CHANGING CLIMATE & EXTREME WEATHER

The Earth's changing climate brings more frequent extreme weather. This guide will help you explain to your students why the climate is changing, what kinds of extreme weather there are, and ways we can reduce the risks.

WEATHER VS CLIMATE

Weather: What's happening outside right now or soon (what you are wearing today).

Climate: The usual weather in a place over a long period of time (what is in your closet).

WHAT IS CLIMATE CHANGE?

Climate change happens when the usual weather in a place changes over time. Some places get more rain, others have hotter summers. Regional climates everywhere are changing because of global warming.

WHAT IS GLOBAL WARMING?

The Sun sends energy to Earth. A natural process, called the greenhouse effect, allows some of the heat to go back to space, and a small part to be trapped. This is what makes it possible to live on Earth. It is like a blanket around the planet that keeps us nice and comfortable.

When more greenhouse gases, like carbon dioxide from cars and factories, are released than is natural, this causes more heat to be trapped. This is called global warming. It is like adding 10 or 20 blankets around the planet. This can change weather patterns, melt ice, and make some days much hotter than before.

HOW DOES CLIMATE CHANGE AFFECT WEATHER?

Climate change can make extreme weather, like thunderstorms, floods, extreme heat, and droughts, stronger and more frequent.

THERE IS LOTS WE CAN DO!

People and nature can work together to reduce the risks of extreme weather. On the next page, you'll find eight types of extreme weather and solutions being used to keep people and wildlife safe.

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Extreme weather is when storms, heat, or cold are stronger or unusual for a place or time of year. A warmer Earth affects ice, water, and weather patterns.

Types of extreme weather	What people are doing to help
Wildfires are big, uncontrolled fires.	In Canada's parks, there are fire regulations like fire bans. These rules are very important to follow.
Hurricanes are huge storms with strong winds and rain.	In Nova Scotia, sand dunes help protect the coast and flooding from the storm surge.
Floods happen when too much water covers the land.	Wetlands in the Ontario Greenbelt act like sponges and help reduce flooding.
Blizzards are storms with strong winds and heavy snow.	In Southern Ontario, trees are planted as windbreaks to keep snow from piling up.
Hail is frozen rain in ice balls.	Farmers across the Canadian prairies plant shelterbelts, rows of tall trees, or use nets to protect crops.

Droughts are long periods without rain.	In Alberta, groups are restoring grasslands and wetlands to hold water.
Freezing rain is when rain lands and turns into ice.	In Banff, sidewalks are heated using geothermal energy so they don't get slippery.
Extreme heat is when it stays very hot for a long time.	In British Columbia, trees are planted in parks and schoolyards to give shade.