LESSON 6: Can we identify the best conditions for storms?

STEP 1: Make predictions.

Use your model for an isolated storm, and what you know about temperature and humidity, to predict the very best conditions that would lead to an isolated storm.

A strong storm would form if the temperature high in the atmosphere near the clouds was

○ **much colder than**   ○ **much warmer than**   ○ **about the same as**

the temperature near the ground because _____

_____

_____

A strong storm would form if humidity was   ○ **high**   ○ **moderate**   ○ **low**

because _____

_____

_____

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STEP 2: Record and explain your observations.

Now you can test your predictions with the Make a Thunderstorm simulation (scied.ucar.edu/make-thunderstorm). Follow your teacher's instructions for collecting data from the simulation. Record your observations of five trials in the table below. Then explain why a storm did or did not form.
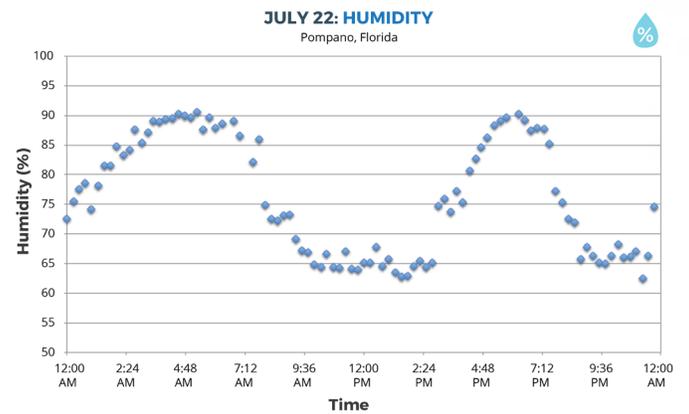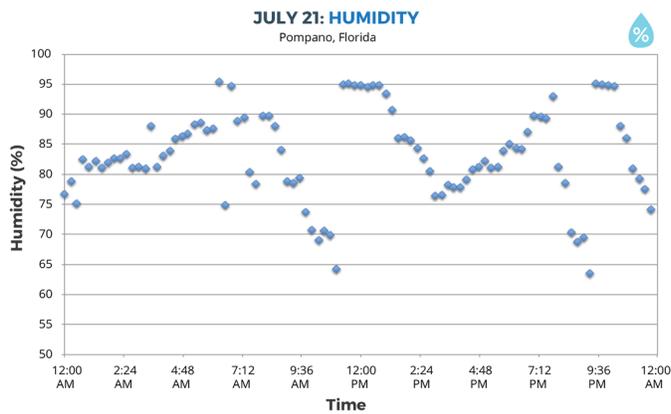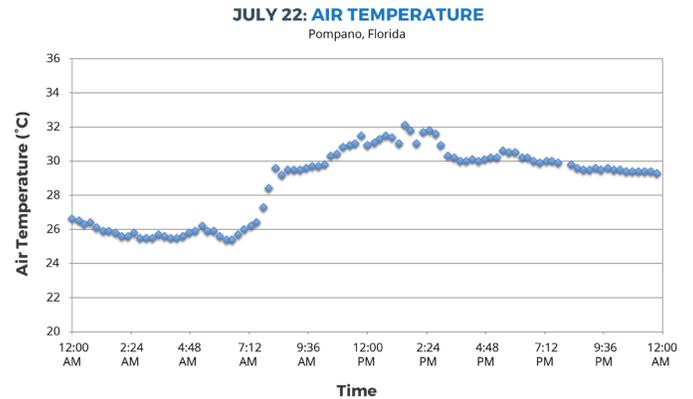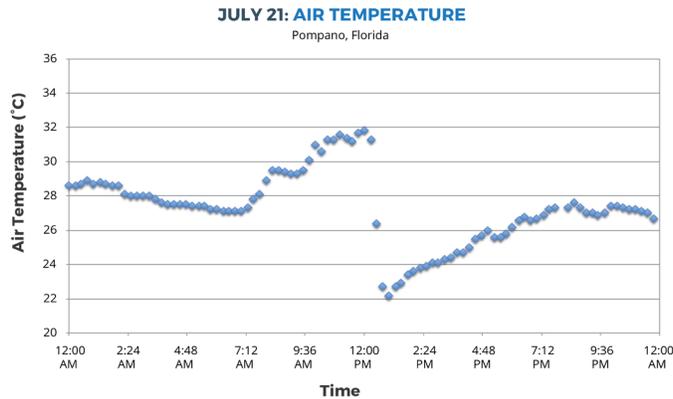
CONDITIONS	OUTCOME	WHY DID THIS HAPPEN? Explain what helped the storm or what was missing.
high-level temp ☐ humidity ☐ low-level temp ☐	○ no storm ○ small storm ○ medium storm ○ big storm	
high-level temp ☐ humidity ☐ low-level temp ☐	○ no storm ○ small storm ○ medium storm ○ big storm	
high-level temp ☐ humidity ☐ low-level temp ☐	○ no storm ○ small storm ○ medium storm ○ big storm	
high-level temp ☐ humidity ☐ low-level temp ☐	○ no storm ○ small storm ○ medium storm ○ big storm	
high-level temp ☐ humidity ☐ low-level temp ☐	○ no storm ○ small storm ○ medium storm ○ big storm	

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STEP 3: When did it rain?

The air temperature and humidity data below is from two days in Pompano, Florida. It rained on one of these days. Identify the most likely day and time it rained.

1. Circle on the graph when the rain happened.

JULY 21: AIR TEMPERATURE
Pompano, Florida

JULY 22: AIR TEMPERATURE
Pompano, Florida

JULY 21: HUMIDITY
Pompano, Florida

JULY 22: HUMIDITY
Pompano, Florida

2. Explain what conditions were likely leading up to this rain event, and why you think the rain happened at this time. Use evidence from previous investigations and your model to develop your explanation.