



PRESCHOOL RESOURCE KIT



WE DISCOVER

WHAT IS CLIMATE CHANGE?

Since the 1880s scientists known as meteorologists have been monitoring and recording the weather. These records show that the Earth's atmosphere is beginning to get warmer which is causing our climate to change. This is known as **climate change**.



WE WONDER

We hear a lot about Climate change because it's happening right now, but that's just about melting ice caps, penguins and polar bears... or is it much more than that?



HOW ARE PENGUINS AND POLARBEARS THE SAME? PRINT AND MATCH THE PICTURES!



HURT BY CLIMATE CHANGE



SWIM IN THE SEA



GET FOOD FROM THE SEA



LIVE IN A COLD PLACE



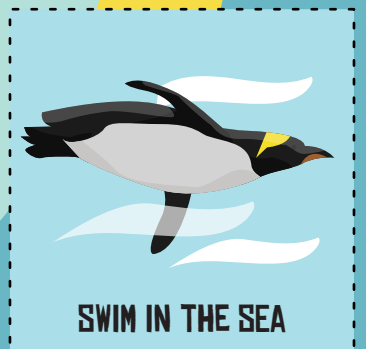
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What's the difference between

Weather & climate?

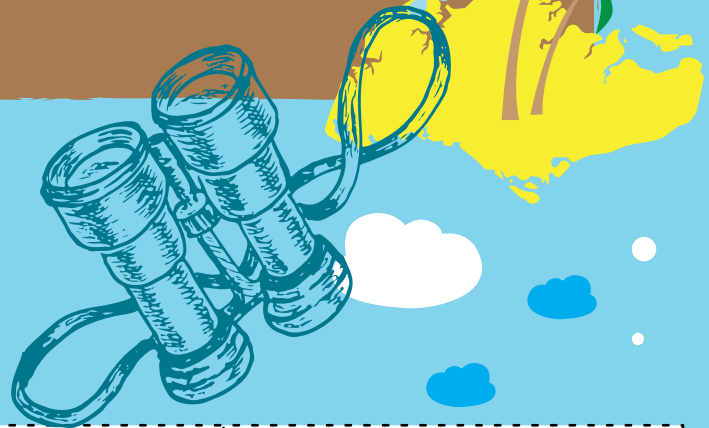
Weather is the condition of the atmosphere over a short period of time. Weather can change frequently. For example, it can be rainy one day, and sunny the next.



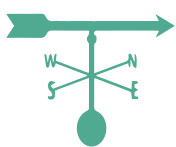
Climate is how the atmosphere behaves over a relatively long period of time - like over 30 years!

For example, Singapore has a warm tropical climate with high humidity throughout the year. This is how it has been over the last 30 years, which is how we know it is our climate.



WEATHER WATCHING : Visit the [Meteorological Service Singapore](#) and monitor the daily weather.



Days of the week	 Temperature is influenced by moisture, wind as well as how much sunshine reaches the Earth.	 The moisture content of the air causes mists and fogs and of course rain, and frost if it's cold.	 Winds blow from all directions, knowing which way the wind is blowing can help predict the weather.
MONDAY			
TUESDAY			
WEDNESDAY			
THURSDAY			
FRIDAY			
SATURDAY			
SUNDAY			



WE EXPLORE

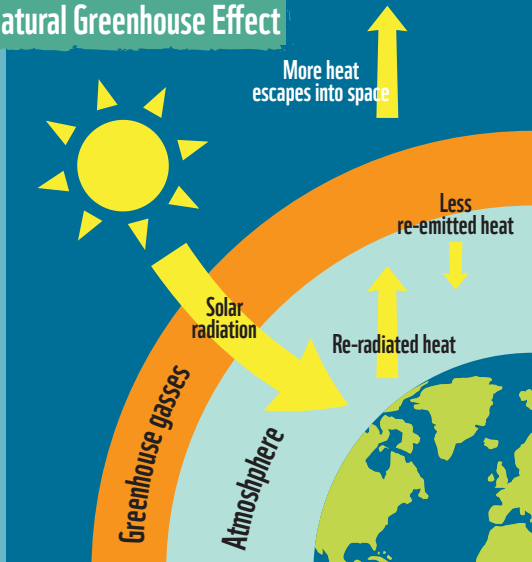
What's the deal with

CLIMATE CHANGE?

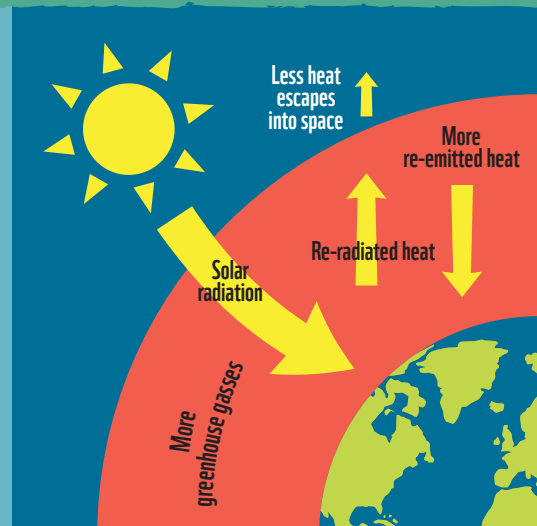
What's the problem?

Burning fossil fuel like oil and coal to create energy gives us lots of benefits – but it's harming the earth! When we burn these natural resources, a harmful greenhouse gas is released into the air. Greenhouse gas is also released when we burn trees. This gas creates a barrier around the earth that doesn't let heat escape. With all that trapped heat, our earth is getting too warm!

Natural Greenhouse Effect



Increased global warming caused by human activity



TEMPERATURE

With more aeroplanes, cars and buildings to power, we started using more fossil fuel, which released more greenhouse gas into the air! The earth began heating up!



1900s



Because of all that greenhouse gas, the planet is now 1°C warmer than before the 1900s!

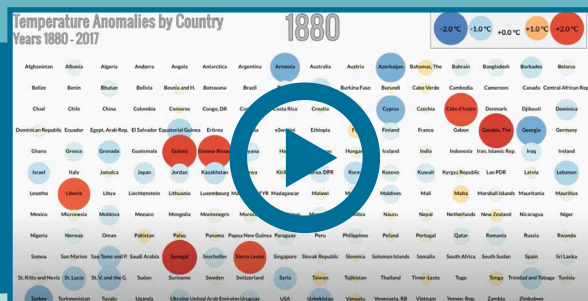
now



Think 1°C isn't a big deal?! Check out what has already happened to our planet!



Watch this video to see how the temperatures in countries around the world has increased since 1880!





WE EXPLORE

MELTING ICE



The Arctic has lost around half of its summer sea ice because hotter temperatures are making it melt. Arctic animals like polar bears are losing their icy home.

SEA LEVEL RISE



Because of melting ice in the Arctic there is now more water in the seas. At least five islands in the Pacific Ocean have already disappeared because rising sea levels have submerged them.

WHAT DOES +1°C MEAN FOR THE CLIMATE?

While day-to-day weather may stay about the same in a warmer world, weather events will become more extreme. For example, heat waves could last longer, and rainstorms could be more intense. These changes are predicted to become the 'new normal' in our world, and continue in the long term. This means the climate has changed.



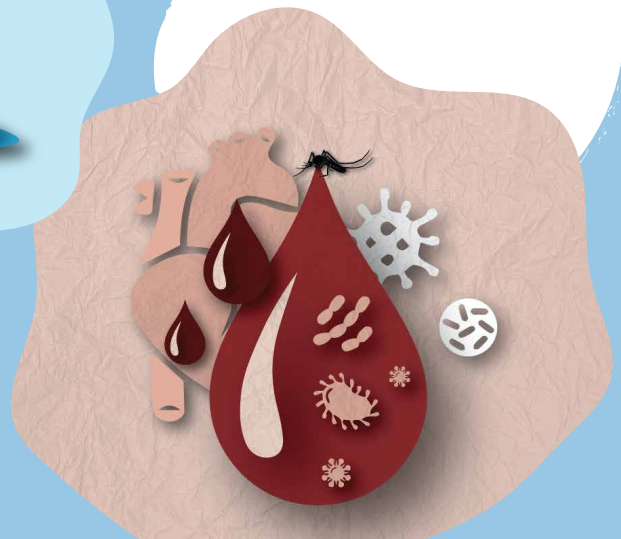
+1°C

THIS IS WHAT HAS ALREADY HAPPENED IN SINGAPORE

In 2010, 2012 and 2018, Orchard Road was flooded.



Since 2005, there have been dengue outbreaks due to rising temperatures.



In 2008, Singapore was among the countries threatened by a rice shortage caused by massive floods in Thailand.



CLIMATE CHANGE



Who will be hurt by climate change? Find out in this video.





WE EXPLORE

what does



CLIMATE CHANGE

mean for animals?

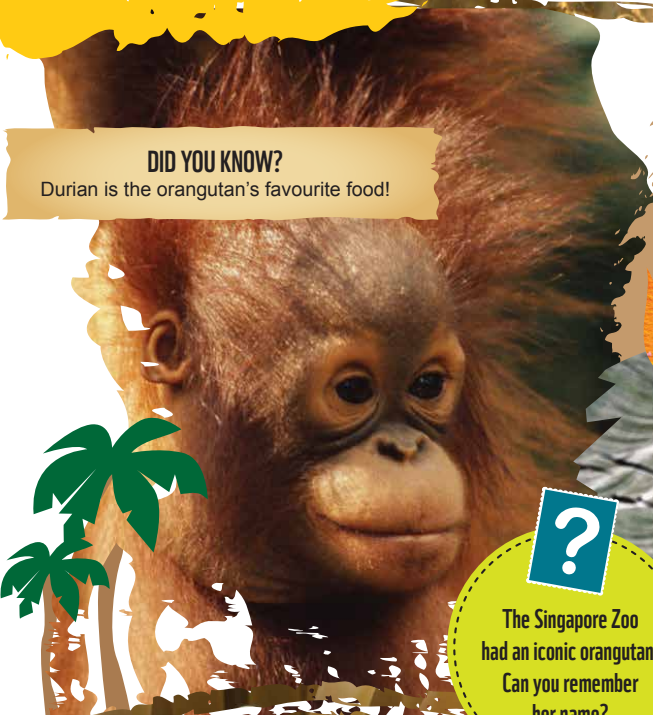


DID YOU KNOW?
Tiger pee smells like buttered popcorn!



96% of tiger habitat in Bangladesh will be underwater because of rising sea levels.

DID YOU KNOW?
Durian is the orangutan's favourite food!



More droughts and forest fires will reduce food supply for orangutans, who could starve.



?
The Singapore Zoo had an iconic orangutan. Can you remember her name?



DID YOU KNOW?
Unlike other big cats, snow leopards cannot roar.



DID YOU KNOW?
Clownfish can switch sex! Males become females in order to replace dominant females that die.

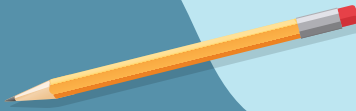
Clown fish will be homeless as coral reefs disappear due to warming sea temperatures.

Snow leopards may lose up to 30% of their mountain habitat as temperatures increase.


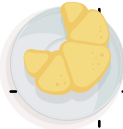











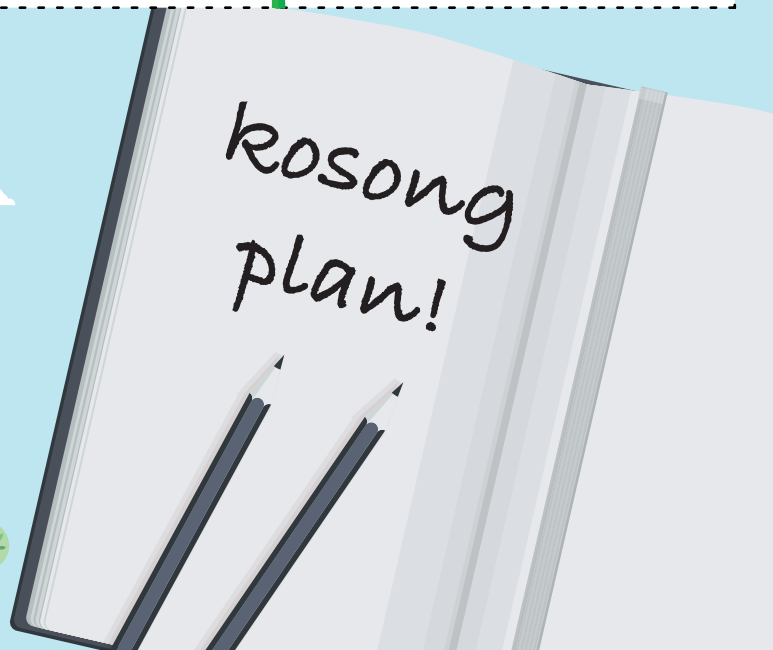


WE ACT



MAKE A KOSONG PLAN WITH YOUR FAMILY AND TAKE CLIMATE ACTION EVERY DAY. LEARN MORE ABOUT KOSONG PLAN [HERE](#).

KOSONG PLAN	BEGINNER	INTERMEDIATE	PRACTITIONER
<p>Eat Kosong</p> 	<p>Eat healthy and minimally processed food.</p> 	<p>Eat more grains, fruits and vegetables.</p> 	<p>Eat different types of food. Don't waste food.</p>
<p>Shop Kosong</p> 	<p>Buy only what you need. Save the money you didn't spend.</p>	<p>Swap what you don't need with something you need that belongs to a friend or family member.</p> 	<p>Buy things that last a long time. This will create less waste.</p>
<p>Travel Kosong</p> 	<p>Use public transport - Bus, LRT and MRT - as much as possible. Less of cars and taxis.</p>	<p>Walk when you want to go to places in your neighbourhood.</p> 	<p>Bicycle if it is too far to walk. It is also healthy because you get an exercise.</p>
<p>Go Kosong</p> 	<p>Switch off when appliances are not in use.</p> 	<p>Buy energy efficient appliances.</p> 	<p>Switch to renewable energy provider.</p>
<p>Carbon Kosong</p> 	<p>Spend more time outdoors and in nature.</p>	<p>Take part on tree planting.</p>	<p>Encourage friends and family to join outdoors activities like nature trails, birdwatching and beach clean-ups.</p>





Extension Activity 1:

MELTING ICEBERGS GAME

WHAT TO DO:

Spread the sheets of newspaper out on the floor, making sure there is one piece per member of the group.

- The sheets of newspaper are icebergs.
- All players are polar bears.
- Only one polar bear can stand on an iceberg at a time.

Play music and the group should run around the room pretending to swim in the cold water.

When the leader calls out:

- “polar bear’s tired” everyone jumps onto the nearest iceberg.
- “polar bear’s swimming” everyone starts swimming again.
- “climate’s changing” the leader removes one sheet of newspaper.

Once the icebergs start disappearing, the polar bears left without an iceberg are out of the game. The last polar bear left is the winner.

POST GAME REFLECTION

1. Discuss why the climate is changing.

(Our energy hungry lifestyles use lots of fossil fuels which release carbon dioxide into the atmosphere, trapping heat and causing the temperature to rise – this leads to changes to our climate).

2. What effect this will have on all animals including polar bears.

(e.g. seasonal food availability may change, the places where they live may be negatively affected or destroyed/flooded).

3. Consider how we can help.

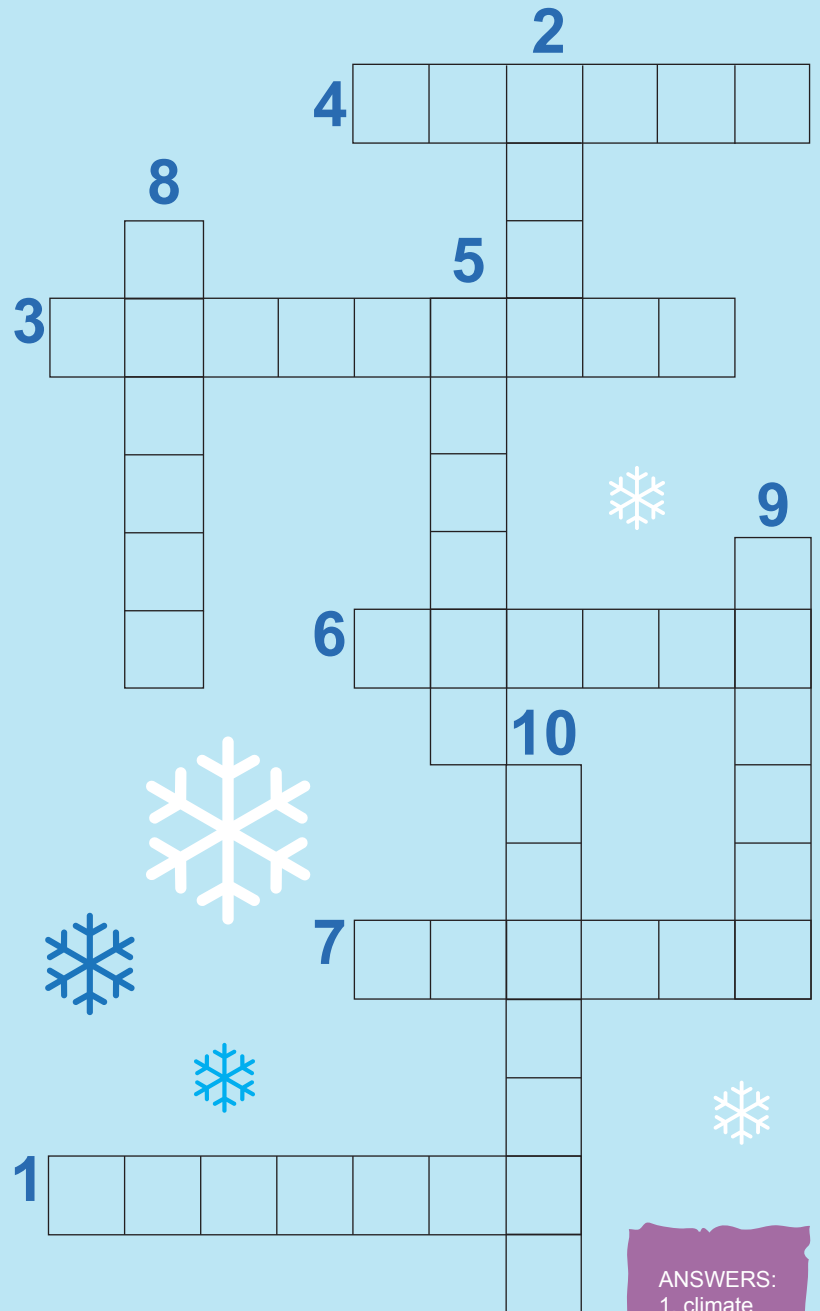
(Make a Kosong Plan with your family and friends and take climate action everyday).



Extension Activity 2:

CLIMATE CHANGE CROSSWORD

1. Too much greenhouse gas is making our _____ change.
2. Melting ice is causing sea levels to _____.
3. Arctic bear that is suffering from climate change.
4. To be a climate protector, you could turn up the temperature of your _____.
5. This country is the only carbon negative one in the world.
6. The temperature of the earth is getting _____.
7. Rising sea levels will submerge the beaches that these marine reptiles with a shell need to lay their eggs.
8. Rising sea temperatures make _____ bleach.
9. Warm temperatures mean water cannot _____ into ice.
10. The Great _____ Reef is the biggest coral reef ecosystem in the world.



- ANSWERS:
1. climate
 2. rise
 3. polar bear
 4. aircon
 5. Bhutan
 6. warmer
 7. turtle
 8. corals
 9. freeze
 10. Barrier

