III. Gather Data

A. Current Speed and Direction vs. Depth

The World Ocean Circulation Experiment (WOCE) made observations using current meter moorings as part of a large climate research study. In the following section you will be using data from WOCE site ACM7 off the coast of Brazil.

- Click to see the map of all the mooring sites.
- Click "Back" to return to the Ocean Currents "Gather Data.1" web page.
- Click the "WOCE CURRENT METER DATA" site.
- Click on "ACM7 - Equatorial Atlantic."
- Find mooring K327 at 100 meters depth and click "view metadata."

1. Fill in the missing information in Chart 1 below.

Chart 1

Mooring Name	K327	K340	K341	K360	K361
Depth of Current Meter					
Seafloor Depth					
Mean (average) Current Speed					
Mean Degrees of Current Direction					
Mean Compass Current Direction (N, S, E, W)					
Latitude/ Longitude					

- Click "Back" to return to the data tables.
- Scroll to the next table.
- Find mooring K340 at 50 meters depth and click "view metadata."

2. Fill in the missing information in Chart 1 in the activity book

- Click "Back" to return to the data tables.
- Scroll to the table with mooring K341 at 50 meters depth and click "view metadata."

3. Fill in the missing information in Chart 1 in the activity book

- Click "Back" to return to the data tables.
- Scroll to the table with mooring K360 at 100 meters depth and click "view metadata."

4. Fill in the missing information in Chart 1 in the activity book

- Click "Back" to return to the data tables.
- Scroll to the table with mooring K361 at 50 meters depth and click "view metadata."

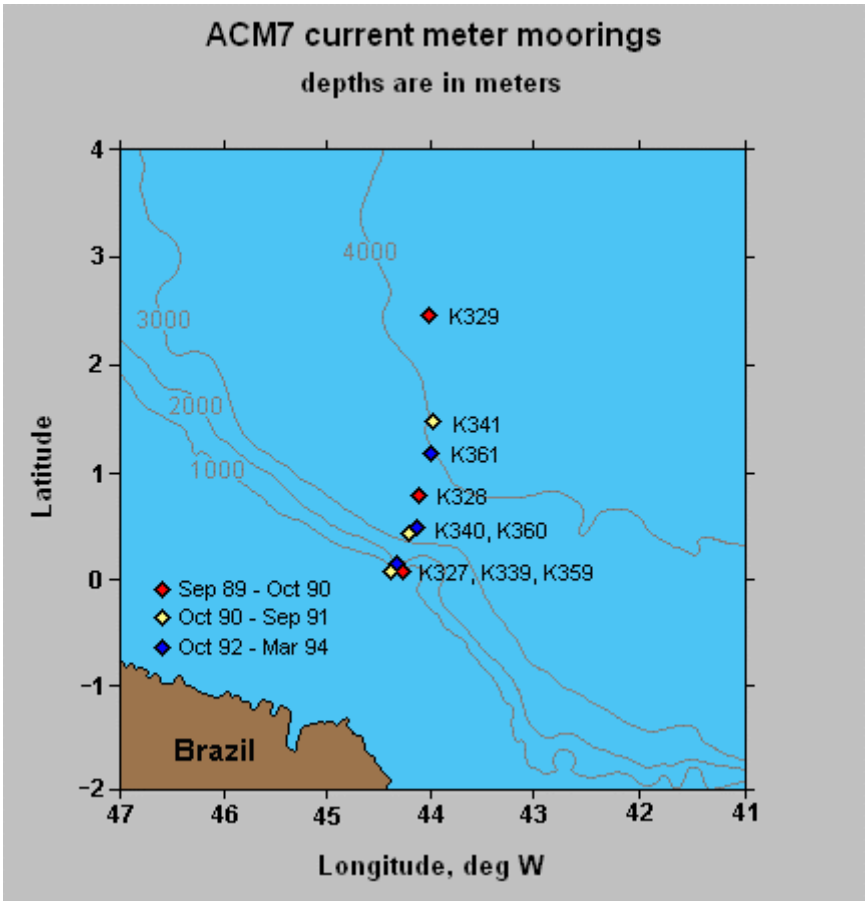
5. Fill in the missing information in Chart 1 in the activity book

- Click "Back" to return to the Ocean Currents "Gather Data.1" web page.

- Click "Forward" at the bottom of the page.

- Use Chart 1 and the map of the Brazilian coast to help you complete the following activities.

6. On the map, draw arrows showing the direction of the current. The arrowheads should point in the direction the current flows <u>from</u> the station.



7. What is the relationship between seafloor depth and current speed?

_____

_____

8. Does the current seem to flow only along the shore, out to sea, or into the shore? _____

B. Open Ocean Current Speed and Direction at 45 Meters

- Click on the "Tropical Atmosphere Ocean Array 45 Meter" site. (Current speed is shown as centimeters per second on the vertical scale.)
- Look at the top graph.

1. What <u>month</u> has the greatest current speed? _____
2. What <u>season</u> shows the greatest current speed? _____

- Look at the bottom graph.

3. What <u>season</u> shows the least variation (change) in direction of current flow? _____
4. What is the <u>compass direction</u> of flow during this <u>season</u>? _____
5. Write the average current speed in June at 45 meters in Chart 2 below.

- Write the number that best fits the graph during June. The graph will not be a straight line, so use a best estimate of the average directions and speeds.

6. Write the average current direction in June at 45 meters in Chart 2 below.

- Click "Back" to return to the Ocean Currents "Gather Data.2" web page.
- Click "Forward" at the bottom of the page.

Chart 2

Depth	Average June Current Speed	Average June Current Direction	
		degrees	compass
45 m	cm/sec		
160 m	cm/sec		
250 m	cm/sec		

C. Open Ocean Current Speed and Direction at 160 Meters

- Click on the "Tropical Atmosphere Ocean Array 160 Meter" site.
- Look at the top graph.

1. Write the average current speed in June at 160 meters in Chart 2 above.

- Look at the bottom graph.

2. Write the direction of current flow in June at 160 meters in Chart 2 above.

- Click "Back" to return to the Ocean Currents "Gather Data.3" site.

D. Open Ocean Current Speed and Direction at 250 Meters

- Click on the "Tropical Atmosphere Ocean Array 250 Meter" site.
- Look at the top graph.

1. Write the direction of current flow in June at 250 meters in Chart 2 above.

- Click "Back" to return to the Ocean Currents "Gather Data.3" web page.

E. Interpreting Data in Chart 2

1. Is there a relationship between depth and current speed? If so, what is it?

_____

_____

2. Is there a relationship between depth and current direction? If so, what is it?

_____

_____

F. GPS-Upgraded Drifters

- Click on the "Global Positioning Satellite Tracking" site.
- Scroll down to the second picture.
- Read the paragraph between the second and third pictures.

1. What advantage is there to running the drifter's transmitter more often?

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