

OCEAN TEMPERATURES



How do ocean temperatures vary over Earth's surface?

What is the major source of energy on Earth?

What factors influence climate?

BACKGROUND INFORMATION

Did you know that surface temperatures of the ocean vary? Even where an ocean is several kilometers deep, the majority of the sun's energy is absorbed at the surface (approximately the top 400 m, 1,312 ft). Hydrologists and climatologists study changes in ocean surface temperatures to learn more about the movement of ocean water and its effects on climate.



ACTIVITY PART 1

1. Scientists record temperature in Celsius
2. In the USA we measure temperature in Fahrenheit.
3. Complete a table to help you better understand Activity #2
4. The table is in Google Classroom
5. Hint: to convert a temperature from Celsius to Fahrenheit, multiply it by 1.8 and then add 32.



ACTIVITY PART 2

1. You are studying the average (mean) ocean temperatures on the Earth's surface.
2. You will need the world map to complete this activity.
3. The shaded areas are land
4. This map is a Pacific view, meaning the Pacific Ocean is in the center
5. 0° latitude is the **Equator**
6. 0° longitude is the **Prime Meridian**, it is not drawn in
7. You will need colored pencils



ACTIVITY PART 2 CONTINUED

1. Use this Temperature Color Key to shade ocean temperatures
 - a. **Red** 30°C and up
 - b. **Orange** 25–29°C
 - c. **Yellow** 20–24°C
 - d. **Green** 15–19°C
 - e. **Blue** 10–14°C
 - f. **Purple** 5–9°C
 - g. **Brown** 0–4°C
 - h. **White** Below 0°C
2. When shading, connect regions in the same temperature range.
3. Be sure to use your colors all the way to the borders of the land.



WHAT DID YOU LEARN?

- Did you notice any patterns in temperature ranges?
- Did you notice any relationships between the temperatures and latitude?
 - **Latitude:** lines on the globe that circle parallel to the Equator
 - **Longitude:** lines that circle the globe and meet at the north and south poles.
- Were there any unusual highs or lows? How can you explain these unusual differences?
- Share your assignment with your teacher :)



Temperature Conversion Table

Temperature °C	Temperature °F
0	
5	
10	
15	
20	
25	
30	

Hint: To convert a temperature from Celsius to Fahrenheit, multiply it by 1.8 and then add 32.

TEMPERATURE COLOR KEY	Red	30°C and up	Blue	10-14°C
	Orange	25-29°C	Purple	5-9°C
	Yellow	20-24°C	Brown	0-4°C
	Green	15-19°C	White	Below 0°C