

## Climates Climate Zones

The Earth's surface is made up of many different climates. To help them organize it all, climatologists (scientists who study climates) have grouped climates that are similar. Each group has the same kinds of vegetation, average temperature, and **precipitation**.<sup>1</sup> Here's a look at some of the major groups.

### Tropical Climates

Right around the equator is the tropical climate zone. This zone is mostly found between the Tropic of Cancer and the Tropic of Capricorn. In some places it extends as wide as 30 degrees north and 30 degrees south latitude. Tropical climates receive a lot of sunlight and are very warm. Rainfall is heavy, so they are also very wet. This climate is perfect for rainforests, teeming with an amazing amount of life and growth. Hot and muggy conditions provide a **habitat**<sup>2</sup> for many different types of plant and animal species.

### Desert Climates

Deserts barely receive any rain. Usually the average rainfall for an entire year is less than 10 inches. Some years it may not rain at all. Desert air is so hot that when rain does fall, it can evaporate even before it reaches the ground! Deserts often receive full sunlight because there are no clouds to **filter**<sup>3</sup> the sun's rays. At night deserts can be extremely cold. The soil in a desert is dry and often sandy. Very little life **thrives**<sup>4</sup> in the desert. Cacti are one exception. The cactus plant has **evolved**<sup>5</sup> so that it stores water. The stem of the cactus is like a water bottle. It is full of water and allows very little to leave the plant. Some famous deserts include the Sahara in West Africa and the Mojave in the United States.

### Savannas

Savannas are often found between tropical climates and subtropical deserts. Savannas have vegetation, but it is mostly scrub and brush. There is not enough water for many trees. The grasses grow during a very short rainy season. They then die in the completely dry winter months.

### Temperate Climates

Temperate is a synonym of moderate. The weather in temperate climates is never too extreme. Summers are warm and wet. Winters are cool and dry. Neither season has very hot or very cold temperatures. Many plant and animal species thrive in these moderate conditions. Most of the United States falls into

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<sup>1</sup> **precipitation:** moisture in the form of rain, snow, sleet, ice or hail

<sup>2</sup> **habitat:** the place where an animal or plant naturally grows

<sup>3</sup> **filter:** to lessen the intensity of by preventing passage through

<sup>4</sup> **thrive:** to grow well

<sup>5</sup> **evolve:** to gradually develop characteristics that will help a species survive in an environment; adapt

the region of temperate climates.

**Polar Climates**

Have you ever heard of the polar ice caps? The ice caps are the regions at the North and South Poles that are always covered in frozen water--either snow or ice. Polar climates occur only above 60 degrees north latitude or below 60 degrees south latitude. They are the coldest climates on Earth. Polar regions get less of the sun's direct rays because of the tilt of the Earth's axis. Temperatures are extremely low, especially during winter when it is dark for six months straight! Precipitation is rare and almost always in the form of snow.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. According to this passage, a region that is in a desert climate
  - a. receives a lot of rain.
  - b. might have a lot of cacti plants.
  - c. would have a lot of penguins living there.
  - d. would have a lot of trees.
  
2. How is the information about climate zones organized in this passage?
  - a. Each paragraph discusses a different characteristic of climates.
  - b. The climate zones are first compared with each other, then contrasted with each other.
  - c. Each paragraph following the introduction provides a general description of a specific climate zone.
  - d. The climate zones are described in order from coldest to warmest.
  
3. The passage states, “Polar regions get less of the sun’s direct rays because of the tilt of the Earth’s axis.” What can we conclude about how these regions would be different if Earth was not tilted on its axis?
  - a. The polar regions would get more sunlight.
  - b. The polar regions would exist elsewhere on Earth.
  - c. The polar regions would not have precipitation.
  - d. The polar regions would be even colder.
  
4. In the second paragraph, the author describes rainforests as places that are “teeming with an amazing amount of life and growth”.

**Teeming** most nearly means

- a. destroyed
  - b. lacking in.
  - c. full of.
  - d. very wet.
  
5. What is the main purpose of this passage?
  - a. To compare weather patterns on different continents.
  - b. To describe how easy it is for humans to live in different climates.
  - c. To list major climate zones and describe them.
  - d. To discuss places on Earth with the most extreme weather.

6. Describe the vegetation in a savanna.

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7. Why might it be useful for climatologists to group areas with similar climates into zones?

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8. The question below is an incomplete sentence. Choose the answer that best completes the sentence.

\_\_\_\_\_ Polar regions get less of the sun’s direct rays, they are the coldest climates on Earth.

- a. so
- b. yet
- c. although
- d. because

9. Read the following sentence.

**Many plant and animal species thrive in the temperate climate zone because the weather is never too extreme there.**

Answer the questions below based on the information provided in the sentence you just read. One of the questions has already been answered for you.

What? many plant and animal species

Do what? \_\_\_\_\_

Where? \_\_\_\_\_

Why? \_\_\_\_\_

10. **Vocabulary Word:** thrive (*verb*): to grow or develop well; to be successful, healthy, or strong.

Use the vocabulary word in a sentence: \_\_\_\_\_

\_\_\_\_\_

## Teacher Guide and Answers

**Passage Reading Level:** Lexile 800

**Featured Text Structure:** Enumerative – the writer includes a list, giving examples of something. This text structure is often combined with cause/effect or problem/solution

**Passage Summary:** The passage describes different climate zones, including information about temperatures, average rainfall and types of plants in each.

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**Suggested answer:** Savannas have vegetation, but it is mostly scrub and brush. There is not enough water for many trees. The grasses grow during a very short rainy season. They then die back in the completely dry winter months.

7. Why might it be useful for climatologists to group areas with similar climates into zones?

**Suggested answer:** The zones help keep the information organized. The scientists know what to expect from each zone because places in each climate zone have similar vegetation, temperature and precipitation. You can know whether a plant or animal can live in a new place if it is in the same climate zone. This type of information helps scientists to understand these environments more.

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What? many plant and animal species

Do what? **thrive**

Where? **in the temperate climate zone**

Why? **the weather is never too extreme there**

10. **Vocabulary Word:** thrive (*verb*): to grow or develop well; to be successful, healthy, or strong.

Use the vocabulary word in a sentence: answers may vary.