



Contents



TEACHER GUIDE

- Assessment Rubric 4
- How Is Our Resource Organized? 5
- Bloom’s Taxonomy for Reading Comprehension 6
- Vocabulary 6



STUDENT HANDOUTS READING COMPREHENSION

- Earth’s Climate 7
- Climate and Human Civilizations 7
- Melting Ice Sheets..... 7
- Sea Level Changes 7
- Extreme Weather 7
- Climate and Human Health..... 7
- Climate and the Economy 7
- Climate and Ecosystems 7
- Hands-on Activities, Writing Tasks 12
- Crossword 16
- Word Search 17
- Comprehension Quiz 18



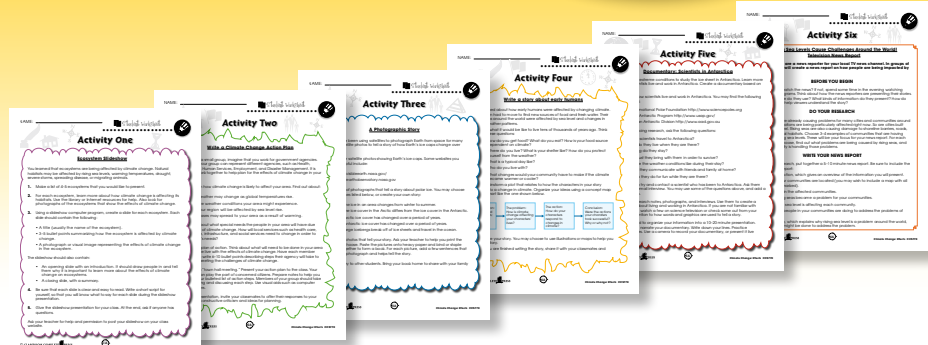
EASY MARKING™ ANSWER KEY 20

MINI POSTERS 22

✓ **6 BONUS Activity Pages!** Additional worksheets for your students

FREE!

- Go to our website: www.classroomcompletepress.com/bonus
- Enter item CC5770
- Enter pass code CC5770D for Activity Pages





Earth's Climate



1. Complete each sentence with a word from the list. Use a dictionary to help you.

average	humid	glacier	deposit
Arctic	fossil	atmosphere	polar

- Earth's _____ regions are covered in ice year-round.
- A _____ is a large mass of ice that does not completely melt during summer months.
- The value that represents the middle of a set of numbers is the _____.
- On a _____ day, there is a lot of moisture in the air.
- Sediment that settles out of water, wind, or ice, and comes to rest on Earth's surface is called a _____.
- The _____ is the region around Earth's north pole.
- A _____ is the remains or imprint in rock of a once-living thing.
- The layer of air surrounding Earth's surface is called the _____.

2. Think about where you live. Describe the year-round weather pattern.



Earth's Climate

What is the climate like where you live? Is it cold in the winter? Is it warm in the summer? Is it hot and dry in the summer? Is it wet in the winter? Maybe it is warm and humid most of the year. **Climate** describes the general pattern of weather in an area over many years. *Earth's climate* describes the average temperature and weather conditions over the whole planet. Earth's climate changes over long periods of time.

What is climate?



How do scientists use polar ice to study Earth's past climate?

Scientists have ways of studying how Earth's climate has changed during its history. The thick **Arctic** ice contains one of the best records of Earth's climate history. Arctic ice builds up from snowfall over thousands of years. When a layer of snow falls on the ground, it contains tiny bubbles of air. These bubbles are trapped as more layers of snow fall. Scientists drill down into the ice and remove **ice cores**, or thin tubes of ice. The deeper the ice, the older the snow layer that made it. The trapped air has all of the gases and tiny particles that were in the atmosphere at the time. Scientists can learn a lot from these layers. They can learn about the makeup of the atmosphere. They can learn about past events, such as volcanic eruptions and meteorite impacts. They can learn the average temperature. So far, scientists have studied ice cores up to 800,000 years old.



Scientists cutting into ice core samples



Earth's Climate



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

- The climate in an area changes from summer to winter.
TRUE **FALSE**
- Ice cores give an excellent record of climate history back to 800,000 years ago.
TRUE **FALSE**
- Glaciers can move across Earth's surface.
TRUE **FALSE**
- Florida was formed from a glacial deposit.
TRUE **FALSE**
- Earth has gone through at least 4 ice ages.
TRUE **FALSE**

2. Number the events from 1 to 5 in the order they occur in the formation of glacial deposits.

- Chunks of rock are carried by the glacier as it moves.
- A glacier moves across a rocky surface.
- Rock is scraped along the ground under the moving ice. It is ground to a fine powder.
- The ice melts and leaves behind rock powder and chunks of rock.
- Moving ice breaks off large chunks of rock.

3. Circle the areas that were covered with ice 20,000 years ago.

Indiana	Texas	New York
California	Ohio	Arizona



Earth's Climate



4. Answer each question with a complete sentence.

- Explain the difference between climate and weather.

- Describe **two** ways that scientists learn about Earth's past climate.

Research

5. Find out more about the Ice Ages.

Find out more about the 4 major ice ages in Earth's history. Use the library or Internet resources for help. Find out the approximate dates of each of the ice ages. Pick one, and look for the answers to the following questions:

- How much of Earth's surface was covered with ice?
- What types of living things lived on Earth during the ice age?
- What ways did these living things adapt to survive the ice age?
- What effects did the ice age have on sea level?

Create a poster of your chosen ice age. It should have a large diagram showing the places where ice covered. Add drawings around the diagram of the types of living things that were on Earth. Note any special adaptations that allowed each type of living thing to survive the cold conditions.



Investigate fossils. Obtain a selection of fossils from your teacher.

For each fossil:

- Draw a sketch.
- Describe what parts of the plant or animal are preserved.
- Compare it to living things that are on Earth today.
- Describe what environmental conditions the plant or animal would have needed to live.
- Identify the ecosystem in which the plant or animal 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
desert
economy
ecosystem
forest
fossils
glacier
infrastructure
levee
migrate
permafrost
satellites
sea level
tundra

Across

- Remains of once-living things preserved in rock.
- The frozen ground in the tundra.
- A large mass of ice that doesn't totally melt in summer.
- A common ecosystem in North America filled with trees.
- A hot, dry ecosystem.
- Objects that orbit Earth.
- When people move from one area to another.

Down

- The permanent parts of cities.
- The use of money by a government.
- This structure is built to help stop flood waters from spreading.
- Where the ocean meets land.
- The interaction between the living and nonliving parts of an environment.
- The average weather conditions over time.
- The ecosystem in the Arctic and Antarctic.



Comprehension Quiz

26

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**
- Climate change 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 climate change.
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



Arctic & Antarctic Icebergs



"Ice reflects more sunlight than other materials on Earth's surface."

NAME: _____

After You Read 



Earth's Climate



4. Answer each question with a complete sentence.

a) Explain the difference between climate and weather.

b) Describe **two** ways that scientists learn about Earth's past climate.

Research

5. Find out more about the Ice Ages.

Find out more about the 4 major ice ages in Earth's history. Use the library or Internet resources for help. Find out the approximate dates of each of the ice ages. Pick one, and look for the answers to the following questions:

- How much of Earth's surface was covered with ice?
- What types of living things lived on Earth during the ice age?
- What ways did these living things adapt to survive the ice age?
- What effects did the ice age have on sea level?

Create a poster of your chosen ice age. It should have a large diagram showing the places where ice covered. Add drawings around the diagram of the types of living things that were on Earth. Note any special adaptations that allowed each type of living thing to survive the cold conditions.

4.

a) Weather describes the condition of the atmosphere at any given time. Climate is the weather pattern over many years.

b) Answers will vary.

Across:

1. fossils
3. permafrost
6. glacier
7. forest
9. desert
13. satellites
14. migrate

Down:

2. infrastructure
4. economy
5. levee
8. sea level
10. ecosystem
11. climate
12. tundra



EASY MARKING ANSWER KEY

11

16

11



Earth's Climate

What is the climate like where you live? Is it cold in the winter? Is it warm in the summer? Is it hot and dry in the summer? Is it wet in the winter? Maybe it is warm and humid most of the year. **Climate** describes the general pattern of weather in an area over many years. *Earth's climate* describes the average temperature and weather conditions over the whole planet. Earth's climate changes over long periods of time.

What is climate?



How do scientists use polar ice to study Earth's past climate?

Scientists have ways of studying how Earth's climate has changed during its history. The thick **Arctic** ice contains one of the best records of Earth's climate history. Arctic ice builds up from snowfall over thousands of years. When a layer of snow falls on the ground, it contains tiny bubbles of air. These bubbles are trapped as more layers of snow fall. Scientists drill down into the ice and remove **ice cores**, or thin tubes of ice. The deeper the ice, the older the snow layer that made it. The trapped air has all of the gases and tiny particles that were in the atmosphere at the time. Scientists can learn a lot from these layers. They can learn about the makeup of the atmosphere. They can learn about past events, such as volcanic eruptions and meteorite impacts. They can learn the average temperature. So far, scientists have studied ice cores up to 800,000 years old.



Scientists cutting into ice core samples



Investigate fossils. Obtain a selection of fossils from your teacher.

For each fossil:

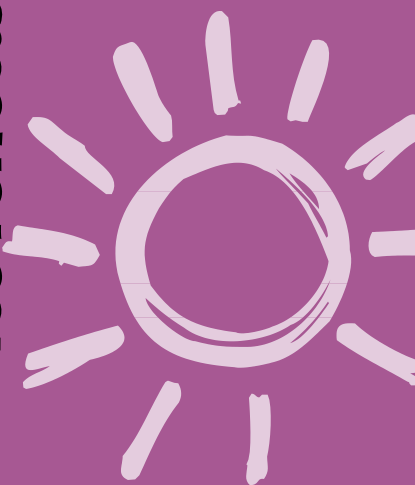
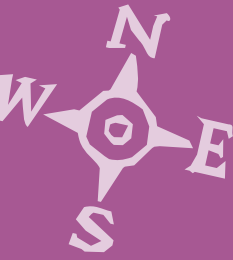
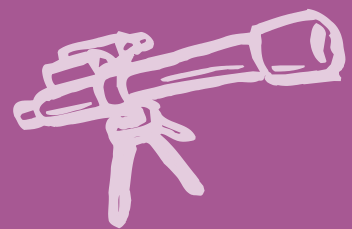
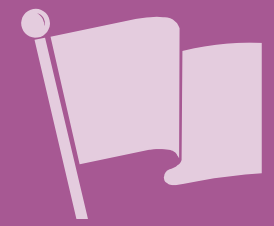
- Draw a sketch.
- Describe what parts of the plant or animal are preserved.
- Compare it to living things that are on Earth today.
- Describe what environmental conditions the plant or animal would have needed to live.
- Identify the ecosystem in which the plant or animal most likely lived.

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.



Arctic & Antarctic Icebergs



“Ice reflects more sunlight than other materials on Earth’s surface.”