



# CH 5.1: RATE OF WEATHERING ACTIVITY (ANNUAL RAINFALL)

## Directions

- Color the map on the reverse side with the correct colors for each region of rainfall.
  - Region A = Red
  - Region B = Orange
  - Region C = yellow
  - Region D = Light Green
  - Region E = Dark Green
  - Region F = Blue
- After coloring the map, read the article and answer the questions below.

## ANNUAL RAINFALL

### IN INCHES

UNDER 10<sub>A</sub>

10 - 20<sub>B</sub>

20 - 40<sub>C</sub>

40 - 60<sub>D</sub>

60 - 80<sub>E</sub>

OVER 80<sub>F</sub>

### IN CENTIMETERS

UNDER 25<sub>A</sub>

25 - 50<sub>B</sub>

50 - 100<sub>C</sub>

100 - 150<sub>D</sub>

150 - 200<sub>E</sub>

OVER 200<sub>F</sub>

The average amount of rain falling on the entire Earth each year is 35–40 in. (89–102 cm), but the actual amount falling on different regions varies from 0 to 400 in. (1,000 cm). The tropics, especially close to the Equator, get the most rainfall because the Sun's heat is strongest in this region.

The greater the heat, the greater the amount of evaporation of water from oceans, lakes, rivers, and reservoirs (warmer air will hold the most moisture). The evaporated water becomes water vapor, which rises in the warm air. Air cools at higher altitudes, and the water vapor condenses and forms clouds. Water droplets form, and thousands of them combine to create each raindrop that is part of rainfall.

Rainfall tends to be heaviest over or near large bodies of water. Rainfall is usually very light in the interiors of continents and in the ice-covered polar regions. It is heaviest where seasonal winds (monsoons) bring vast quantities of moisture from the sea. Monsoons contributed to the highest annual rainfall ever recorded: 1,042 in. (2,847 cm) in Cherrapunji, India, north of the Bangladesh border.

The windward sides of mountains tend to be much wetter than the leeward sides because moisture-laden winds sweep upward to the cooler elevations, causing accelerated condensation and the release of rain. The moisture-free winds then pass over the peaks and down the leeward slopes, only to intensify the dryness of those lands lying in the rain shadow. The Pacific Northwest of the United States and Canada shows how the presence of tall mountains can influence climate—very little rain originating in the Pacific Ocean can cross the massive ranges into the dry interior.

Unusual coastal deserts are found along the west coasts of Africa and South America where cold ocean currents, lying offshore, cool the moisture-laden clouds, causing rain to fall before the clouds can reach land.

Most rainfall is seasonal, but on the northwestern and eastern coasts of North America, in northern and western Europe, and on the eastern coast of South America, it can rain at any time of the year. In some Equatorial regions, such as the Amazon Basin, it usually rains daily.

## Questions:

1. What two factors affect the rate in which a rock weathers? \_\_\_\_\_
2. Since rainfall is related to moisture, what region will have the greatest weathering of rocks? \_\_\_\_\_
3. What latitude line does this region fall next to? \_\_\_\_\_
4. Why does this region receive so much rain? \_\_\_\_\_
5. Which side of a mountain will have more weathering being taken place? \_\_\_\_\_



To indicate its relationship to the three continents of the Southern Hemisphere, Antarctica is shown here much larger than its actual size. (See plate 44).