Social Studies Background

Climate is the pattern of weather over a long period of time. Different parts of Earth have different climates. There are generally three climate zones: polar, tropical, and temperate. While these zones have common characteristics, there are variances within the zones due to a variety of factors, such as landforms and proximity to water bodies.

The polar zones are the coldest zones because the Sun’s rays do not fall directly on them. There is little or no sunlight during winter in these zones, resulting in very long and cold winters in places such as Iqaluit, Nunavut. There is generally little precipitation because cold air holds less moisture than warm air.

The tropical zones are near the equator. Places within this zone are among the warmest on Earth because the Sun’s rays shine more directly over the equator. As a result, these zones are hot year
Warm air from the ocean blowing through the tropical zones brings a great deal of precipitation, resulting in rainy seasons. However, there are exceptions, such as deserts, in these zones. Luxor, Egypt, for example, is in the Sahara Desert and gets almost no precipitation.

In temperate zones, temperatures can vary throughout the year depending on the position of the Sun. As a result, these zones have four seasons. Average temperatures are not extreme, unlike those in the other two climate zones. Areas away from oceans tend to have cold winters and hot summers, while those closer to oceans have mild winters and cool summers. As one example, coastal places in British Columbia, such as Duncan, in the Cowichan Valley on Vancouver Island, exemplify the latter conditions. Precipitation levels vary within the temperate zone. For example, Beijing, China, receives 572 mm of precipitation each year. To its east, Shirakawa-gō, Japan, receives four times that amount annually.

**Purpose**

In this activity, children will use map features to learn about Earth's three different climate zones: the polar zone, the temperate zone, and the tropical zone. They will identify these three climate zones on the map shown above and make inferences about four different places in the world based on the climate zones in which they are located. Children will then do some research to find out about wildlife in these three zones. They will choose an animal and make a drawing that shows in which climate zone it lives.

**Materials**

- Art materials such as paper, pencil, crayons, water colours, finger paint

**Interpret a Climate Zone Map**

1. Direct children's attention to the map of Earth's climate zones shown above. Ask them, **What map features can you identify?** (Earth's continents and oceans with their labels, a line going around the middle of the Earth called the equator, several places shown by dots and labels, a compass rose showing the four directions—north, east, south, and west—a legend explaining what the map shows, and a scale to give a sense of distance in kilometres)

2. Ask children, **How do these map features help you learn about the climate zones of the world?** **For example, what does the legend tell you?** (The legend tells me that Earth has three different climate zones: polar, temperate, and tropical. The map uses three different colours to show where Earth's three climate zones are.)

3. Now say, **Find Duncan on the map.** Tell children that Duncan is a city in the province of British Columbia in western Canada. Ask children, **What climate zone is Duncan in? What can we infer about Duncan from this climate zone?** (Duncan is in the temperate zone. I see from the map that most of North America is in the temperate zone. I know there are seasons in this zone because we have four seasons in Canada. So, it can get hot in the summer, cool in the spring and fall, and cold in the winter. That's what it must be like in Duncan, probably, because Duncan is in Canada.)
4. Now ask children, **Where is Iqaluit? What climate zone is it in?** (It is way up north on Baffin Island. It is in the polar zone. Ask, **How do you know that Iqaluit is in the polar zone?** (The part of the map that it’s on is coloured purple and purple stands for the polar zone.) Ask, **What can we infer about Iqaluit from this climate zone?** (“Polar” probably means that it’s near the North pole. So it’s likely very cold and snowy in Iqaluit much of the time.) **What might life be like in the polar zone?** (People living in the polar zone may do a lot of winter sports like hockey and skidooning. It must cost a lot to heat the buildings. Food must cost a lot because there isn’t enough sunlight to grow crops, so food has to be flown in on an airplane.)

5. Now ask children to find Shirakawa-gō on the map. Ask, **What climate zone is Shirakawa-gō in? How do you know? What can we infer about Shirakawa-gō from this climate zone?** (It is in the temperate zone. I know because it is on a part of the map that is coloured yellow and yellow stands for the temperate zone. This place probably has seasons like Duncan has because Duncan is in the temperate zone, too.)

6. Ask children in which country Luxor is located on the map. (Egypt) Ask, **What climate zone is Luxor in?** (tropical) **What can we infer about Luxor from this climate zone?** (I think it must be hot in Luxor. There are probably palm trees there because I have read some books about Egypt and tropical places.)

**Draw an Animal from a Climate Zone**

1. Invite children to select one of Earth’s three climate zones and, with a grownup’s help, do some online research to find out about a few animals that live in that climate zone. For example, polar bears, whales, and penguins live in the polar zone; sparrows, deer, and squirrels live in the temperate zone, and spider monkeys, sloths, and jaguars live in the tropical zone.

2. Ask children to choose one animal from the climate zone they have chosen and to draw a picture of that animal in its natural environment. Ask them to write a caption for their drawing that identifies the animal and the climate zone in which it lives.

3. Other family members might research and draw an animal as well to display in a “Climate Zone Wildlife Gallery” set up on a wall or bulletin board at home.

**Extend the Learning**

1. Children may wish to create an illustrated adventure story featuring their chosen animal as the main character.

2. They may wish to read their story aloud to family members either in person or virtually.