

Weather on the Move

Track how large air and water patterns shape local measurements.

SC.6.E.7.3 "Describe how global patterns such as the jet stream and ocean currents influence local weather in measurable terms such as temperature, air pressure, wind direction and speed, and humidity and precipitation."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each global pattern. Circle each local weather measurement or measured change that the pattern can influence, then write J for jet stream or O for ocean current beside it.

Big Patterns, Local Weather

- ① High above North America, the jet stream is a fast river of air that usually blows west to east. Its bends can steer weather systems toward or away from a place. When a dip in the jet stream moved south over a town in South Carolina, cooler air arrived from the north. The local temperature fell from 78°F to 64°F. Air pressure rose as the cooler, denser air moved in, and winds shifted from southwest at 10 mph to northwest at 18 mph.
- ② Ocean currents also carry heat across long distances. The Gulf Stream moves warm water from the Gulf of Mexico into the Atlantic Ocean. In winter, water near the South Carolina coast can be warmer because of this current. Warm water adds water vapor to the air above it. If wind blows from the ocean toward land, the local air may become more humid. Rising humid air can form clouds and precipitation, especially when it meets cooler air.
- ③ These patterns do not control every day by themselves. A local forecast also depends on nearby fronts, land, and daily heating. Still, scientists measure changes to learn how a large pattern affects one community. Thermometers show temperature. Barometers show air pressure. Wind instruments show direction and speed. Humidity sensors measure water vapor, and rain gauges measure precipitation. Together, these measurements can show that a shift in a jet stream or an ocean current changed local weather conditions.

2 ANSWER WITH EVIDENCE Use the passage

1 After the jet stream dip moved south, what happened to the local temperature, air pressure, and wind?

2 How can the Gulf Stream make air over nearby land more humid?

3 Explain how humid air connected to the ocean current can lead to precipitation.

4 Which tools would scientists use to measure air pressure, humidity, and precipitation?

3 YOUR TURN Your own words

Choose either the jet stream or an ocean current. In 2 sentences, explain how a change in that pattern could affect a town and predict exactly three measurable changes from this list: temperature, air pressure, wind direction and speed, humidity, and precipitation.

PART 1 • READ AND MARK

Underline each global pattern. Circle each local weather measurement or measured change that the pattern can influence, then write J for jet stream or O for ocean current beside it. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	After the jet stream dip moved south, what happened to the local temperature, air pressure, and wind?	Temperature fell from 78°F to 64°F. Air pressure rose. Wind shifted from southwest at 10 mph to northwest at 18 mph.
2	How can the Gulf Stream make air over nearby land more humid?	The Gulf Stream warms ocean water. Warm water adds water vapor to the air, and wind from the ocean can carry that humid air toward land.
3	Explain how humid air connected to the ocean current can lead to precipitation.	Warm ocean water adds water vapor to the air. When humid air rises and meets cooler air, it can form clouds and precipitation.
4	Which tools would scientists use to measure air pressure, humidity, and precipitation?	They would use a barometer for air pressure, a humidity sensor for humidity, and a rain gauge for precipitation.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A southward dip in the jet stream could steer northern air toward a town. The temperature could fall, air pressure could rise, and wind direction could shift from southwest to northwest.

Accept accurate explanations that connect the chosen global pattern to local weather. The response must name exactly three measurable changes from the listed categories and make scientifically reasonable predictions.