

NASA would like to use Wake County, North Carolina as a possible landing site for a new space vehicle. This vehicle will be used to deliver solar panels to the International Space Station. However, NASA is not sure if the weather is suitable for the space vehicle to land safely. The scientists need your help. They need a record of the weather patterns in Wake County for several weeks. In fact, they have even sent you some instruments to help you with the task. How do you think that you can use these instruments to help the NASA scientists? What data do you need in order to find a weather pattern? What is our problem here?

What do the scientists want us to do?

What did they provide us with?

Vocabulary:

1) **INSTRUMENTS**: tools used to measure elements of weather

2) **WEATHER PATTERN**: the manner in which various types of weather are spread or distributed across the planet.

Focus Question

What are the weather patterns for Wake County, North Carolina?



Predictions:

How can we find the weather patterns for Wake County, NC?



If we collect data for a number of days it may form a weather pattern because data from a period of time may repeat itself.

Vocabulary:

- 1) **thermometer** : a tool used to measure temperature
- 2) **anemometer**: a tool that indicates wind speed
- 3) **wind vane**: a tool that indicates wind direction
- 4) **rain gauge**: a tool that measures the amount of precipitation that falls during a particular time.
- 5) **barometer**: a tool used to measure air pressure
- 6) **air pressure**: the measure of air pressing down on a given area of Earth's surface

What data should we collect?

Air Pressure ^{Humidity}

Temperature

Wind Speed + Direction

Precipitation: Type +

Cloud Cover ^{Amount}

Other Observations

Vocabulary

- 1) **PRECIPITATION:** *moisture that occurs when clouds lose water*
- 2) **CLOUD COVER:** *the portion of the sky cover which is attributed to clouds*

When should we collect data?

What should our collection device look like?

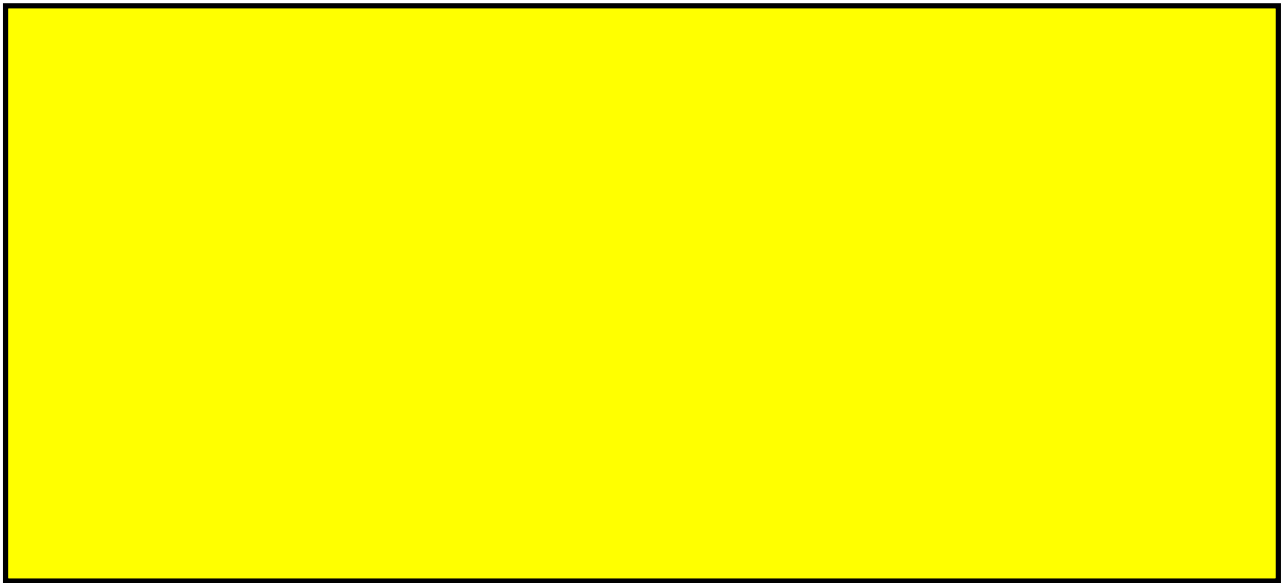
The NASA scientists are very excited that you are helping them determine the weather patterns for Wake County, NC. Now they are asking you to help them with another challenge that they have. They need to test the new solar panels that the space vehicle will deliver to the International Space Station. The solar panel runs on solar heat and needs about 14 hours of constant intense (direct) heat in order to change and function properly. They have sent you a data table with average temperatures in July from many places around the world to help with this challenge. Keeping in mind that the solar panel needs a lot of intense heat from the sun during the day, which of these places might be a good place for them to test the solar panel? What do we have to investigate? What is your focus question for this investigation?

What does the solar panel use for energy?

What are the places considered for testing the solar panel?

Where on a globe are these places located?

Focus Question



Prediction

If the solar panel needs heat to function, then it needs to be tested in _____, because _____ seems to receive a lot of heat all year long.

NASA Data Chart

Average Temperatures Around the World in July Data Table

City and Country	Latitude	Temperature
Auckland, New Zealand	37° S	59° F
Bombay, India	19° N	85° F
Budapest, Hungary	47° N	80° F
Buenos Aires, Argentina	34° S	60° F
Fairbanks, Alaska, USA	65° N	63° F
Honolulu, Hawaii, USA	21° N	81° F
Istanbul, Turkey	41° N	83° F
Jakarta, Indonesia	6° S	87° F
Johannesburg, South Africa	26° S	63° F
Kinsasha, Congo	4° S	85° F
Lagos, Nigeria	6° N	83° F
London, England	51° N	71° F
Reykjavik, Iceland	64° N	56° F
Rio de Janeiro, Brazil	23° S	75° F
Saint Louis, Missouri, USA	38° N	80° F
Seoul, Korea	37° N	84° F
Singapore	1° N	88° F
Sydney, Australia	34° S	62° F
Toronto, Canada	44° N	79° F
Wellington, New Zealand	41° S	53° F

*How can we
find these
places?*

*How can we
find a pattern
in the data?*

