

Subject

Science : Weather

Summary

Students are given a set of weather data and facts. After sorting it by organizing it in a table and learning a few sailing facts, they must decide when to set sail from New York City to Cape May.

Overall

Expectations.

Examine how weather forecasts influence decisions concerning human activity and how humans have adapted to a variety of weather conditions.

Specific

Expectations

Explain how advances in technology and science have enabled humans to make predictions about the weather ; Understand and explain the importance of weather forecasts for people in certain occupations

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Should we stay or should we go?

BACKGROUND

Weather is the most important aspect to consider when planning a trip.

Amanzi has sailed across Lake Ontario and through the Erie Canal and down the Hudson River for the last two weeks. We have provisioned (bought people and cat food, fuel and water) in New York City. Now we are planning to travel south from New York City to Cape May. It is at the opening of the Delaware Bay on the Atlantic Ocean. We are heading up this Bay to meet people who work with the Water Keepers.

In the Ship's Log, we have been keeping track of the weather using both Weather Faxes from the Internet as well as tuning into Marine Weather forecasts on the VHF radio.

ACTIVITY

As one of the crew onboard Amanzi, you will need to know when to leave New York and sail to Cape May. Your job today is to advise the Captain when to leave, after looking at all the facts.

Consider these sailing facts:

- 1. The trip from New York City to Cape May is one and half days – 28 hours sailing time. It will be an overnight trip.*
- 2. The sailboat speed will be approximately 6 nautical miles/hour (nm/h) and Cape May is 100 nm.*
- 3. Sailboats can not sail directly into the wind. The closest angle they can sail to the wind is 45° (degrees).*
- 4. If the wind is more than 50 km/h, it will be uncomfortable aboard the boat.*

Data heard on the radio and in the Weather Faxes from the Internet recorded in the Ship's Log.

Monday 10/10/05 Thunder and Lightning 16C 28 knots ENE

Tuesday 11/10/05 Rain 16C 15 knot NE

Wednesday 13/10/05 Rain 16C 15 knot NE

Thursday 14/10/05 Rain 15C 18 knots NE

Friday 15/10/05 Rain 16C 35 knots NW

Saturday 16/10/05 Scattered Clouds 16C 50 knots NW

1. Sort and copy the weather data we recorded in the Ship's Log into a table like the one

Date	Temperature	Wind speed	Wind Direction	Cloud Cover
10/10/05	16C	28 knots	ENE	cloudy

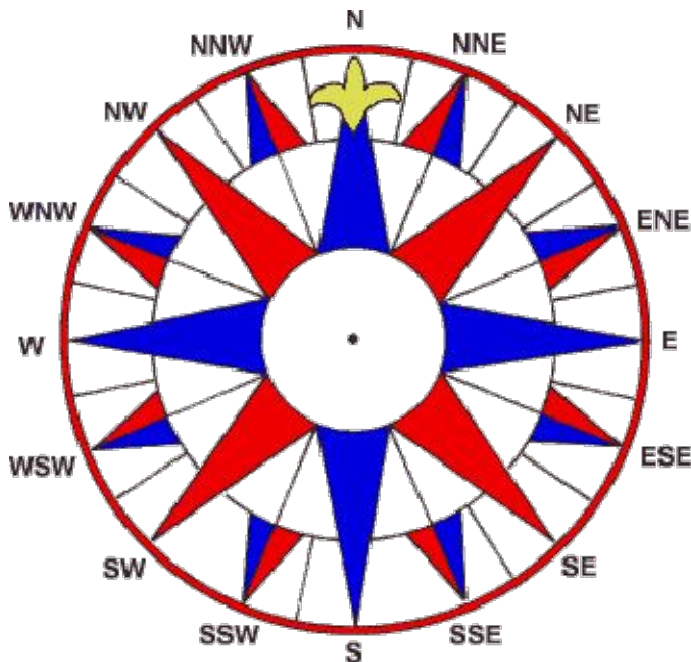
below. Be sure to include all the headings. The first one is done for you as an example.

2. Consider these Compass facts:

*Wind Direction: When we hear that the wind direction is NorthEast (NE) this means the wind is **coming from** the NorthEast.*

Angles and degrees: The magnetic compass is in the shape of a circle. When measuring any angle on a circle, it is referred to in degrees. A circle is divided into 360 degrees. A compass's measurements are always measured in degrees. North is zero degrees and South is 180 degrees. Using the compass illustration below, what is:

- East (E) in degrees?
- East North East (ENE) in degrees?



3. What compass direction is 45 degrees?
4. Cape May is south of New York City, so we want the wind direction to be in our favour. If the wind is coming from the south, it will make it very difficult to get to our destination in 2 days. What wind direction is the most favourable for Amanzi?
5. Using the weather data you charted, the sailing facts and answers to questions 2– 4 , when does Amanzi set sail, Matie? Remember to give reasons to your captain.

See you in Cape May.