



Science Virtual Learning

7th Grade Science

Characteristics of High and

Low Pressure

April 10, 2020



7th Grade/Science
Lesson: April 10, 2020

Objective/Learning Target:

I can identify weather connected with high and low air pressure systems.

Warm up Part 1

Making Observations: on a sheet of paper, write down the observations that you make about today's weather. Include:

- 1) Are there any clouds? If so, are there just a few? Is the sky covered with clouds? Can you see the sun?
- 2) Temperature: Is it warm? Is it cold?
- 3) Wind? Is there any wind? Is there a little? Is there a lot of wind?

Warm-up Part 1 (continued)

5) How does today's weather compare to yesterday's weather? Is it the same? Did it change? If it changed, how did it change?

Video: Pressure Systems

Watch this short video on High and Low pressure systems affect the weather...

[How does atmospheric pressure affect weather?](#)

Warm-up Part 2: Vocabulary

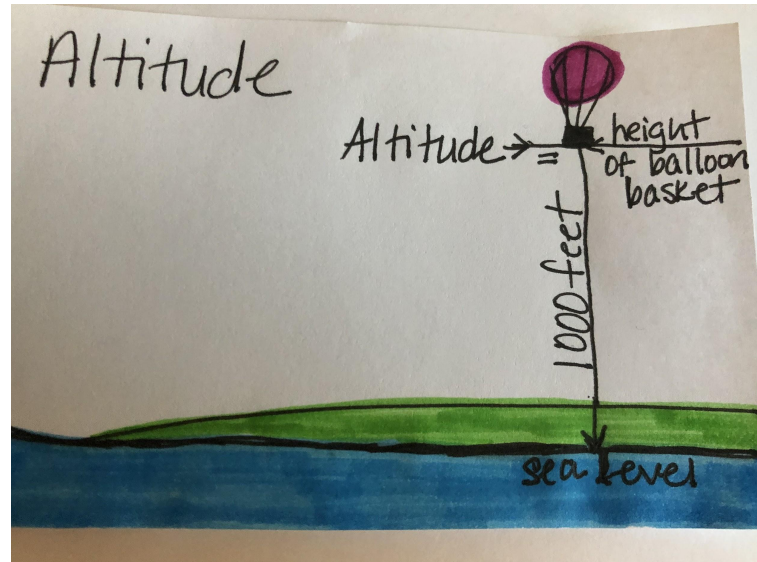
Write the following terms down on your paper along with the pictures (as best you can!)

- 1) Altitude
- 2) High-pressure
- 3) Low-pressure
- 4) Cold front
- 5) Warm front

Vocabulary - Altitude

Altitude - the distance above sea level.

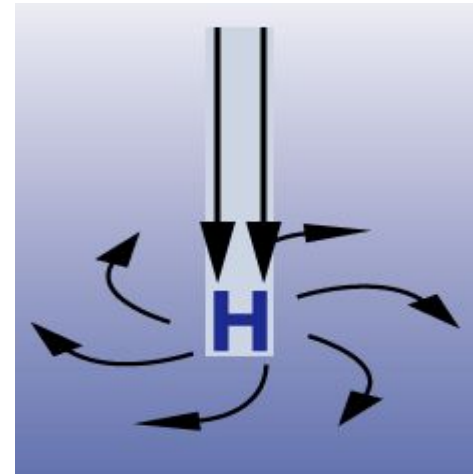
“The altitude of the balloon’s basket was 1000 feet.”



Vocabulary - High pressure

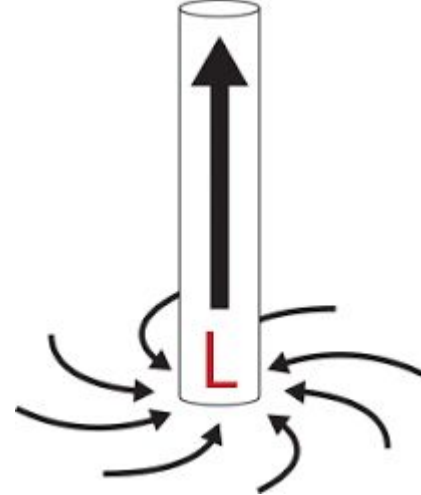
High pressure - usually a calm and clear weather system that happens when air sinks down in a high-pressure center and moves outwards towards areas of low-pressure near Earth's surface.

Motion: Clockwise in rotation



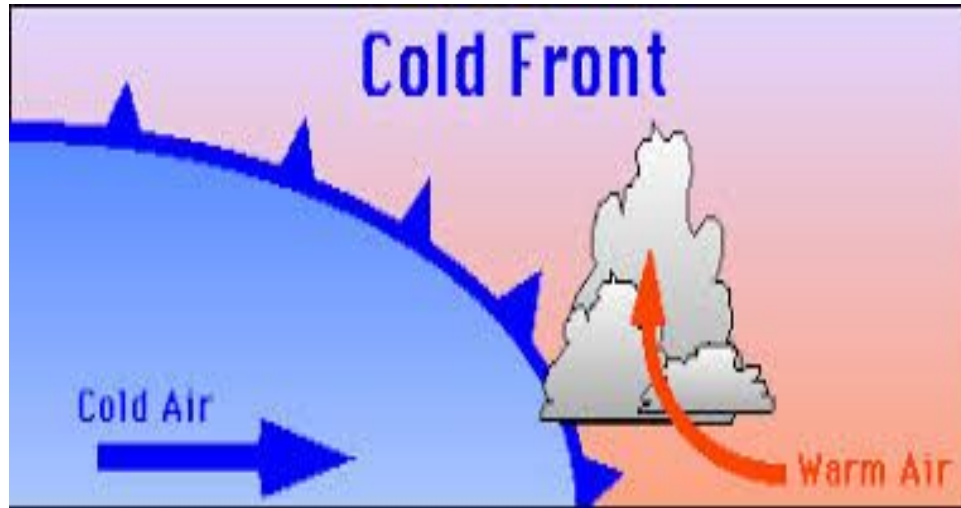
Vocabulary - Low-Pressure

Usually a large and stormy weather system that occurs when air moves around and into a low-pressure center, moving upwards in altitude. Motion is counter-clockwise in rotation



Vocabulary- Cold front

A Cold front is the leading edge of a mass of cold air.



Vocabulary - Warm front

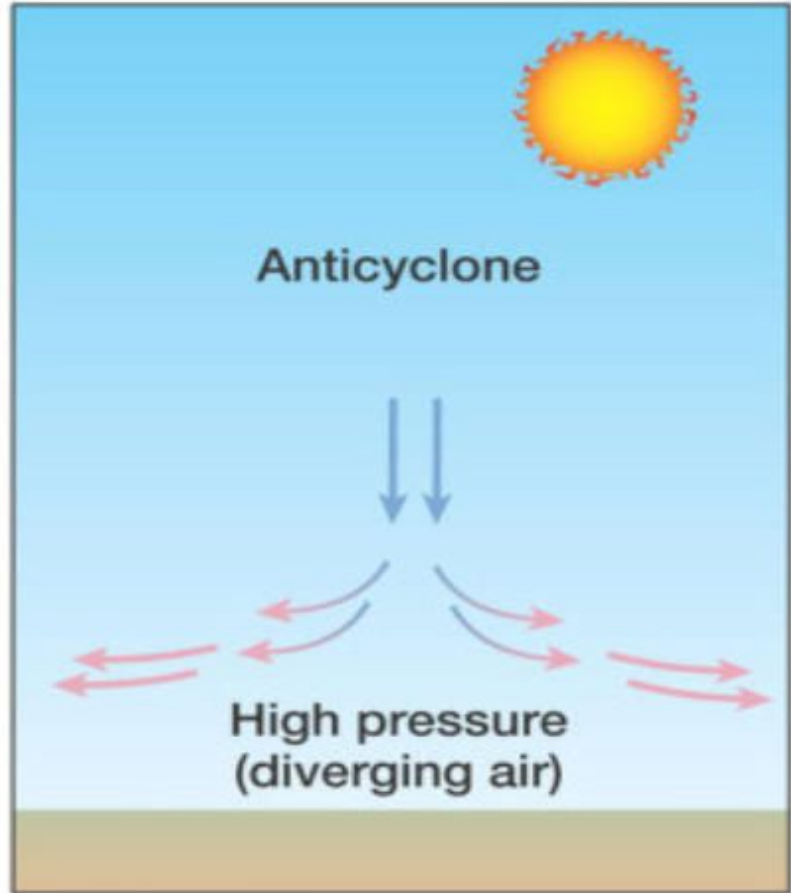
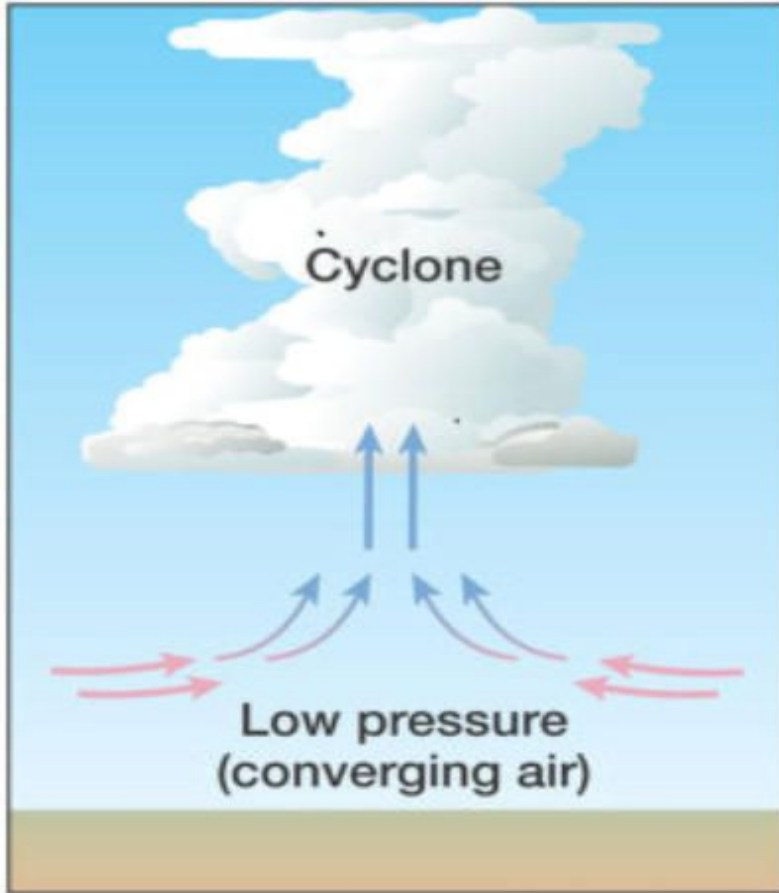
A Warm front is the leading edge of a mass of warm air.



Practice 3: Graphic Interpretation

The next slide will show you what a high-pressure system and a low-pressure system looks like. **On your paper**, write down three observations that you made when looking at the graphic.

High and Low Pressure...a Comparison



Graphic Answers! Cyclone

Here is a list of some observations that you might have made...

Cyclone: Low pressure (on left side)

- Arrows show air moving together (converging)
- Arrows start as red (warm air) and change to blue (cooler air) as air rises into cloud.
- Large cloud.

*** A discussion of the term “cyclone” is on the next slide

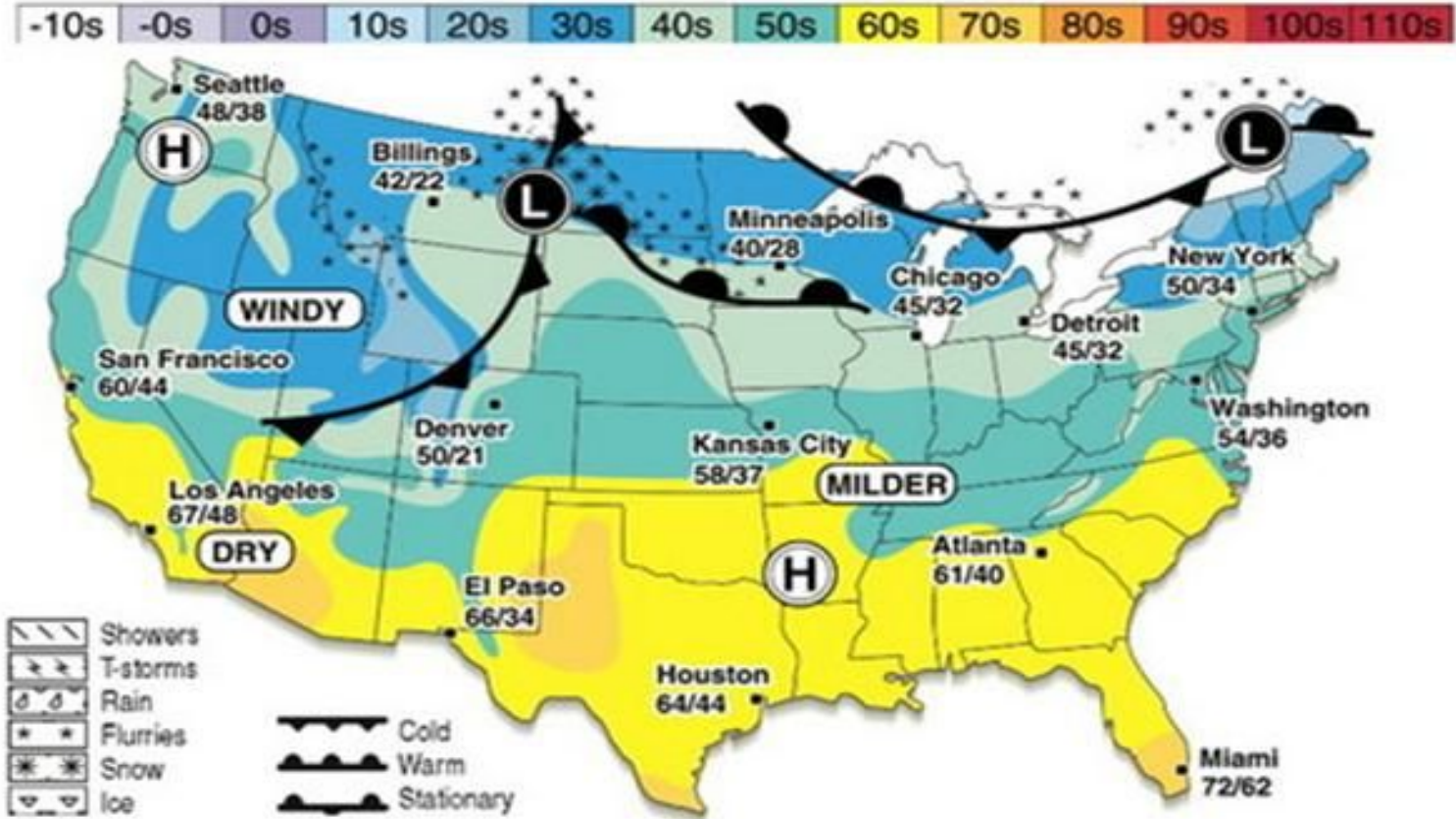
Cyclone! What exactly does that mean?

FYI: If you saw the movie “The Wizard of Oz,” you may remember that the tornado was referred to as a “cyclone.” A cyclone in meteorology (weather) terms is a low-pressure column of air that spins counter-clockwise. What we call a hurricane is referred to as a “cyclone” which has formed in the Indian Ocean.

Graphic Answers: Anticyclone

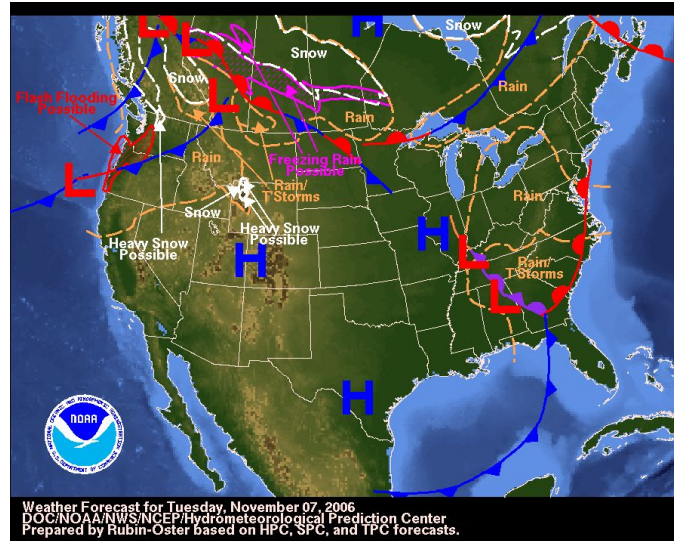
- High pressure
- No clouds, sunny blue sky
- Air moves downward and is cold (blue arrows)
- Air warms as it moves towards Earth's heated surface (red arrows)
- Diverging air! Moving apart...

Predicting: What will the weather be?



Let's watch this short video about weather maps.

[How to Read a Weather Map](#)

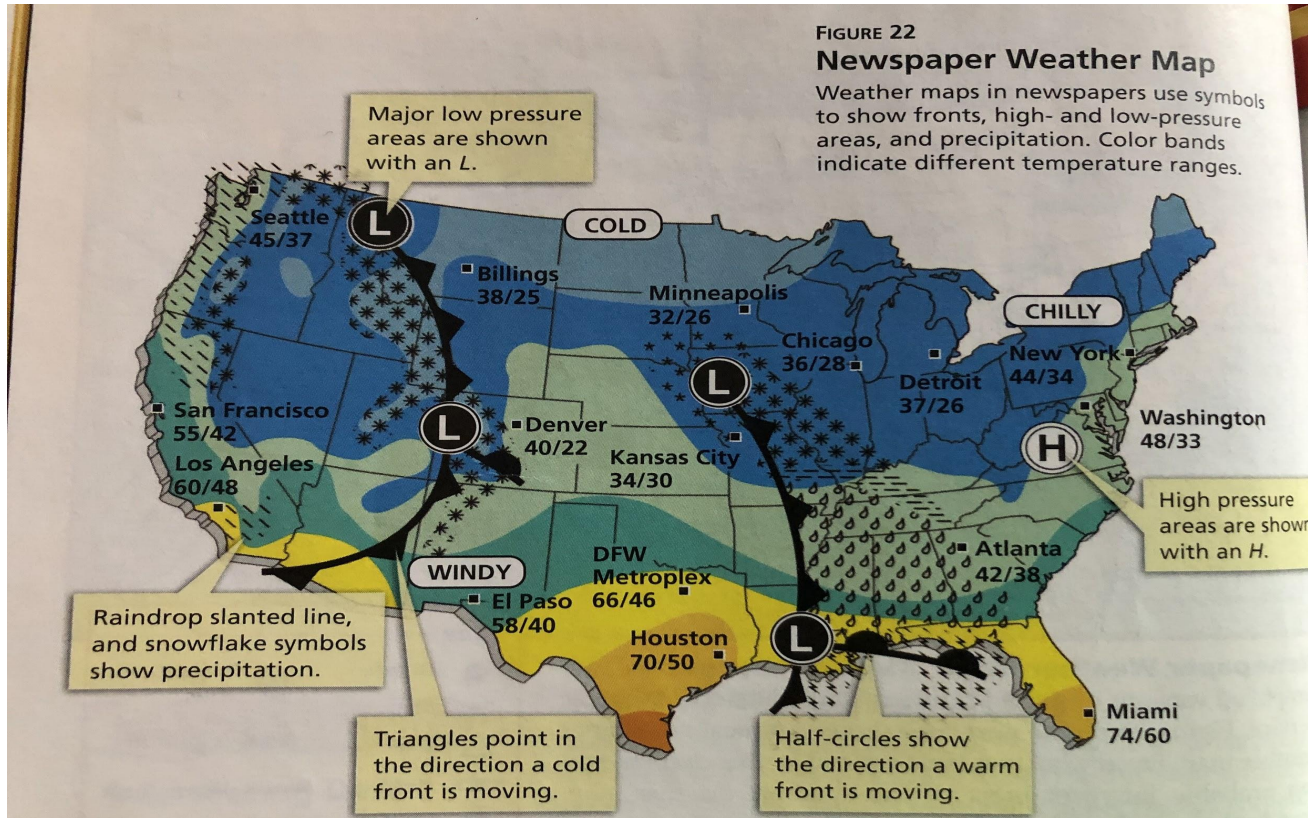


Practice 4: Reading a Weather Map: Symbols

In order to understand a weather map, we need to go over the symbols. The map on the next slide will explain the symbols on the map. Draw and label the following symbols:

- 1) High-pressure centers
- 2) Low-pressure centers
- 3) Cold front
- 4) Warm front
- 5) Rain
- 6) Snow

Symbols on a Weather Map...



Practice 5: Reading a Weather Map - Skill Lab

Click on the link below to find the Weather Map Skills Lab:

[Predicting: What will the weather be?](#)

Quick Quiz! Write your answers on your sheet of paper.

- 1) What type of weather do high pressure systems usually bring?
- 2) What type of weather do low pressure systems usually bring?
- 3) Do pressure systems usually move east to west OR west to east across the United States?

Answer key: Check your answers!

- 1) High pressure: Clear and Sunny skies!
- 2) Low pressure: Rain, snow or storms
- 3) Pressure systems (and fronts) usually move west to east across the United States.