

Module 11: Meteorology

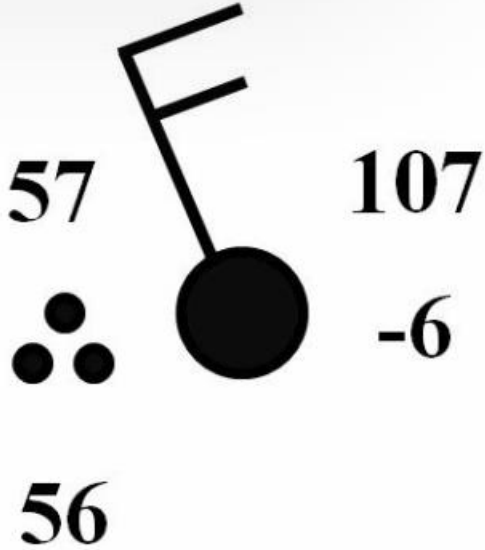
Topic 5 Content: Station Model Notes

Introduction

Station Model

Introduction

Station models are helpful symbols that are used on weather maps to display the atmospheric conditions at many locations across the United States. Most major cities will have a station model updated every three hours and displayed on a map by the National Weather Service. A map showing all of the station models may actually contain thousands of these models and their associated data. In this activity, use the arrows in the lower right corner to learn about the different parts of a station model.



The diagram illustrates a station model symbol. It consists of a central circle with a vertical line extending upwards, topped with a horizontal bar. To the left of the circle are three small circles arranged in a triangle. To the right of the circle are two large numbers, 107 and -6. Below the circle is the number 56.

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Sky Cover

Station Model

Sky Cover

The total amount of sky covered by clouds is represented by a circle. As you can view in the image, the circle can be shaded to represent the approximate cloud cover in the sky. The station model example shows an overcast sky. Overcast skies are represented with a fully darkened circle.

Cloud cover (in eighths)

- clear
- ◐ 1
- ◑ 2
- ◒ 3
- ◓ 4
- ◔ 5
- ◕ 6
- ◖ 7
- overcast
- ⊗ sky obscured

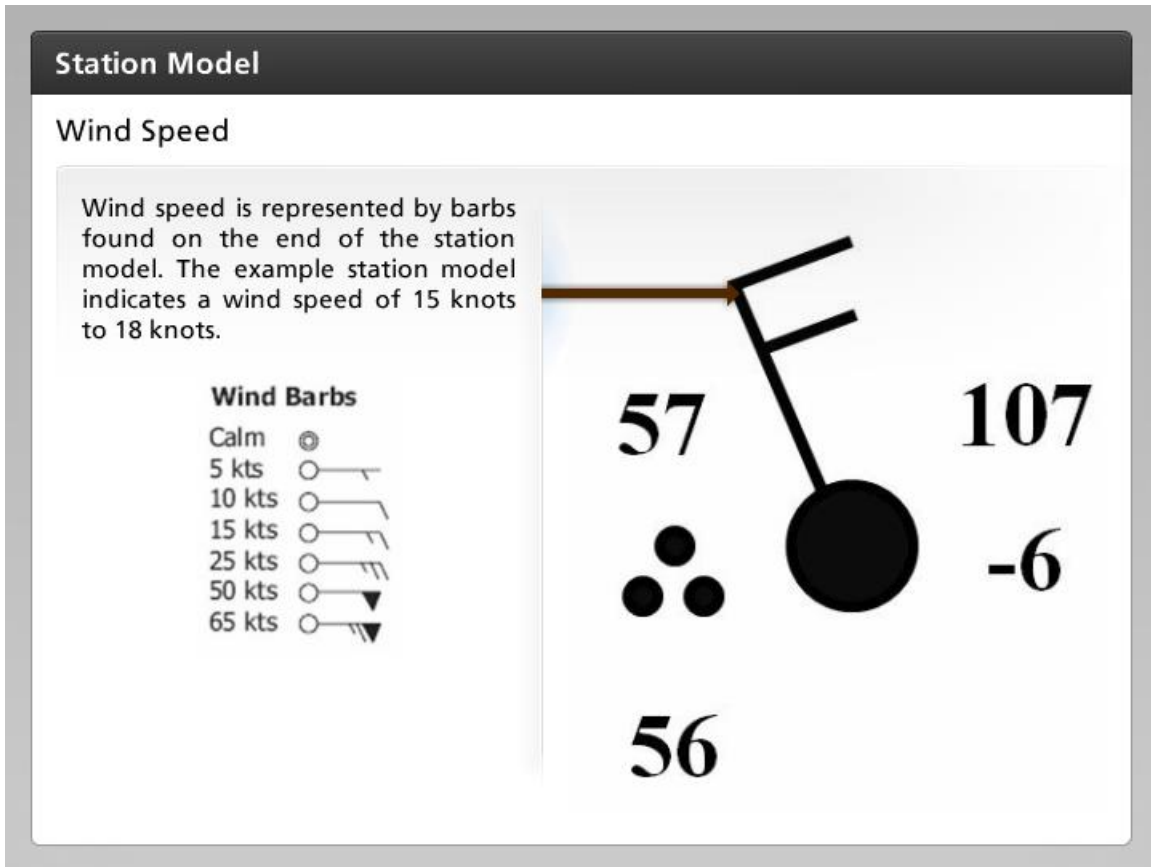
57 107

56 -6

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Wind Speed



Wind speed is represented by barbs found on the end of the station model. The example station model indicates a wind speed of 15 knots to 18 knots.

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Wind Direction

Station Model

Wind Direction

A line in the station model shows where the wind is coming from. In the station model example, the wind is coming from the northwest.

57

107

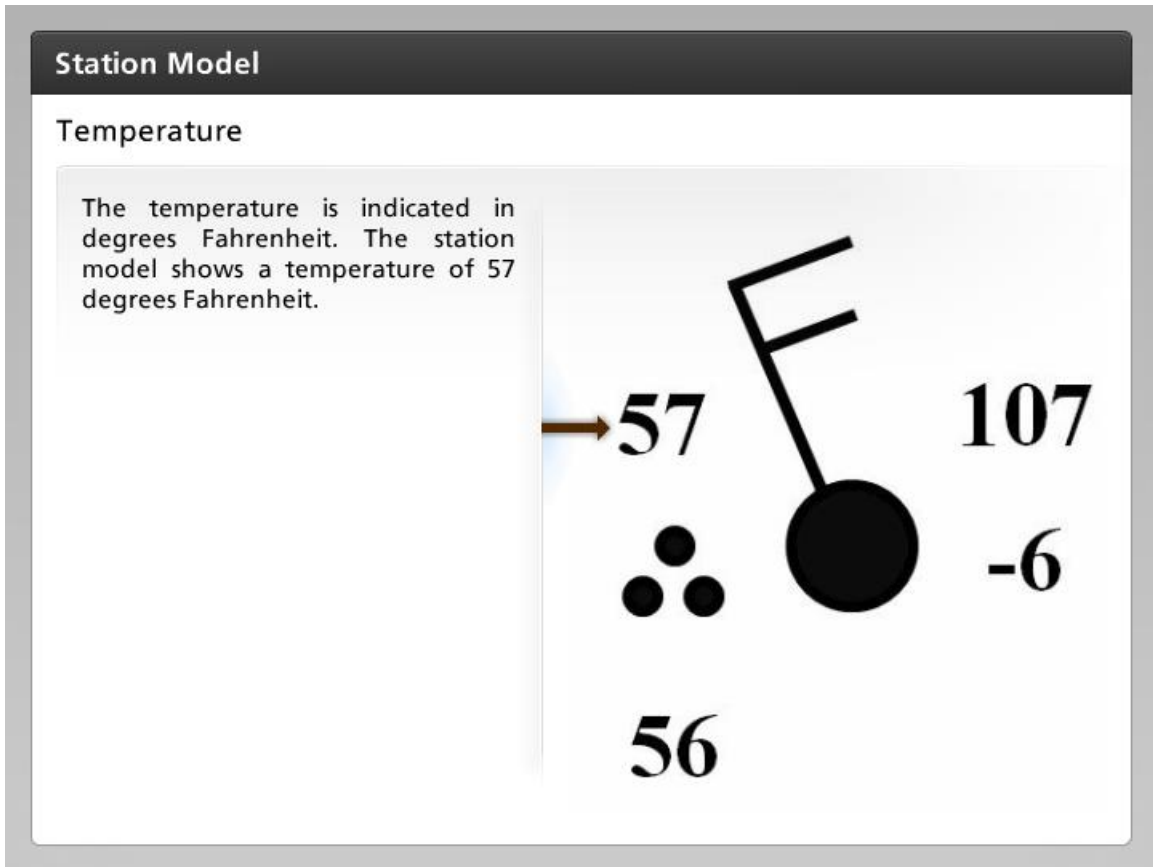
-6

56

A line in the station model shows where the wind is coming from. In the station model example, the wind is coming from the northwest.

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Temperature



The temperature is indicated in degrees Fahrenheit. The station model shows a temperature of 57 degrees Fahrenheit.

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Present Weather

Station Model

Present Weather

The present weather, or current weather, can be indicated by many different symbols. These symbols are shown in the image. The example station model shows that heavy rain is currently taking place.

Pres/Prev Weather	Snow Showers
Rain	☉ Light
● Light	☉ Moderate
●● Moderate	Freezing Rain
●●● Heavy	⊖ Light
Rain Showers	⊖ Moderate
☉ Light	Freezing Drizzle
☉ Moderate	⊖ Light
☉ Heavy	⊖ Moderate
Drizzle	Tropical
⊖ Light	☉ Hurricane
⊖ Moderate	☉ Storm
⊖ Heavy	Miscellaneous
Thunderstorm	▲ Ice Pellets
☉ Light	++ Ice Crystals
☉ Heavy	⊖ Snow Grains
⚡ Lightning	⊖ Blowing Snow
Snow	☉ Fog
++ Light	☉ Haze
△ Moderate	☉ Smoke
☉ Heavy	☐ Dust

The diagram shows a station model with the following elements:

- Top left: Temperature 57
- Bottom left: Dew point 56
- Top right: Wind speed 107
- Bottom right: Pressure -6
- Center: A large black circle with a vertical line extending upwards, topped with a horizontal bar and a diagonal line, representing heavy rain.

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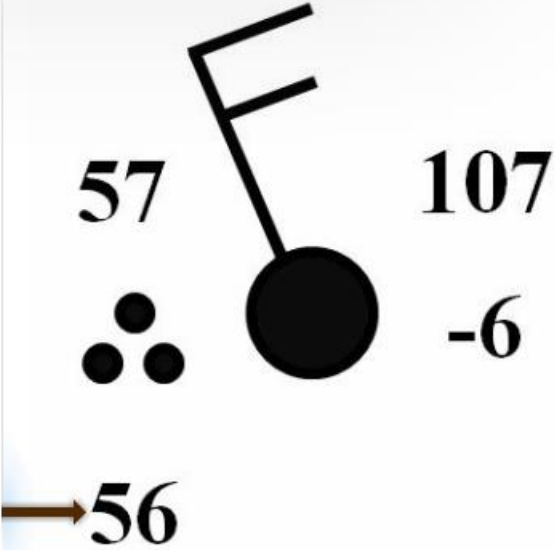
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Dew Point

Station Model

Dew Point

Dew point temperature is indicated in degrees Fahrenheit. The dew point is the temperature at which water vapor turns back into liquid water. This indicates the temperature at which clouds form.



The diagram shows a station model with the following elements: a large circle with a vertical line extending upwards and a horizontal line extending to the right, representing a wind indicator; the number 57 to the left of the circle; the number 107 to the right of the circle; three small circles below the number 57; and the number -6 to the right of the three small circles. Below the entire diagram, the number 56 is shown with a brown arrow pointing to it from the left.

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Atmospheric Pressure

Station Model

Atmospheric Pressure

Sea-level atmospheric pressure is plotted in tenths of millibars, with the leading 10 or 9 omitted. Since pressure is not going to equal 9107 millibars, the true atmospheric pressure is 1007 millibars. This indicates high pressure.

57 → 107

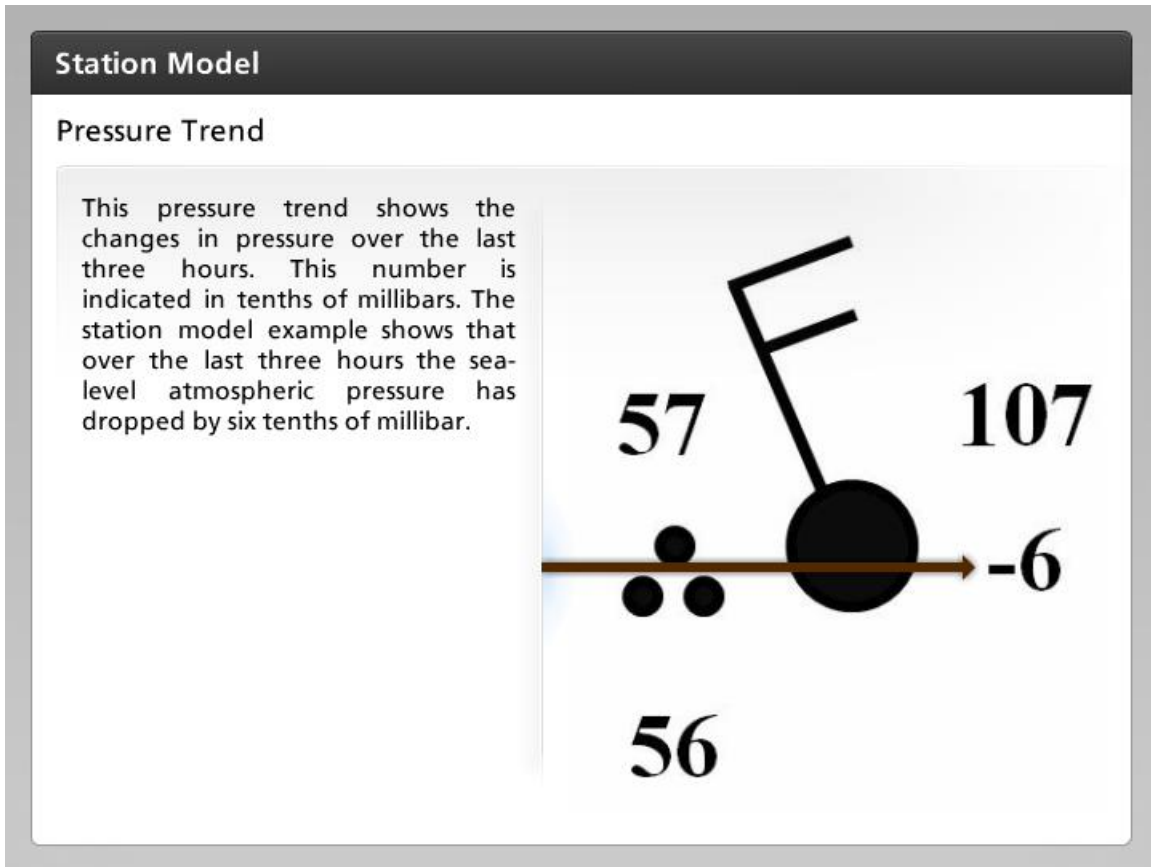
••• -6

56

Sea-level atmospheric pressure is plotted in tenths of millibars, with the leading 10 or 9 omitted. Since pressure is not going to equal 9107 millibars, the true atmospheric pressure is 1007 millibars. This indicates high pressure.

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Pressure Trend



This pressure trend shows the changes in pressure over the last three hours. This number is indicated in tenths of millibars. The station model example shows that over the last three hours the sea-level atmospheric pressure has dropped by six tenths of millibar.