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Opening extract from

The Big Green Book

Written by

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Published by

Eden Project Children's Books

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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.

Sun

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.



Mars has a thin atmosphere, and that makes it too cold 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.

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.

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

Saturn is mostly gas, so not right for life.

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

Pull

How Hot Do You Like It?

°C

1 billion years ago	600 million years ago	100 million years ago	1 million years ago	200 years ago	Today

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1

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.

2

Toasty, but not too hot. Just right for me!

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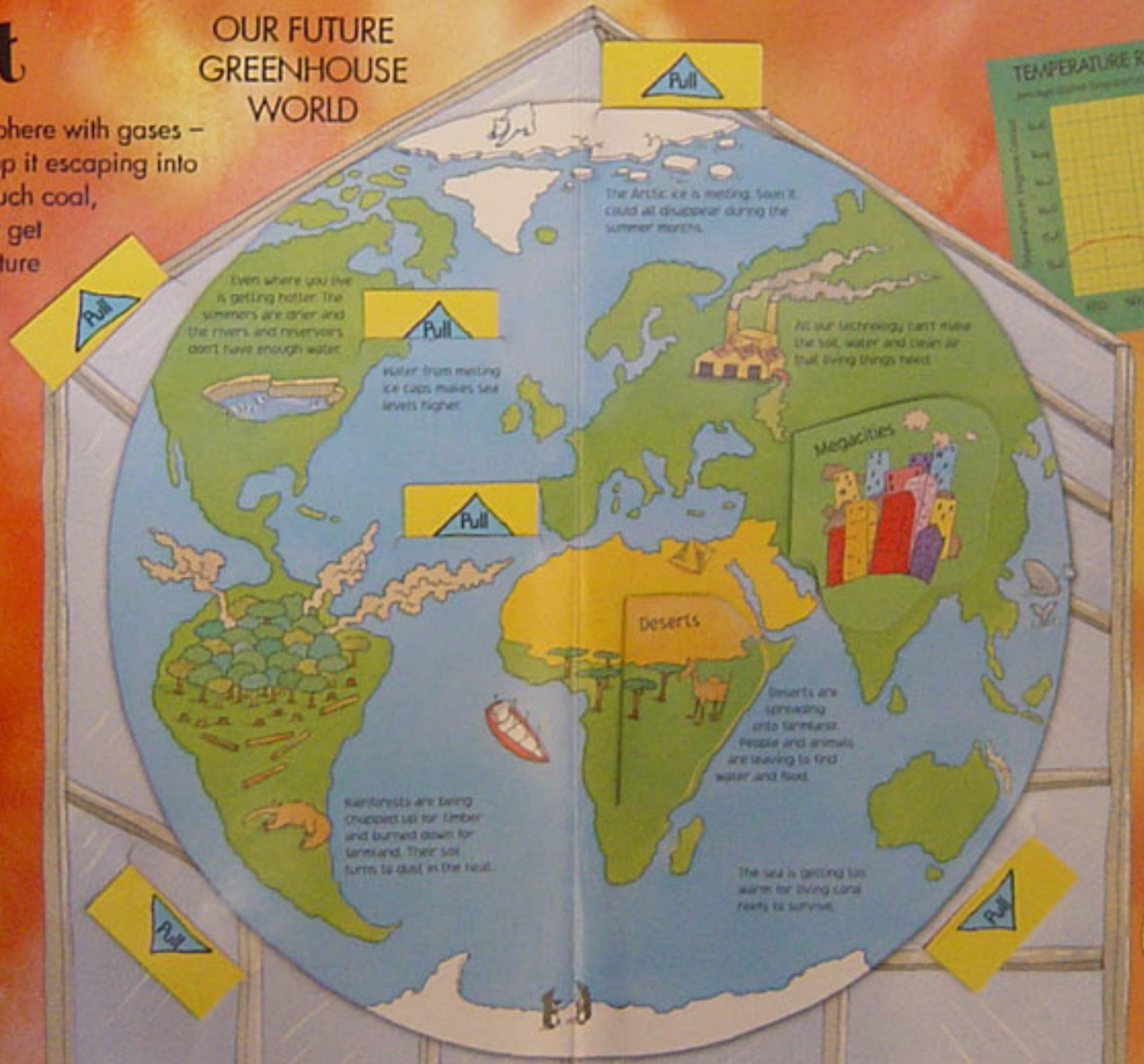
Turning up the Heat

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









Tu... Heat

Our plan... called gre... space. Po... oil and g... thicker. N... "just right...

...g the ...re with gases – ...caping into ...ing ...the ten...

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.

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 put 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.

Pull

Where has all the water gone?

OUR FUTURE GREENHOUSE WORLD

Pull

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

Even where you live is getting hotter. The summers are drier and the rivers and reservoirs don't have enough water.

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

Pull

How we really are the edge of the desert!

What have we done?

These green fields when I was born.

Deserts are spreading onto farmland. People and animals are leaving to find water and food.

Rainforests are being chopped up for timber and burned down for farmland. Their soil turns to dust in the heat.

The sea is getting too warm for living coral reefs to survive.

The jungle is too hot and dry! I can't find enough fruit for my babies!

Pull

TEMPERATURE RISES SINCE 1880

SOME LIKE IT HOT



But most animals don't ...

HOW BIG IS YOUR "CARBON FOOTPRINT"?

What can you do to help stop climate change?

1. Do you go to school:
   - in a car, with one of your family ●
   - in a car with other students ■
   - by bus or train ▲
   - on foot or on a bike ◆

2. When you get cold in winter, do you:
   - stay cold ◆
   - put on a pullover ▲
   - turn up the thermostat ●

3. When you go on holiday, do you:
   - fly ●
   - drive ■
   - go by train or coach ▲

4. When you leave your room, do you:
   - turn everything off, including stand-by ▲
   - turn off the lights only ■
   - leave everything on ●

5. When you go shopping, do you:
   - always re-use bags ▲
   - occasionally re-use ■
   - always take plastic bags in shops ●

6. For food, do you:
   - grow your own ▲
   - buy fresh or local ■
   - buy packaged and processed ●

7. When you are thirsty, do you ask for:
   - a can or bottle ●
   - squash or milk ■
   - tap water ▲

8. In your bedroom, do you have:
   - more than two regular light bulbs ●
   - one regular bulb or several low energy bulbs ■
   - one low energy bulb ▲

9. 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 none at all ▲

10. Do you mostly 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
Well done! You are a climate hero.

Over 5
Good, but could you do more?

Over 10
Shame on you! But could you do better?

Over 20
Shame on you! But could you do better?

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

Pull

READY STEADY GO GREEN!