

Teaching Activity: Worldwide Climate Zones

Introduction: Climate and weather are closely related terms that describe the conditions of the atmosphere. They differ primarily in the length of time the atmospheric properties are observed. Weather represents hour-to-hour and day-to-day conditions of the atmosphere for a particular location. Climate is the average of all the weather changes over an area for a period of many years. Since an area's weather is composed of several elements, classification of climates can become complex and involved. For the purpose of this activity, however, we will limit the classification of climates to the two weather elements, *temperature and precipitation*. The boundaries of the climate zones of the Earth are listed by isotherms. An *isotherm* is an imaginary line that connects areas with similar average low temperatures during their coldest month of the year. The 10°C isotherm, for example, connects all locations that average colder than 18°C for the coldest month of the year. Below is a table listing the three major climate zones of the Earth and a short description of each climate type.

Climate Type	Boundaries	Comments
TROPICAL	Bounded on the north and south by the 18°C isotherm.	Temperatures are uniformly warm during the whole year and there is no true winter season.
TEMPERATE	Bounded on the poleward side by the 10°C isotherm and on the equator side by the 18°C isotherm.	Temperatures are high during the summer and low during the winter.
POLAR	Bounded on the equator side by the 10°C isotherm.	Temperatures are low during the whole year and there is no true summer; summers are warmer than winters.

Objective:

- To identify the Earth's climate zones by isotherm boundaries;
- To analyze a map of the Earth's climate zones;

Important Terms: Isotherm, climate, weather, temperature, precipitation, ;

Materials: Copy of Student Activity Sheet, paper, pencil, colored pencils, world map;

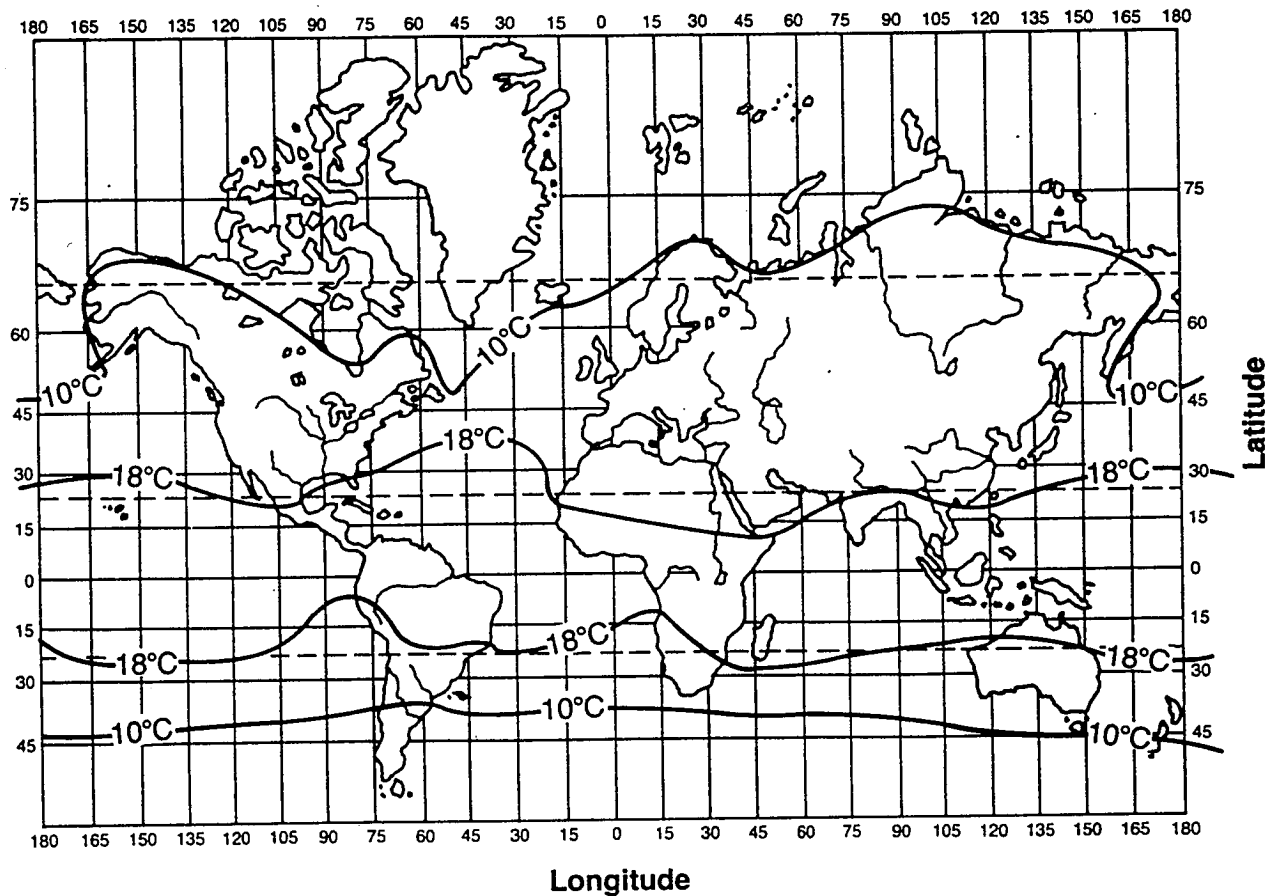
Procedure:

1. Referring to the world climate zone map in Part I.

- Help students locate the 10°C and 18°C isotherms.
- Have students label the three climate groups on the map.
- Students should color the zones as follows:
Polar zone -----Blue
Temperature Zone-----Green
Tropical Zone -----Yellow

2. Instruct students to complete the activities in Part II.

Map of the Earth's Climate Zones:



Student Activity Sheet: Worldwide Climate Zones

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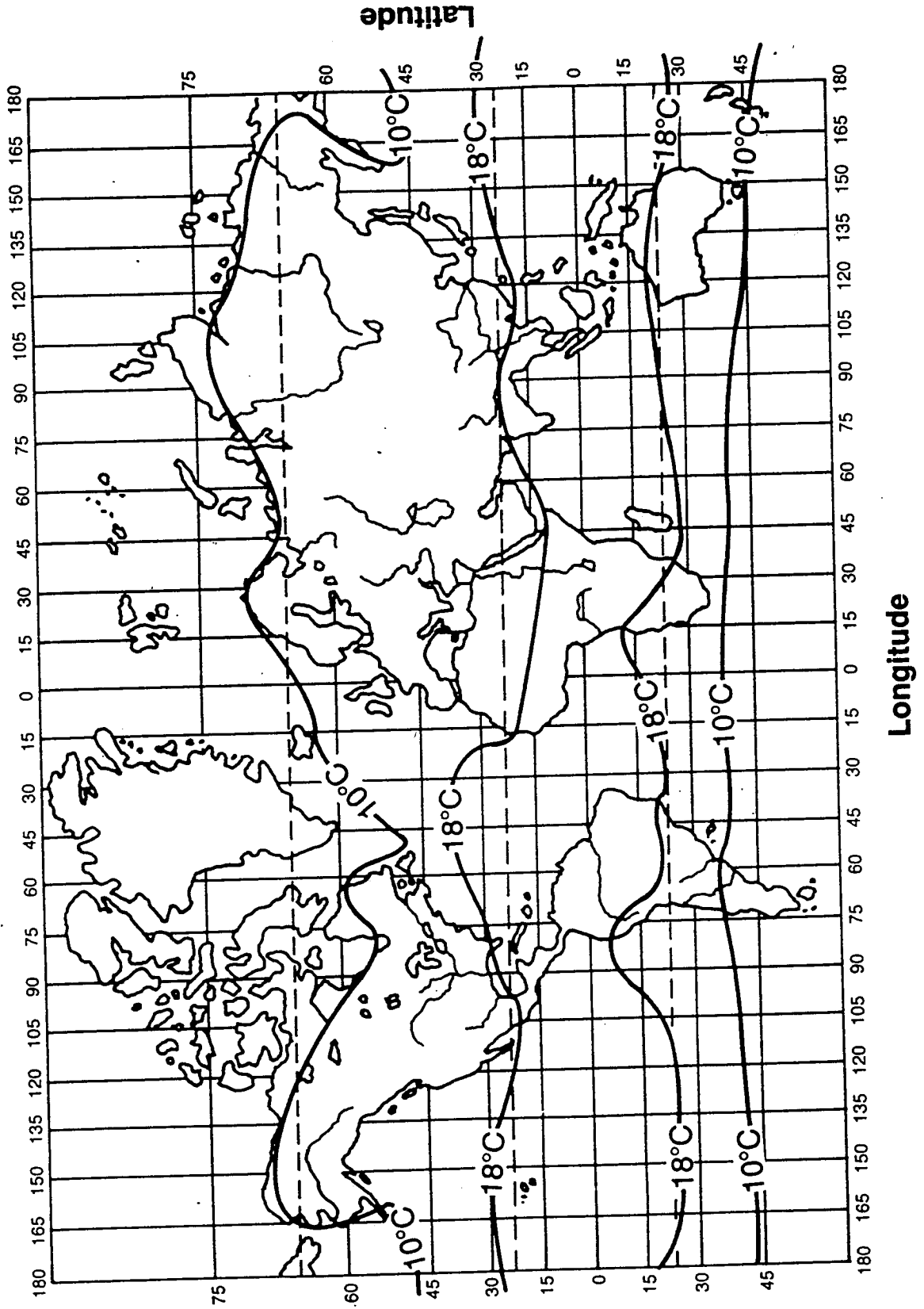
Objective:

- To identify the Earth's climate zones by isotherm boundaries;
- To analyze a map of the Earth's climate zones;

Procedure:

1. Refer to the map of the Earth's climate zones in **Part I**.
 - Locate the 10°C and the 18°C isotherms.
 - Label the three climate groups on the map.
 - Color in the 3 climate zones as follows:
 - Polar zone -----Blue
 - Temperate zone -----Green
 - Tropical zone----- Yellow
2. Complete the activities in **Part II**.

Student Activity Sheet: Part I: Map of the Earth's Climate Zones



Student Activity Sheet: Part II: Analysis and Comprehension

1. Identify two countries above and below the 10°C isotherm.

2. Identify one country and one ocean that is located between the 10°C and the 18°C isotherms.

3. Identify 2 countries and an ocean that are located between the 18°C isotherms.

4. Which climate type experiences no time during the year when the average monthly temperature is cooler than 18°C?

Name a location within that climate type. _____

5. Which climate type experiences at least one month during the year when the average monthly temperature is warmer than 10°C but never experiences a month with temperature above 18°C?

Name a location within that climate type. _____

6. Which climate type experiences no time during the year when the average monthly temperature is higher than 10°C?

7. The major worldwide climate types are classified according to which atmospheric property?

8. Pick one of the three climate types. Write 5 sentences about what it would be like to live there. (Consider: Clothing, housing, outdoor activities, etc.)
