

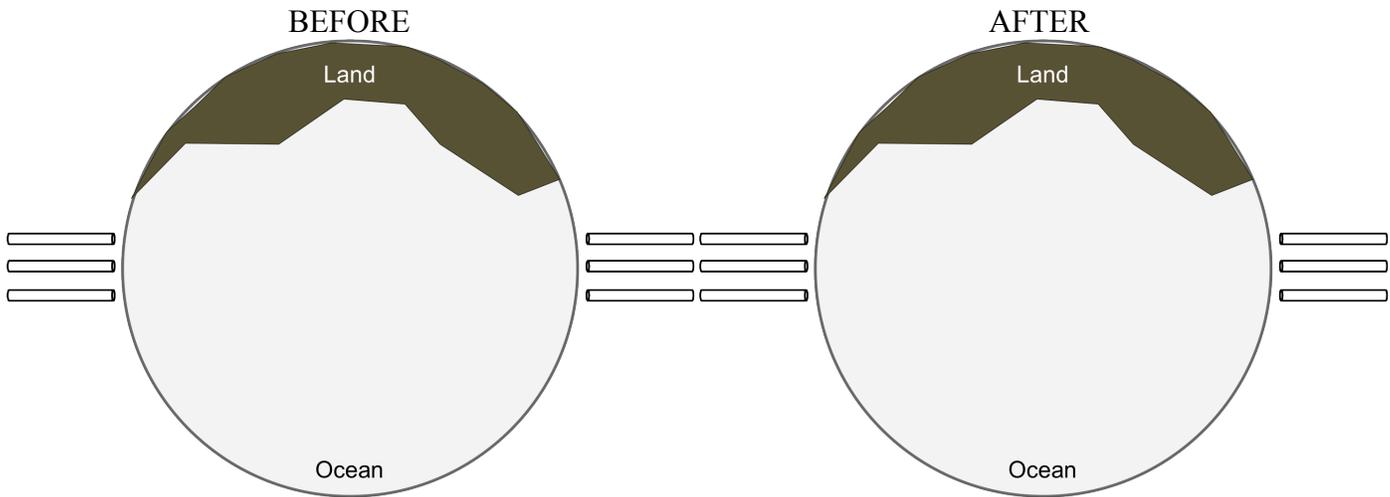
Ocean Convergence: Let's Get Together – Worksheet (TEACHER ANSWER KEY)

Name: _____

Date: _____

Model Demonstration:

1. Draw the pattern of the confetti before and after your group blew “wind” across the “ocean.”



Map Data Interpretation:

2. When was your map created (what time and date did the data come from)?

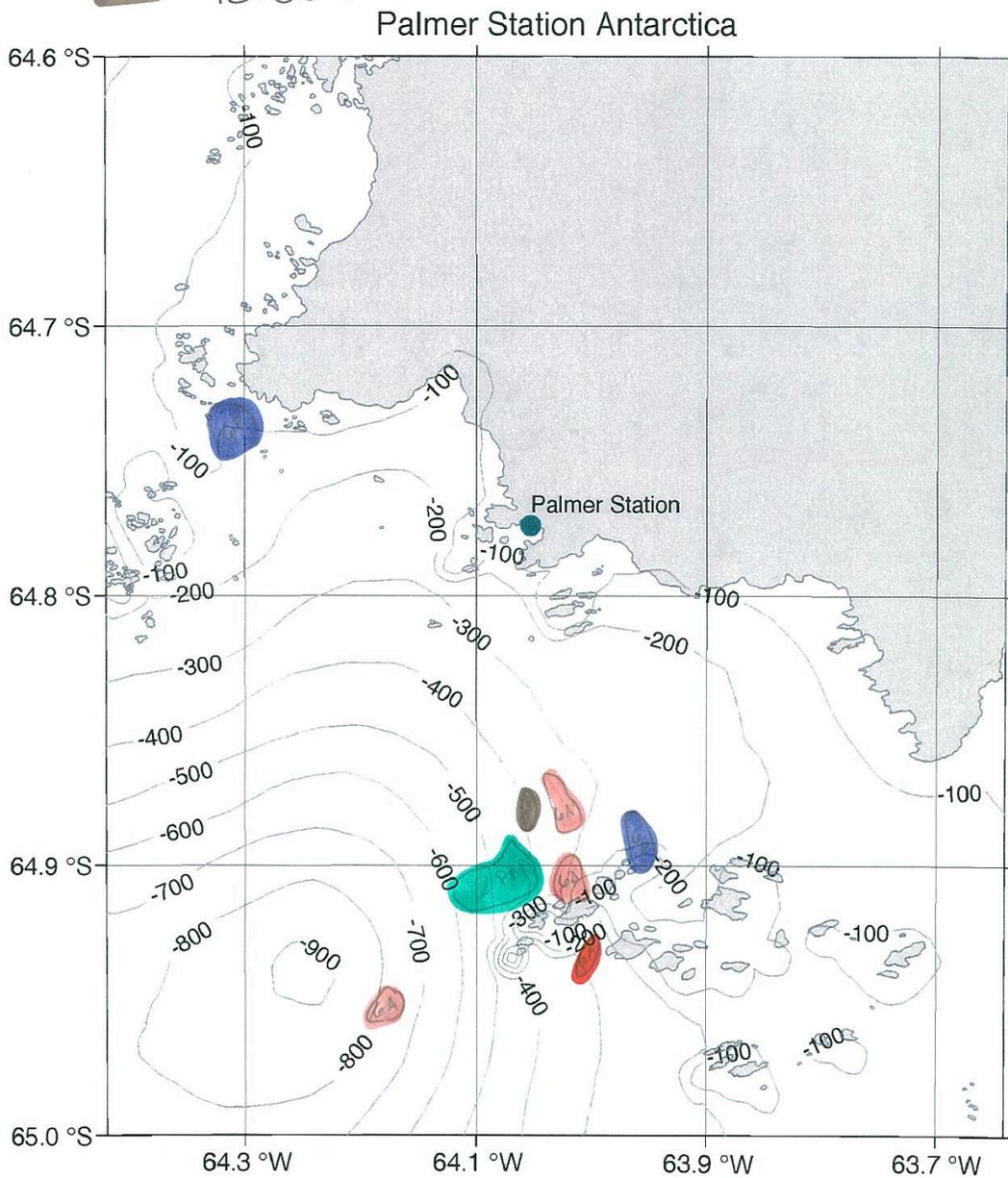
3. Did you observe any convergence zones (two darkest orange colors) on your map? If so, where was it?

4. Was the general location (in the ocean vs. near land) of the convergence zones on your map similar or different than your patterns of the confetti from earlier? Explain what you mean.

Scientific Explanation: Are there differences in the location and/or size of convergence zones over time near Palmer Station?

Draw the location of the convergence zones from all of the maps on the map below.

-  = 2:00 AM (none)
-  = 6:00 AM
-  = 10:00 AM
-  = 2:00 PM
-  = 6:00 PM
-  = 10:00 PM



Evidence: Provide scientific data from the Surface Currents & Convergence Zone map to support your claim. Use appropriate and sufficient data.

The location of the convergence zones varies North-South from 64.74 S to 65.95 S and the location varies East-West from 64.32 W to 63.95 W. Also, both the overall size of the convergence zone varies as well as the strength from 7.5 cm/s per km (second darkest purple) to 22 cm/s per km (darkest purple) among the different convergence zones throughout the day.

Reasoning: Use your evidence to show how your data result in your claim. Also, tell why your data count as evidence to support your claim by using scientific principles. Remember, reasoning is the process where you apply your science knowledge to answer the question.

There is a difference in the location of convergence zones over time because the latitude and longitude of the convergence zones varies among the different time periods we have data from. There is a difference in the expanse of the convergence zones over time because the area that the convergence zones take up changes from small at 10:00AM and 10:00PM to largest at 2:00PM.

There is a difference in the strength of the convergence zones over time because at most points in time (6:00AM-10:00PM) convergence zones of 7.5-12.5 cm/s per km existed, but at 2:00PM there was also a convergence zone of 12.5-22 cm/s per km.

Also, at 2:00AM there were no convergence zones, but they did exist at other points in time.

All of these lines of evidence demonstrate that there were differences in the location and size of convergence zones over time near Palmer Station on January 12, 2013. Knowing that the ocean is dynamic, it is reasonable to conclude that if there are differences in location and size on one day there would be on other days as well. Therefore, there are differences in the location and size of convergence zones over time.

Claim: Write a statement that responds to the above driving question.

There are differences in the location and size (expanse and strength) of convergence zones over a 24-hour time period near Palmer Station.

What new questions do you have?