



CC5770

GRADES
5-8

READING
LEVELS

3-4

Climate Change Series

Global Warming EFFECTS

High-Interest • Low-Vocabulary

Aligned to
your
State
Standards

Curriculum
Based
Activities

Based on
Bloom's
Taxonomy



 Reproducible

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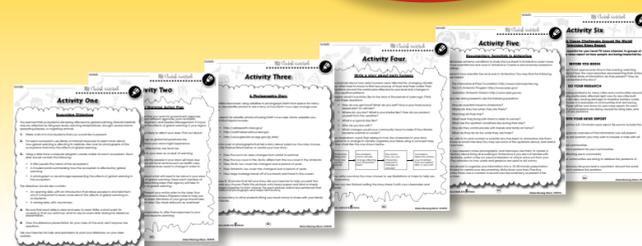
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Extreme Weather



1. Have you ever experienced a bad storm or other type of extreme weather? Write about your experiences on the lines below.

2. Use the words in the box to answer each question. You may use a dictionary to help you.

estimate degrees precipitation destructive evaporation

- a) What is the process by which liquid water turns to water vapor?
- b) What is a word for water or ice that falls to Earth's surface from clouds; for example, rain, sleet, or snow?
- c) What units is temperature measured in?
- d) What do scientists do when they make a prediction of a condition based on several pieces of information?
- e) What is another word for harmful?



Extreme Weather



Scientists estimate that average temperatures for the Earth as a whole will rise about 2–6 degrees Fahrenheit (1–3 degrees Celsius) by 2100. Although a few degrees may not seem like a lot, this rise in temperature can cause more extreme weather events, such as storms, floods, and droughts.

Warm air holds more water than colder air. Therefore, Earth's atmosphere can hold more water as temperatures rise. More water in the atmosphere leads to more precipitation, and more stormy weather. Some areas may get much higher rainfall than usual, and become flooded. Storms, such as hurricanes, can carry more rain than usual, making them larger and more destructive when they move onto land and through areas where people live.



The path of Hurricane Isabel (image courtesy of NASA & Goddard Space Flight Center)

Name three kinds of extreme weather events.



In order for the air to carry more water, however, the air must be near a source of water, such as an ocean. Air that is over normally dry areas, such as the middle of continents, can actually become drier as a result of global warming. With higher land temperatures and no source of water for evaporation, masses of air over dry land can become hotter and drier. This can lead to **droughts**, or periods of unusually dry weather. Deserts can spread as the air above them becomes hotter and drier over time. Spreading deserts can overtake forests and farmland. There is little that people can do to stop the movement of sand.



Extreme Weather



1. Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

- a) If global average temperature rises only 2 °F, people will not be affected.
TRUE **FALSE**
- b) More water in the atmosphere leads to less precipitation.
TRUE **FALSE**
- c) Hurricanes that hold more water are more destructive when they move onto land.
TRUE **FALSE**
- d) Masses of air over land will most likely become wetter if global temperatures keep rising.
TRUE **FALSE**
- e) There is little that people can do to stop the movement of sand from spreading deserts.
TRUE **FALSE**

2. Put a check mark (✓) next to the answer that is most correct.

- a) How many degrees Fahrenheit do scientists estimate the average temperatures on Earth will rise by 2100?
- A 1–2 °F
- B 2–6 °F
- C 6–12 °F
- D 12–20 °F
- b) What is the most likely effect of global warming on deserts?
- A they will become wetter
- B they will grow and spread
- C they will experience severe hurricanes
- D they will become good areas for farming
- c) What is the most likely type of severe weather to increase in the middle of continents due to global warming?
- A drought
- B flooding
- C tornadoes
- D hurricanes



Extreme Weather



3. Answer each question with a complete sentence.

- a) Explain why storms, such as hurricanes, may become stronger as Earth's average temperature rises.

- b) Explain why global warming may lead to drought in some areas.

Research

4. How will global warming affect the extreme weather in your area?

List the types of extreme weather that your area experiences.

Using the library or internet resources, research ways that global warming may affect the types of extreme weather that your area experiences. Contact your local government emergency management offices to ask for information about how to prepare for extreme weather in your area. Ask whether the office is making any plans for increased extreme weather due to global warming. Prepare a poster report with your findings to share with the class and post in your school.



Investigate fossils. Obtain a selection of fossils from your teacher

For each fossil:

- Draw a sketch of the fossil.
- Describe what parts of the plant or animal are preserved by the fossil.
- Compare the fossil to living things that are on Earth today.
- Describe what environmental conditions the plant or animal that made the fossil would have needed to live.
- Identify the ecosystem in which the plant or animal that made the fossil most likely lived.

Create a chart like the one shown below to organize your information.

Fossil Sketch	Living things that are like the fossil	Needs of the plant or animal that made the fossil	Ecosystem the plant or animal most likely lived in



Crossword Puzzle!

WORD LIST

climate	glacier	permafrost
desert	global warming	satellites
economy	infrastructure	sea level
forest	migrate	tundra
fossils	ozone	

Across

- the average weather conditions over time
- a common ecosystem in North America filled with trees
- when people move from one area to another
- the frozen ground in the tundra
- the rising average temperature of Earth's atmosphere
- objects that orbit Earth
- the ecosystem in the Arctic and Antarctic

Down

- the permanent parts of cities
- the use of money by a government
- where the ocean meets land
- a hot, dry ecosystem
- remains of once-living things preserved in rock
- a large mass of ice that doesn't totally melt in summer
- a gas that is a main part of smog



Comprehension Quiz



Part A



Circle the word **TRUE** if the statement is TRUE OR Circle the word **FALSE** if it is FALSE.

- Melting ice caps can create a negative feedback cycle.
TRUE **FALSE**
- Early humans migrated around the globe in response to changes in climate.
TRUE **FALSE**
- Fossils are the remains in rock of plants and animals that lived a very long time ago.
TRUE **FALSE**
- Ice sheets once covered Florida.
TRUE **FALSE**
- Global warming may lead to tropical diseases spreading to more locations.
TRUE **FALSE**
- Global climate change is causing fewer severe storms to form.
TRUE **FALSE**
- Ozone cannot harm the lungs of healthy people.
TRUE **FALSE**
- Ice sheets and permafrost are already melting at a fast pace due to global warming.
TRUE **FALSE**

Part B

Label the diagram by doing the following:

- Label the map of North America with the ecosystems from the list below.
 - desert
 - deciduous forest
 - grassland
 - tundra



Extreme Weather



"Satellite image of a Hurricane located in the Gulf of Mexico"

NAME: _____

After You Read 



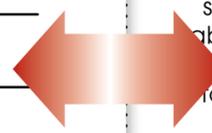
Melting Ice Sheets



3. Answer each question with a complete sentence.

a) Explain how water from melting ice caps speed up the rate at which the ice caps melt.

b) Explain how a change in the size of ice caps can cause greater global warming.



EASY MARKING

Research

4. How big are Earth's ice caps right now?

Using the internet, find out what is happening with Earth's polar ice caps right now. Find satellite photos showing Earth's ice caps this year, and compare them with photographs from the past. Read about how much scientists estimate that the ice caps melted during the past year. How does that compare with the estimate of 9% melt per year?

Make a poster showing old and new pictures of the polar ice caps. Use short text to explain how fast polar ice caps are melting. Display the posters around your school.

3.
a) Water on the bottom of the ice caps acts as a lubricant and speeds up the movement of the ice over it downhill and towards the ocean.

b) Ice caps reflect a lot of sunlight back to space. If they shrink, more sunlight will be absorbed by the ground, leading to more global warming.

1.
Answers will vary

2.

1 B

2 E

3 A

4 F

5 D

6 C

20

Sea level rises

21

1.
a) expands
b) ice caps
c) 3 feet

d) faster
2.
Cities nearest to the shore should be circled.

22

3.
a) water expands when it is warmer so it takes up more room; more water is added to the oceans because of melting ice caps

b) Many large cities are built close to sea level, so even a small rise could flood them.

23

1.
Answers will vary

2.
a) evaporation

b) precipitation

c) degrees

d) estimate

e) destructive

24

storms, floods, drought

25



ANSWERS KEY



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