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Opening extract from
The Big Green Book

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Earth is Just Right

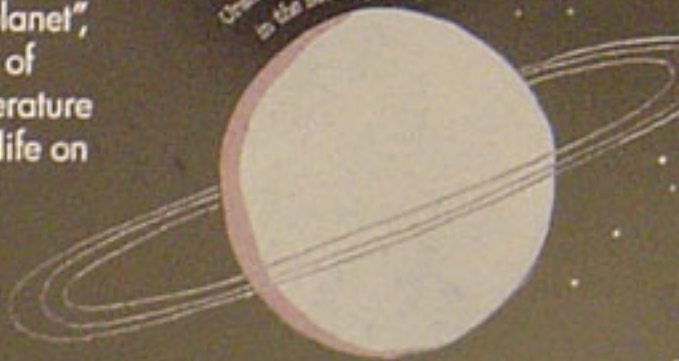
Our planet, the Earth, is one of eight in our solar system, but the Earth is the only one that is home to living things. Why? Because the other planets are either too hot or too cold.



Mars has a thin atmosphere, and that means it's too cold for life.

Some people call Earth the "Goldilocks planet", because like the porridge in the story of Goldilocks and the Three Bears, its temperature is "just right". This is why there has been life on Earth for a billion years.

Uranus is the coldest planet in the solar system.

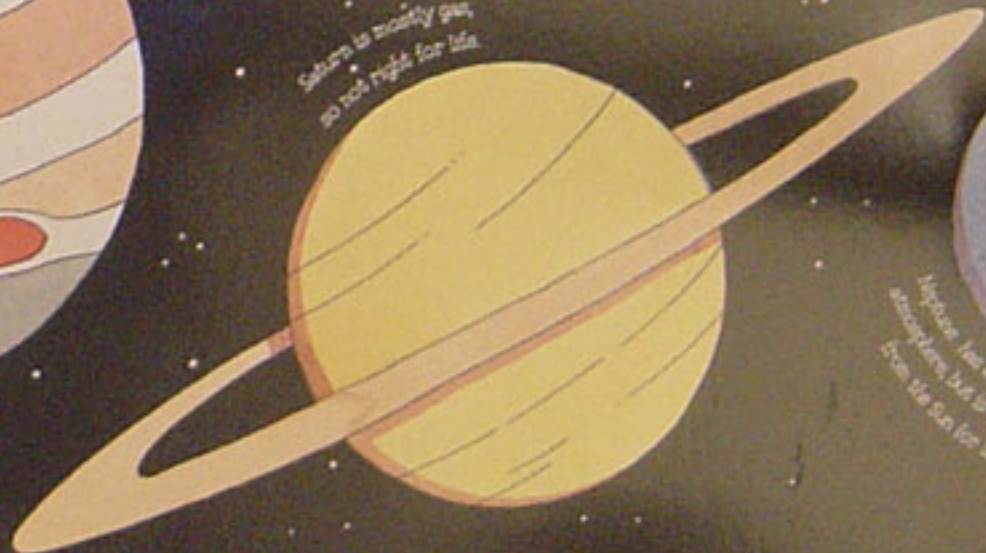


Saturn is mostly gas, so not right for life.



Jupiter is a giant mass of clouds, nothing lives here.

Jupiter has a thick, windy atmosphere but is too distant from the Sun for life.



The Earth is just the right distance from the heat of the Sun, which keeps us warm (but not too warm). But there is something else - wrapped round our planet is an invisible blanket of gases that we call the atmosphere. It contains gases like carbon dioxide that trap the sun's heat. Just enough. Like the blankets on a bed, these gases keep the air warm enough for us and the rest of nature to survive - even at night, when the Sun isn't shining.

Mercury is so close to the Sun it is too hot for life.



Venus's thick atmosphere traps the Sun's heat so it is too hot to live on.



Sun

Stars and moons
your friends,
Greenland,
Greenland, home
to polar bears,
I wish you
might,
Average
having day,
wear your coat!
There's weather -
just right,
soft! Could be
thermal in the
future, though,
I wish a hot oven,
On Venus.



How Hot Do You Like It?

1 billion years ago



The Earth is five billion years old. For billions of years, the only living things were tiny bugs and plants floating in oceans.

600 million years ago



At one point, the Earth was covered in ice. It was so cold that even the oceans froze!

400 million years ago



But plants and animals survived by the time of the dinosaurs the planet was extremely hot. Maybe that's one reason why they died!

1 million years ago



After the dinosaurs, the climate got much better. Not too hot and not too cold - just perfect for nature. The species appeared, including humans.

200 years ago



Large mammals like mammoths, horses, horses and deer are becoming extinct. They were so big and so many that they couldn't survive the changes in the environment.

Today



These days, we're so busy, we're not even taking the time to look after the planet. We're polluting the air and the water. We're cutting down the trees. We're using too much energy. We're not taking care of the planet.

Earth is Just Right

Our planet, the Earth, is one of eight in our solar system, but the Earth is the only one that is home to living things. Why? Because the other planets are either too hot or too cold.

How come we have just the right number of blankets? It turns out that the living things on Earth – like the trees in the forests, the bugs in the soil and the creatures in the oceans – make these gases and control how hot our planet is. They keep the temperature just right for life itself.

The Earth is just the right distance from the heat of the Sun, which keeps us warm (but not too warm). But there is something else – wrapped round our planet is an invisible blanket of gases that we call the atmosphere. It contains gases like carbon dioxide that trap the sun's heat. Just enough. Like the blankets on a bed, these gases keep the air warm enough for us and the rest of nature to survive – even at night, when the Sun isn't shining.

People call Earth the "Goldilocks planet", like the porridge in the story of the Three Bears, its temperature is just right. This is why there has been life on Earth for a billion years.

Uranus is the coldest planet in the solar system.

Saturn is mostly gas, so not right for life.

Jupiter is a giant mass of clouds, nothing lives here.

Neptune has a thick, windy atmosphere, but is too distant from the Sun for life.

Mercury is so close to the Sun it is too hot for life.

Venus's thick atmosphere traps the Sun's heat so it is too hot to live on.

How Hot Do You Like It?



Turning up the Heat

Our planet is getting hotter! Humans are filling the atmosphere with gases – called greenhouse gases – that trap the Sun's heat and stop it escaping into space. Pollution, rainforest destruction and burning too much coal, oil and gas are making our planet's heat-trapping blanket get thicker. Nature spent millions of years getting the temperature "just right", but now humans are messing it up.



OUR FUTURE GREENHOUSE WORLD



HOW BIG IS YOUR "CARBON FOOTPRINT"?

What can you do to help stop climate change?

- Do you go to school?
 - in a car with just your family
 - in a car with other students
 - by bus or train
 - on foot or on a bike
- When you get into or return to your:
 - study class
 - job or a classroom
 - gym or the gymnasium
- When you go on holiday, do you:
 - fly
 - drive
 - go by train or coach
- When you leave your room, do you:
 - turn everything off, including the light
 - turn off the lights only
 - leave everything on
- When you go shopping, do you:
 - always use bags
 - occasionally use one
 - always take plastic bags in shops
- For food, do you:
 - grow your own
 - buy fresh or local
 - buy packaged and processed
- When you are at the gym, do you also try:
 - a lot of exercise
 - to swim or walk
 - to walk
- If your backpack, do you have:
 - more than two regular sized books
 - one regular sized or several low energy books
 - one low energy book
- Do you or your family have:
 - a car kept in the garage
 - a car that is older than 10 years
 - a laptop computer or more of all 3
- Do you mostly dry your washing by:
 - using a tumble dryer
 - just a line and then hanging it up to dry
 - hand wash and hang it up to dry

ADD UP YOUR SCORES

Score	What it means
Under 5	Great job! You are a climate hero!
Over 5	Not bad, but you need to do better.
Over 10	Not bad, but you need to do better.
Over 20	Not bad, but you need to do better.

Pull the tip to see how you can cut your carbon footprint!

Tun
 Our planet is called green space. Pollution is making the air thicker. Not just right.

There are three main man-made gases in the heat-trapping blanket. Carbon dioxide exists naturally but it is also made when we burn fuels to make energy. We all use this energy, so we all contribute to the increase in carbon dioxide in the atmosphere.

Heat

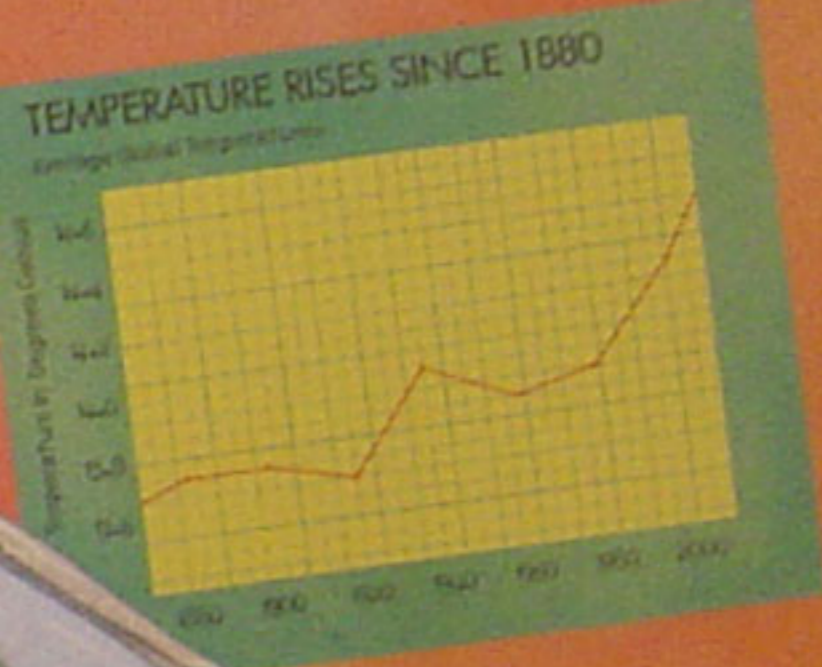
OUR FUTURE GREENHOUSE WORLD

Pull
 Where has all the water gone?
 Even where you live is getting hotter. The summers are drier and the rivers and reservoirs don't have enough water.

Pull
 The Arctic ice is melting. Soon it could all disappear during the summer months.

Pull
 How do we really are the shape of the desert?
 Deserts are spreading onto farmland. People and animals are leaving to find water and food.

All our technology can't make the soil, water and clean air that living things need.



carbon dioxide
 from:
 • Oil burned by cars and planes
 • Coal and gas burned to make electricity
 • Burning forests

methane
 from:
 • Farting cattle
 • Water logged soil in flooded rice fields
 • Frozen Arctic soil which melts as the Earth heats up.

nitrous oxide
 from:
 • Fertilizers we use on crops

Where does the carbon come from?
 On average everyone in the world puts a bit more than three tonnes of carbon dioxide into the air every year. In Europe we average about twelve tonnes.



HOW BIG IS YOUR "CARBON FOOTPRINT"?

What can you do to help stop climate change?

- Do you go to school?
 - in a car with just your family
 - in a car with other students?
 - by bus or train?
 - on foot or on a bike?
- When you get cold in winter, do you:
 - stay cold?
 - put on a duvet?
 - turn up the thermostat?
- When you go on holiday, do you:
 - fly?
 - drive?
 - go by train or coach?
- When you leave your room, do you:
 - turn everything off, including stand-by?
 - turn off the lights only?
 - leave everything on?
- When you go shopping, do you:
 - always take bags?
 - occasionally take?
 - always take plastic bags in shops?
- For food, do you:
 - grow your own?
 - buy fresh or local?
 - buy packaged and processed?
- When you are thirsty, do you ask for:
 - a can of bottle?
 - squash or milk?
 - tap water?
- In your bedroom, do you have:
 - more than two regular light bulbs?
 - one regular bulb or several low-energy bulbs?
 - one low-energy bulb?
- Do you or your family have:
 - a PC kept on most of the time?
 - a PC only on some of the time?
 - a laptop computer or home at all?
- Do you usually dry your washing by:
 - using a tumble dryer?
 - just a spin and then hang it up to dry?
 - hand wash and hang it up to dry?

Add up your scores.

Results:	Under 5	Over 20
Under 5	Great! You are a climate hero!	Time to get the world's attention!
Over 5	Get more! Doing the planet isn't so hard.	You are a climate warrior!
Over 10	Not bad! You try hard, but see where you can do better.	

Put the tick to see how you can cut your carbon footprint!

