

# LESSON 8

## How is air changing before, during, and after a cold front?

### STEP 1: Describe the air temperature before, during, and after the cold front.

Imagine your town has just received a weather report that a cold front is heading your way. Read the weather report and analyze temperature, humidity, and wind data to figure out what happened during this storm.

#### WEATHER REPORT

A cold front is expected to change temperatures in the area after an extended warm-up. The cold front will arrive in South Riding, Virginia, on the morning of October 21, 2016. Be prepared for a change in temperature over two days as the front passes through the area, replacing a warm air mass with a cold air mass.

Circle the data on the graph that shows when the cold front passes through South Riding, VA. Describe the graph using the **What I See** and **What It Means** statements.

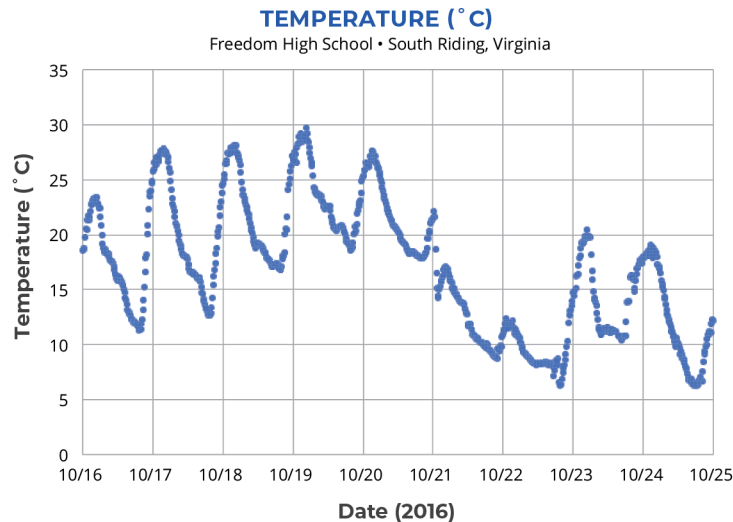


**WHAT I SEE:** Look at different parts of the graph. Do you notice patterns? Do you notice interesting differences? Write **What I See** statements on the graph to record your observations.



**WHAT IT MEANS:** Next to each **What I See** statement, write a **What It Means** statement to explain what you think is happening in each part of the graph.

*Note: The vertical lines on the graph indicate noon on each of the dates listed on the x-axis.*



1. Describe the air temperature pattern before the cold front.



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**STEP 1 CONTINUED:** Describe the air temperature before, during, and after the cold front.

- Describe the air temperature pattern after the cold front.
- How does air temperature change when the front moves through?

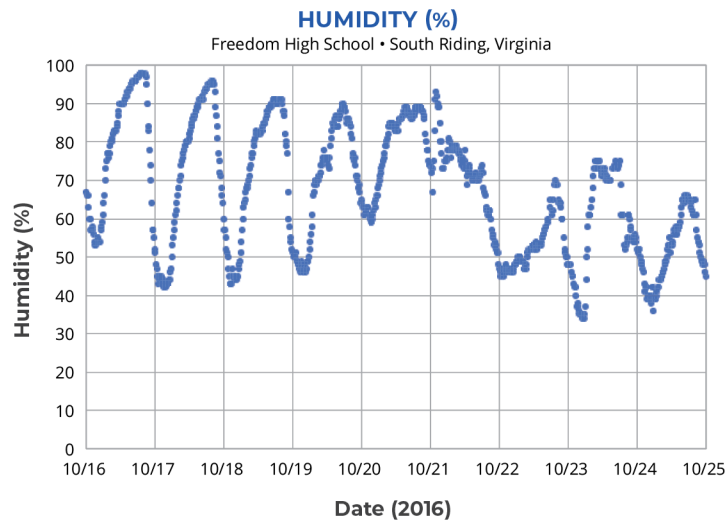


**STEP 2:** Describe the humidity before, during, and after the cold front.



Circle the data on the graph that shows when the cold front passes through South Riding, VA. Write **What I See** and **What it Means** statements on the graph.

*Note: The vertical lines on the graph indicate noon on each of the dates listed on the x-axis.*



- Describe the humidity pattern before the cold front.
- Describe the humidity pattern after the cold front.
- How does humidity change when the front moves through?



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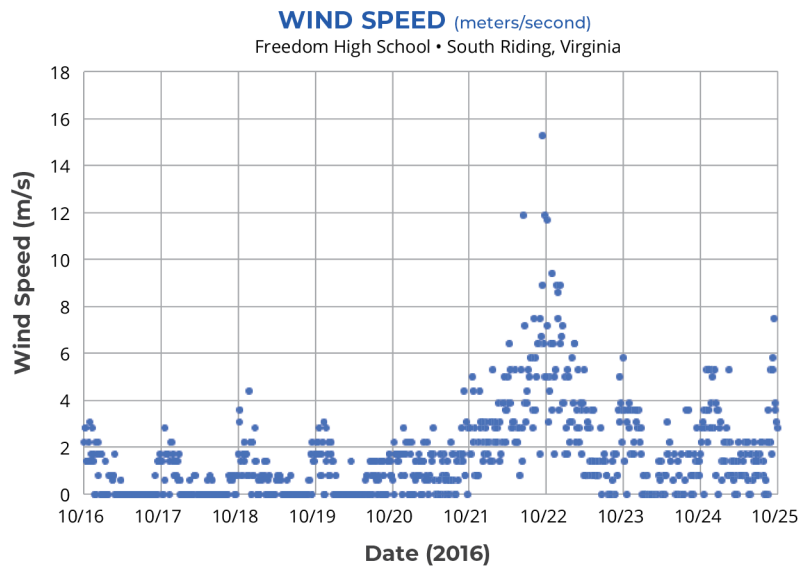


**STEP 3:** Describe the wind speed before, during, and after the cold front.



Circle the data on the graph that shows when the cold front passes through South Riding, VA. Write **What I See** and **What it Means** statements on the graph.

*Note: The vertical lines on the graph indicate noon on each of the dates listed on the x-axis.*



1. Describe the wind speed before the cold front.
2. Describe the wind speed after the cold front.
3. How does wind speed change as the front moves through?

WEATHER REPORT



...bring your umbrellas for the morning of October 21. The chance of rain is high.



**DISCUSS WITH YOUR CLASS:**

Why do you think the chances are high for precipitation the morning of October 21?

How is this storm similar to, or different from, the isolated storm that you investigated before?

Students at a high school in Virginia collected the weather data that's in this lesson's graphs.

If you collected weather data at your school, what types of weather events would you likely observe?

