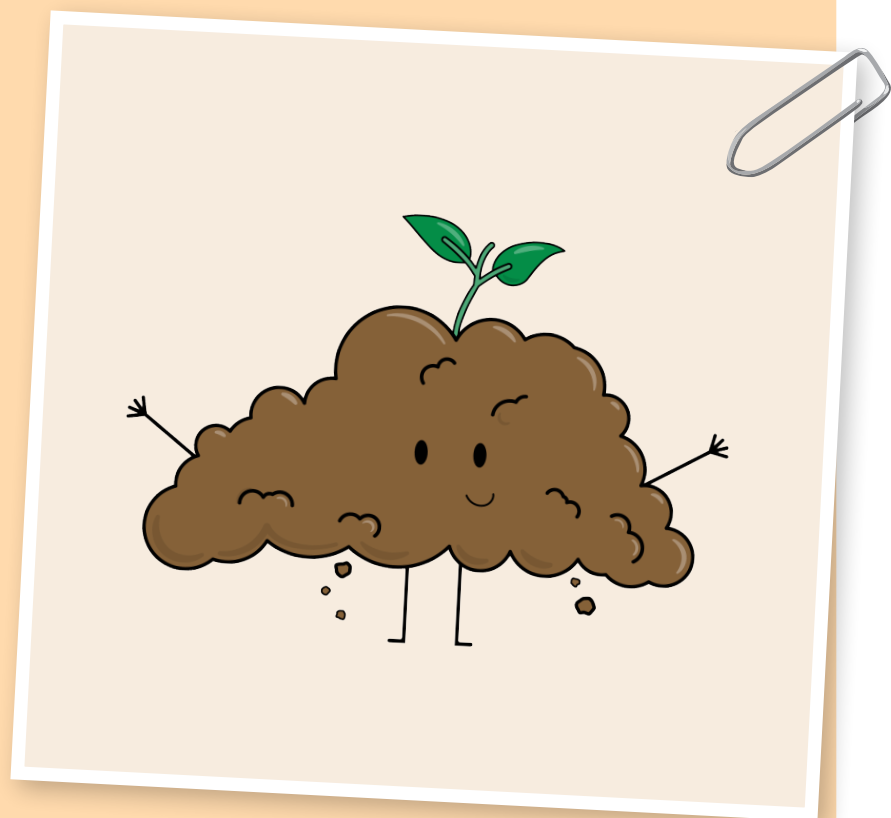
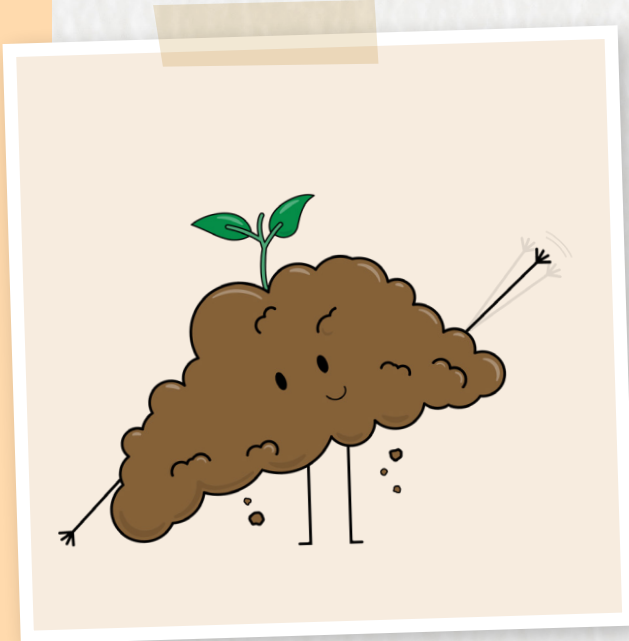


TOP SECRET



HERO PROFILE



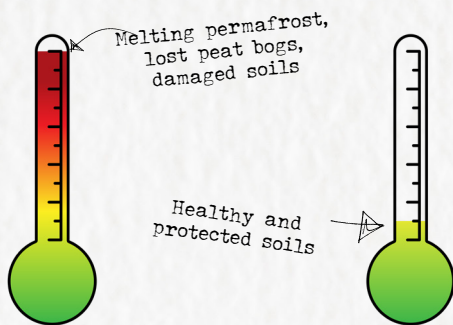
POWER FEATURES.



HISTORY.

An ancient force found in many different forms across the world. This hero has been millions of years in the making, combining the strength of rocks with the remains of plants. It can be deep, frozen, soaked and ploughed but still works hard for us all.

CLIMATE CHANGE INDICATOR.



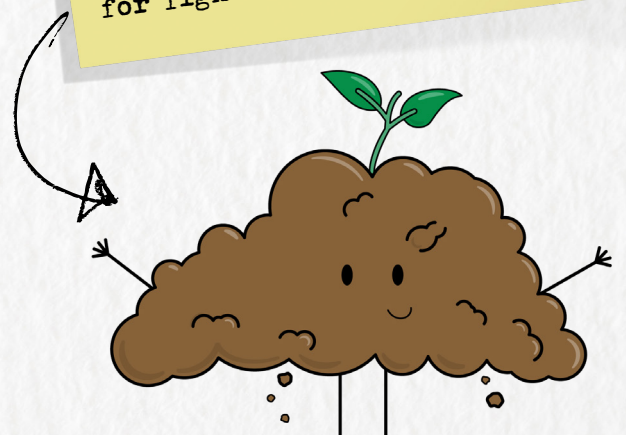
THREATS/VULNERABILITIES.

- Pollution
- Exposure (removing trees or plant cover)
- Erosion (washed or blown away)
- Removal (for building or growing)
- Covering (concrete, tarmac)
- Overuse (taking all the goodness out)

TEAM MEMBERS.

- Healthy soils
- Peat bog
- Peat-free compost
- Permafrost - (frozen soil)

- > This hero acts like the skin of the earth
- > It is made up of lots of different parts — decaying plants and animals, minerals, water and air
- > There are lots of different types of soil, each with their own characteristics.
- > Healthy soils are vital for life on earth
- > There are a few soil types that have particularly amazing superpowers for fighting climate change



PEAT BOG

Soil team member



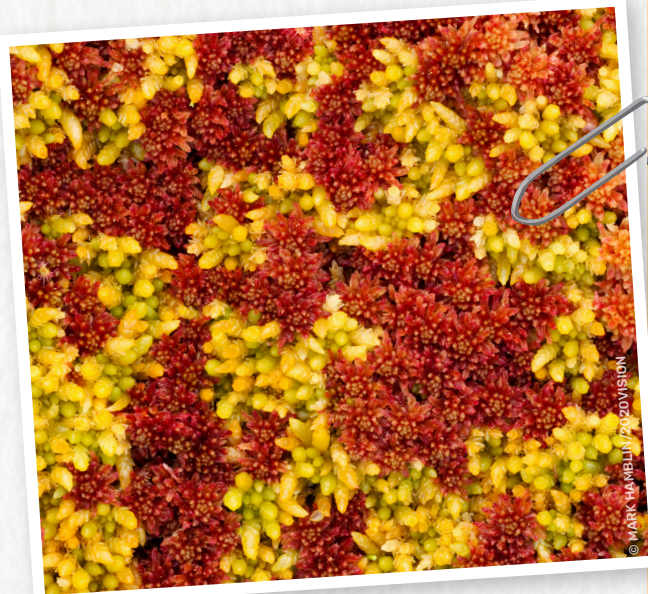
© PETER CAIRNS/2020VISION

A peat bog is a type of wetland whose soft, spongy ground is composed largely of living and decaying sphagnum moss. Decayed, compacted moss is known as peat.

England's upland peatlands store away 138 million tonnes of carbon, equivalent to 506 million tonnes of CO₂

Today, only 4% of England's upland deep peatlands are in good ecological condition and actively forming peat.

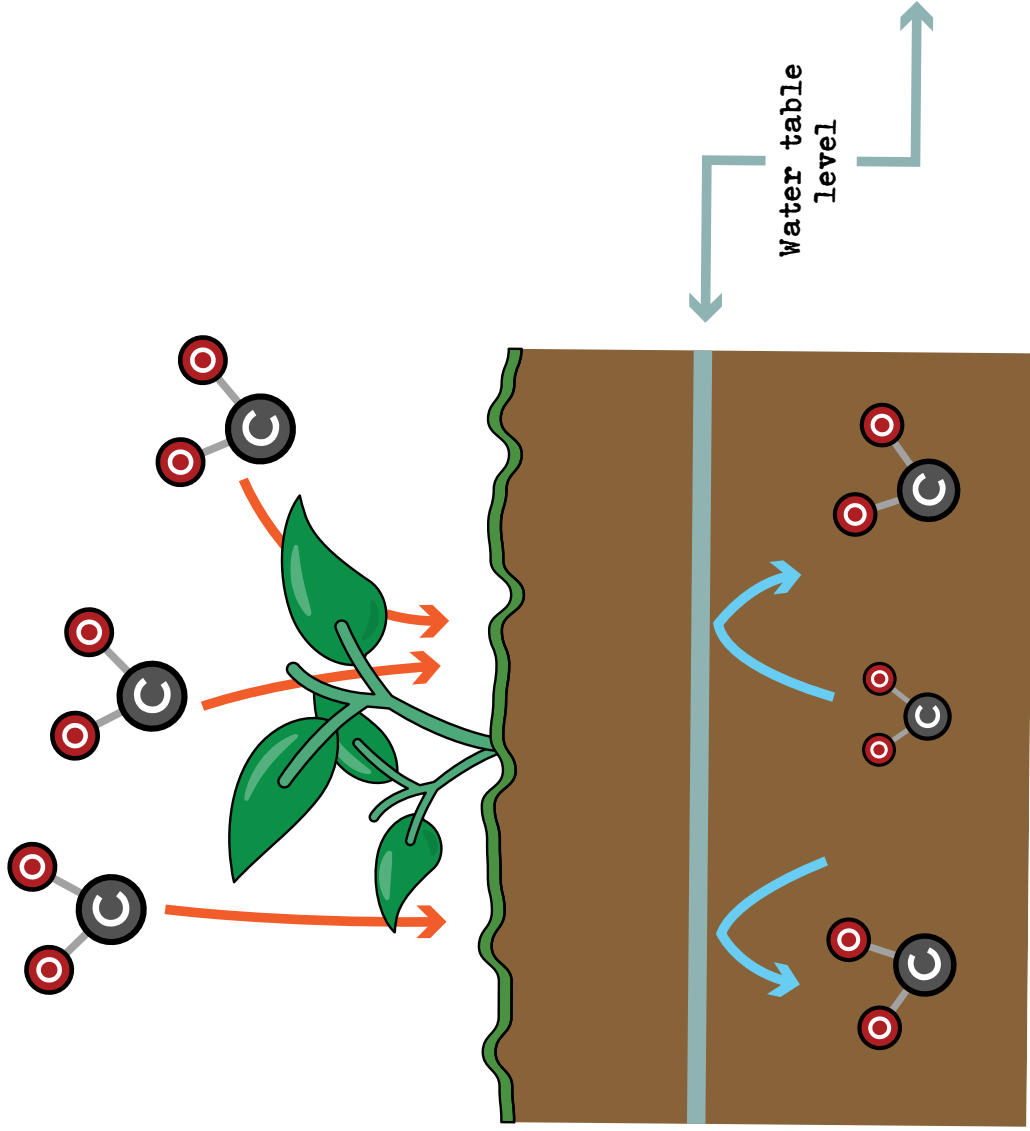
They are home to an extraordinary wealth of wildlife. Many are specialised species, which have adapted to thrive within a waterlogged, mostly acidic, nutrient poor habitat.



© MARK HAYBLIN/2020VISION

How does a peat bog help take in carbon from the atmosphere?

- Peat bogs are very wet
- Because healthy peatbogs are waterlogged, when plants that live there, like sphagnum mosses, die they don't fully decompose. Instead they slowly build up as layer upon layer of peat, trapping their carbon stores in the peatbog too.

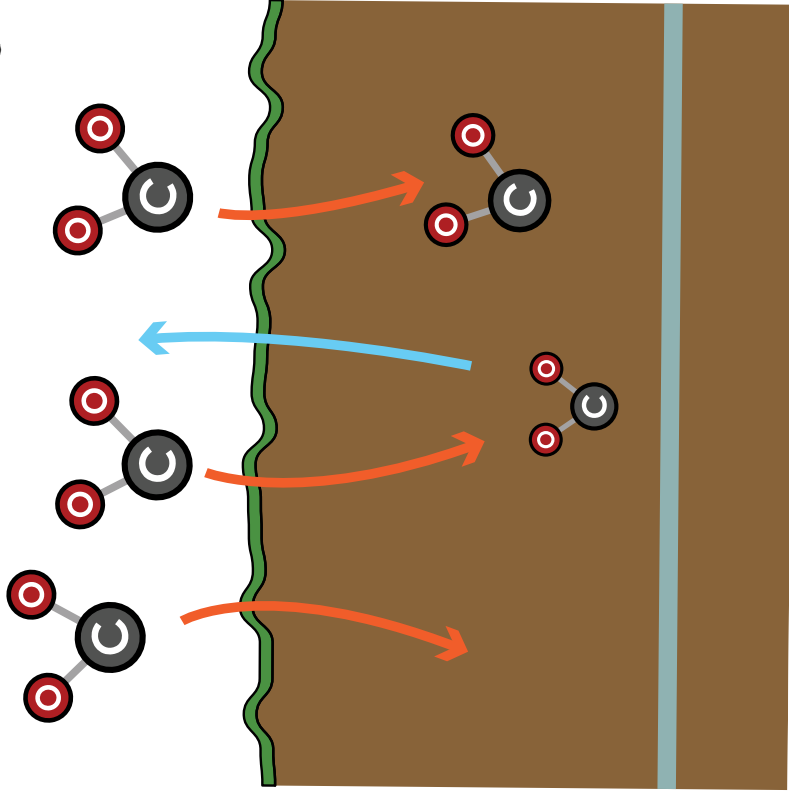


Keeping a high water level (water table) in peatbogs is crucial to make sure their huge stores of carbon stay locked away.

But if a peatbog is drained or dug up, like people have done, for farmland or garden compost, then the water table drops and the peat dries out. This is unhealthy for the peatbog.

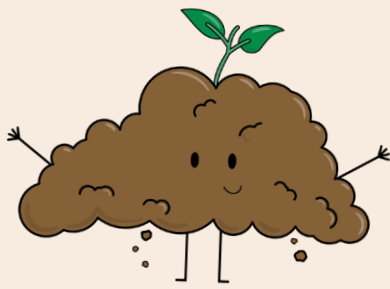
It also means that all the carbon stored in the peat over millions of years is released into the atmosphere, adding to climate change.

We need to keep our peatbogs wet with lots of plants on them to stop this from happening.



PERMAFROST

Soil team member



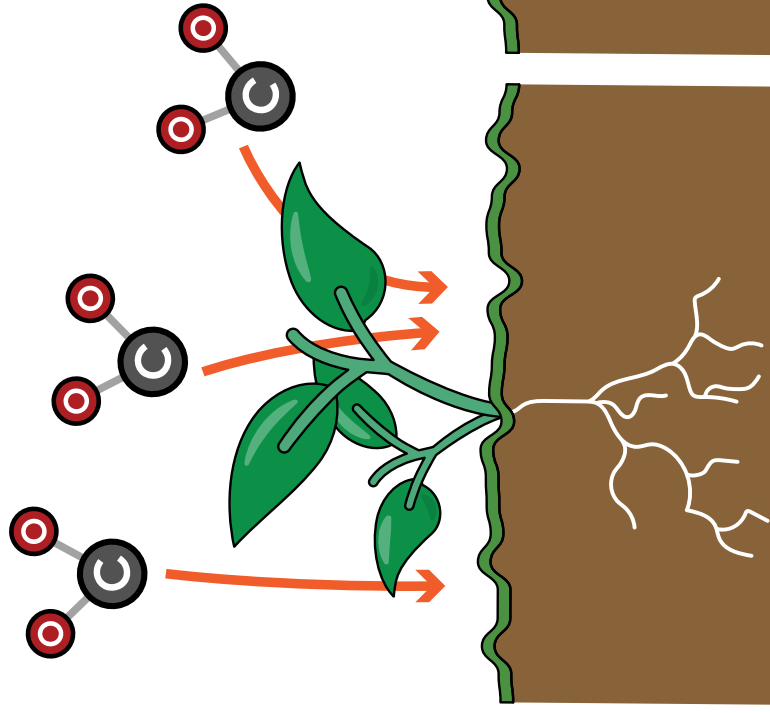
Permafrost is any ground that remains completely frozen — 32°F (0°C) or colder — for at least two years. These permanently frozen grounds are most common in regions with high mountains and in Earth's higher latitudes — near the North and South Poles.

There are no areas of permafrost in the UK, but it is a very important member of the hero team for the world.

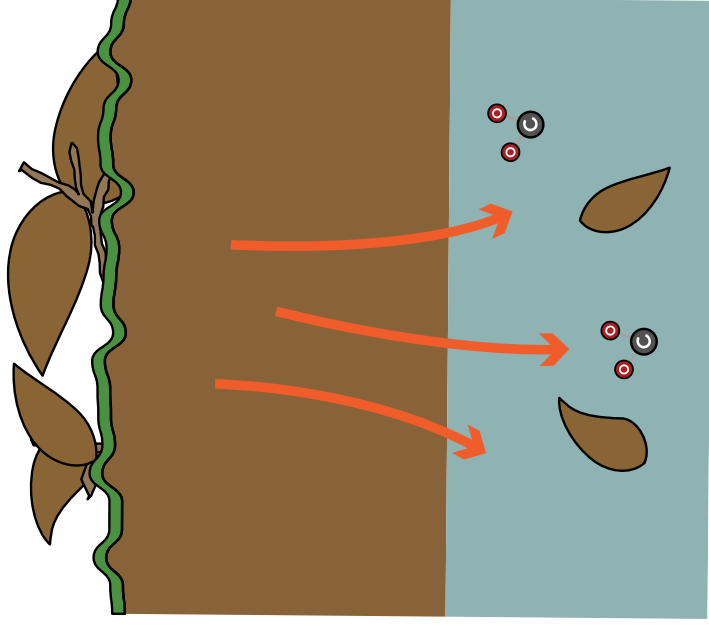
Scary fact: If you build a house directly onto permafrost, it makes the ground warmer, melts the ice and causes the house to sink into the ground!

How does permafrost help take in carbon from the atmosphere?

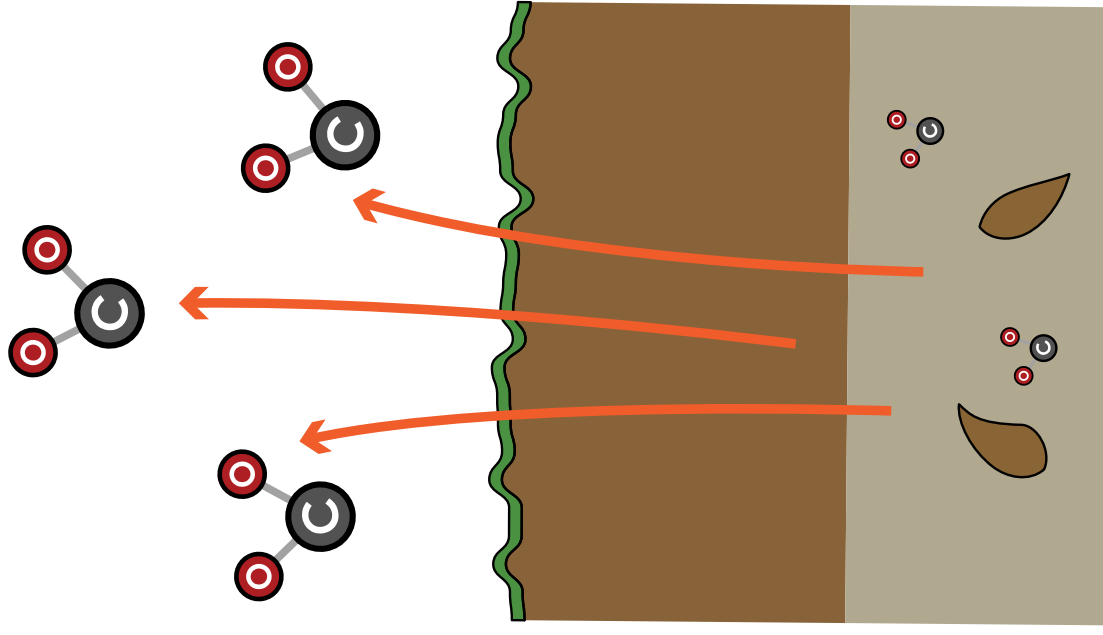
Plants take in CO_2 and move it through their roots to the soil



When plants die and rot, the carbon is trapped in the frozen ground



If the permafrost melts, the carbon is released back into the atmosphere



COMPOST

Soil team member



Composting means that nutrients go back to the soil which in turn helps to capture carbon! Who'd have thought that composting was a way to help slow down climate change!

Composting food waste at home stops it going to rubbish tips where it adds to the production of harmful greenhouse gases.

Compost is a mixture of rotting plant matter and food which is used for fertilizing and improving land.



Compost helps to make soil stronger and can be made by carefully mixing waste materials in a compost bin at home or school.

DRAINING & DRYING



BURNING



GARDEN COMPOST
CONTAINING PEAT

THREATS

(TO PEAT BOGS)

OVERGRAZING



© MATTHEW ROBERTS

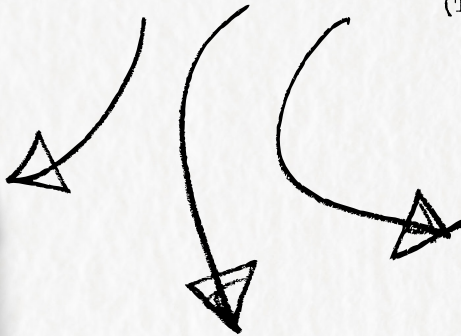
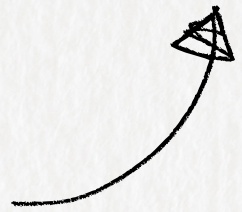
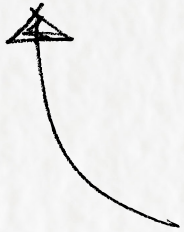


PLANTING TREES



CUTTING

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**BUILDINGS
AND CONCRETE**



FLOODING



**DRIVEWAYS INSTEAD
OF GARDENS**



**BARE, PATCHY
OR THIN GRASS**

THREATS

EROSION



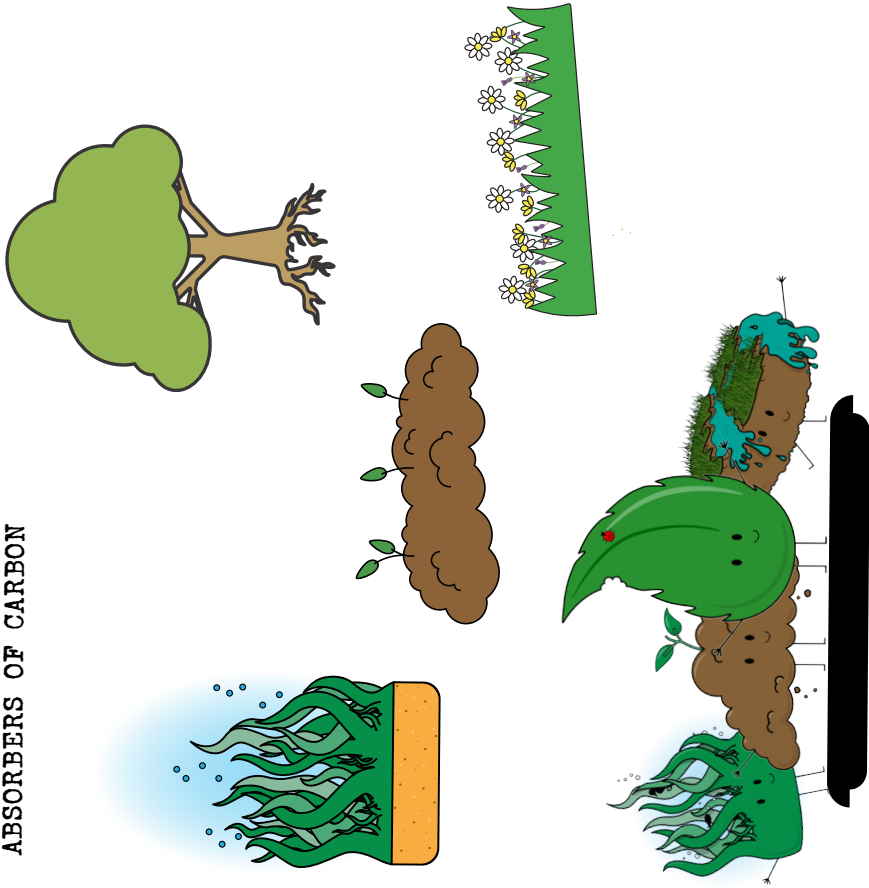
**TRAMPLING - HUMANS
OR ANIMALS**



INTENSE FARMING

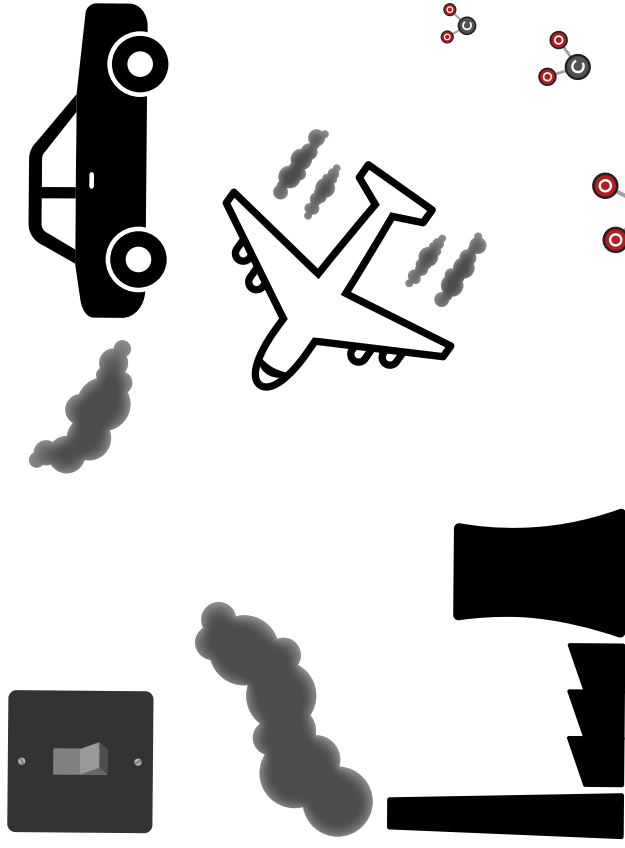
© BUY EDWARDS/2020VISION

ABSORBERS OF CARBON

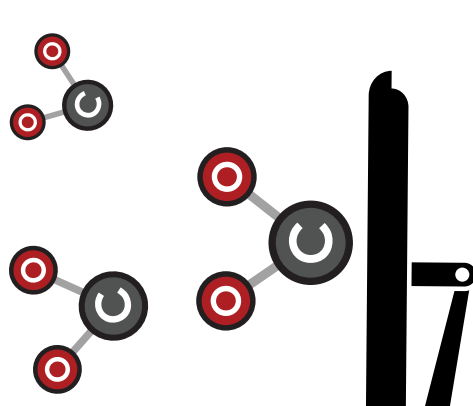


Another way to bring balance is to increase the number and strength of heroes to absorb carbon so **MORE** is taken out of the atmosphere.

PRODUCERS OF CARBON



One way to bring balance is to **REDUCE** the amount of carbon emissions we are producing so **LESS** is being released into the atmosphere.



How can I help?
Who can I influence?



Some ideas to investigate:

How? Assembly? Noticeboard? Webpage? Letters? Newspapers?
Videos? Posters? Leaflets? Support Campaigns?

Other sources of information



Compost

wildlifetrusts.org/actions/how-compost-your-waste

compostinghub.com/composting-for-kids/

Peatbogs

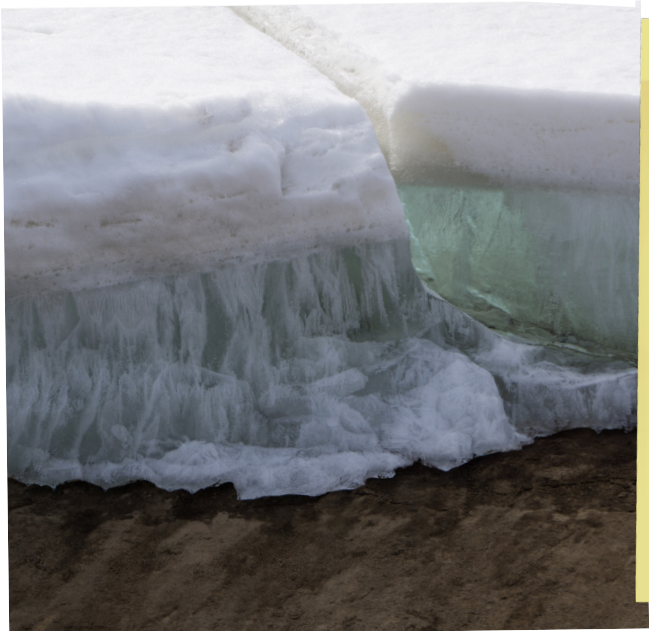
wildlifetrusts.org/actions/how-go-peat-free



wildlifetrusts.org/natural-solutions-climate-change/peatland

iucn-uk-peatlandprogramme.org/about-peatlands/uk-peatlands

forestryengland.uk/blog/protecting-peatlands



Permafrost

nationalgeographic.org/encyclopedia/permafrost/

climatekids.nasa.gov/permafrost