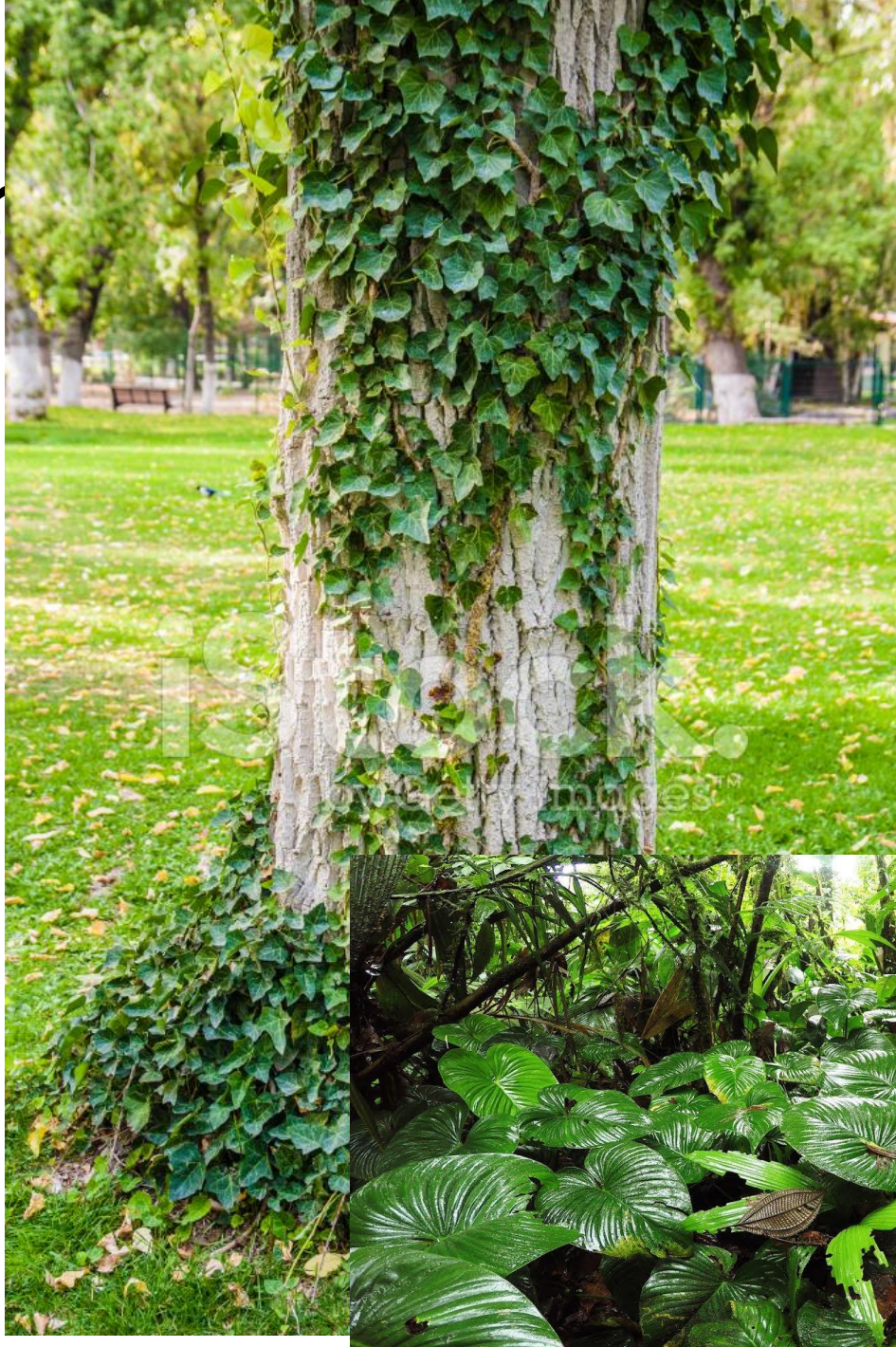
Animals eat plants to get carbon in glucose (sugar)

Plants take in CO_2 for photosynthesis

Decomposition releases CO_2 into soil and atmosphere

Plants compete
for light

Plants compete for the
light
of the light
plants to
s.



Plants compete for....

Nutrients and water

Plants produce their own food so do NOT compete for food.

However, they do need nutrients and water to grow healthily.

The roots spread out to get more nutrients and water than other plants.



Plants compete for....

Space

Plants need to spread their seeds as far as possible to avoid competition with their own seedlings.

How Seeds Travel

by the wind



milkweed



dandelion



maple

by animals



beggar-ticks



sandbur



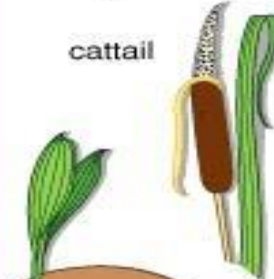
blackberry

by water

lotus



cattail



coconut



by bursting

violet



jewelweed



witch hazel

by humans



bean



wheat



cherry

Living Factors that can change the habitat for an animal are called

BIOTIC factors

These include:

- New predators arriving
- New competitors arriving
- Food availability
- Disease

Biotic Factors
(living)

Predators



Disease



Food



Non-living Factors that can change the habitat for an animal are called

ABIOTIC factors

These include:

- Light intensity
- Temperature
- Rainfall
- Pollution

Abiotic Factors (non-living)



Temperature



Light Intensity



Pollution



Moisture

Living and non-living factors game:

- <https://wordwall.net/resource/7862834/science/biotic-vs-abiotic-factors>

				<i>Abiotic Factors</i>		<i>Biotic Factors</i>	
 <i>Water</i>	 <i>Krill</i>	 <i>Seagull</i>	 <i>Dirt/Soil</i>				
 <i>Trees</i>	 <i>Sun</i>	 <i>Algae</i>	 <i>Salmon</i>				
 <i>Rocks</i>	 <i>Mushroom</i>	 <i>Temperature</i>	 <i>Dead tree</i>				

Causes global warming

SOOT

Stops red blood cells carrying oxygen

Pollutant gases released when fuels are burnt

Sulphur dioxide

nitrogen oxides

<https://wordwall.net/resource/27413/acid-rain-quiz1>



**Sulphur dioxide and
nitrogen dioxide
causes acid rain**



<https://wordwall.net/resource/61434984/the-peppered-moth>



Two types of reproduction

Sexual



Two
parents

Asexual



One
parent

QUICK RECAP: Sexual reproduction

Most **animals**..... reproduce sexually eg cats and**humans**.....

Sexual reproduction requires sex cells from **two**..... parents.

This enables the genetic information to be mixed and
offspring..... share characteristics with each parent. This is
called **variation**.....

Variation	animals
-----------	---------

humans	two
--------	-----

offspring	
-----------	--



Challenge:

Can humans produce
identical offspring?

QUICK RECAP: Asexual reproduction

Most **bacteria** and some plants reproduce asexually. Sexual reproduction requires sex cells from **one** parent. This ensures the genetic information is not mixed and **offspring** share all the same characteristics with the parent. This is called **cloning**.

cloning bacteria

one offspring



Challenge:

Can humans produce identical offspring?

Reproduction game:

- <https://wordwall.net/resource/7991048/asexual-and-sexual-reproduction>

Offspring are identical	Uses pollen + ova in plants	Plant cuttings	Uses gametes	Mixing of genetic material	Offspring are not identical	No gametes
Chromosomes come from both parents	Uses sperm + eggs/ova in animals	Only one parent	Two parents (one male and one female)	Slowly adapt to their environment	Adapt faster to their environment	The same genetic material

Asexual reproduction

Sexual reproduction

Genetics

- <https://wordwall.net/resource/9555882/science/chromosome>
- <https://wordwall.net/resource/9556070/science/chromosome-dna-and-genes>

