

So what's happening right now?

Right now, Earth's climate is getting warmer. On average, the world is 1°C hotter than it was 170 years ago (though some places have warmed even more).

This change might sound tiny, but it's already had a big effect.

Some natural disasters, such as wildfires, are more severe and last longer.



November 2018

Reporting live from California, USA, where over 18,000 buildings have burned down in the recent fires.

CRISIS!

CRISIS!

The oceans are absorbing extra CO₂. This is making them more acidic.

All sorts of marine life can't handle these conditions.



CRISIS!

The particular place where an animal lives is known as its **habitat**. Climate change and the actions of people are harming many habitats. Some habitats are even disappearing.



If all the trees we nest in die, we'll die too.

CRISIS!

Less rain is falling in some places, which means supplies of fresh water are drying up. This is known as a **drought**. It makes it much harder to grow crops and find water to drink.



The rain we rely on didn't come this year.

All over the world, ice that used to be permanent is melting. This is contributing to a rise in sea levels.



In the 1990s, Greenland was losing more than 30 billion tons of ice each year. But in the last decade it has been losing ice almost 8 times faster.

CRISIS!

CRISIS!

Some extreme weather events, such as heat waves and floods, are becoming more severe.

My town in Bangladesh was washed away.



Sea levels are 20cm (8 inches) higher than in 1880, and now rising at nearly 4mm (0.15 inches) per year.

The sea around the island we live on is rising. Soon we may not be able to live here anymore.



CRISIS!

How do we know it's getting hotter?

Scientists have calculated world temperatures going back 170 years. Their data shows that the average temperature on Earth varies a little each year. Here's a chart showing a stripe for every one of those 170 years. Blue stripes are colder than the average. Red stripes are warmer. The darker the red, the hotter the year.

1850

Now

You can see that 18 of the 19 warmest years on record have occurred since 2001.

This phenomenon is often called GLOBAL HEATING.



<https://showyourstripes.info>

Bright lights, green city

By 2050, experts predict that 70% of the world's population will live in busy, bustling cities. To limit global temperature rise to 1.5°C, cities will have to emit much less and absorb much more.

So, what should future cities do differently?

Emitting less

Big changes to how cities are organized and powered can massively cut emissions.

Buildings can be built or renovated to use much less energy.

My region is powered entirely by WIND.

Pale paint has a high albedo. I'm painting my building white so that it reflects more heat. I'll stop cooler inside and well use air conditioner leads less!

New rules can change how people behave.

No cars in the central zone, Ma'am!

Absorbing more

Plants can grow almost anywhere. The more there are, the more CO₂ gets absorbed.

Parks and greenspaces

Ahhh, fresh air!

Tree-lined streets

Green roofs

Vertical gardens

Adapting

As well as mitigating the effects of the crisis, many cities will have to adapt to new living conditions. Exactly how cities adapt will differ from place to place, depending on how their local climates change.

The way a city is built may have to be reorganized.

Half of the wells that supply our water have dried up completely.

The city government had to build a pipeline to a river hundreds of miles away.

And we now collect water in the raining season and store it in a reservoir for the dry season.

The way people go about their day-to-day lives may have to change.

Don't water the flowers - we're nearly at our daily water limit!

Come back inside! You'll fry out there!

From a giant flood wall in Rotterdam, Netherlands, that's controlled by a supercomputer, to rules in New Delhi, India, that mean people can only use their car every other day - cities, towns and villages all around the world are already beginning to adapt. Have you noticed adaptations where you live?

Getting the job done

To limit warming to 1.5°C, our society needs to be carbon neutral by 2050.

We'll have to change how we power things, grow food, move around and more – and it'll need to happen FAST. How can we make it happen?

It's a HUGE challenge, but we won't need amazing superpowers to overcome it. In fact, all we'll really need is regular, everyday, human powers – skills that anyone can use...

My power is setting **CLEAR GOALS**. Whether it's an international treaty, or a plan to adapt your home, every project needs a target to work towards.



Captain Target

My power is **COMMUNICATION**. National and local governments need to keep each other in the loop and share what they know.

LADY LOOP

Be **TRUSTWORTHY**, like me. Governments need to promise to cut their emissions, and they need to stick to their word.



REX RELIABLE

I possess the power of **EXPERTISE**. All solutions need to take the latest knowledge into account.



The Professor



GRETA MOVE-ON

These skills are all useless without my power – **SPEED**. No country's current targets will be enough to limit warming to 1.5°C. Let's go, go, GO!

ZOOOOO
ZOOOOO

All those skills are essential to create treaties, plans and actions that **WORK**. According to the IPCC, change is particularly crucial in three areas – technology, money and how we behave – to stand a chance of meeting the 1.5°C target.

Technology

We need to make it possible for technology to advance quickly enough. It also had to be cheap and available everywhere it's needed.

Give farmers money to spend on climate-friendly machinery. Quick!

ZOOOOO

ZOOOOO

Money

We need to invest much, much more in technologies, ideas and programs that keep emissions low.

According to my calculations, we need to invest \$20 billion in new wind farms...

And let's aim to train up 15,000 people to work on them.

How we behave

Governments only have so much power over how people behave. We need to work out how to get people to change their lifestyles willingly.

I've heard people are more likely to be kind to the planet if they talk about it with their friends.

Putting a symbol on a food product to show that it comes from a low-carbon farm might make people trust it's from a good source.

There are many things we need to do, and even more ways we could choose to do them. The thing to keep in mind, is that it **CAN** be done. But will it?