



Using six sheets of 8 1/2" x 11" paper, place on top of each other lengthwise. Each paper should be approximately 1/2" apart.



While holding all papers, fold in half so all pages show.



Press and form a crease.

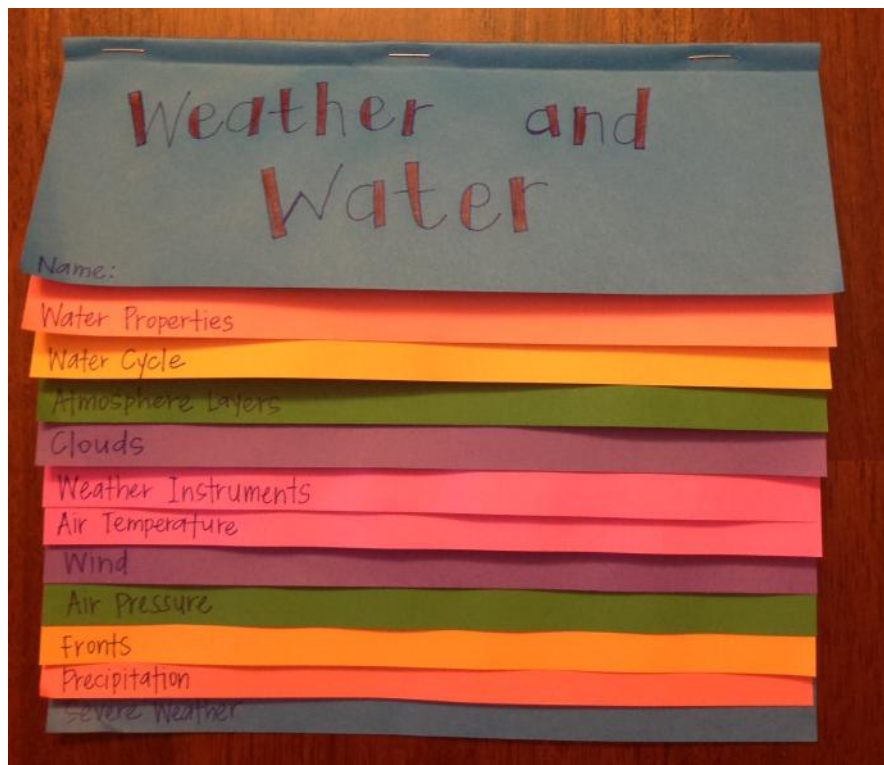


Foldable should look like this prior to stapling.



Put at least 3 staples at the top to hold together. Make sure the staples are not too high; otherwise they will not hold all papers together.

I had my class of fourth graders create their own. It did work, and they were able to do it by helping each other. Or, you can make enough for your class ahead of time. This would be perfect for a parent volunteer. ☺



Have students write a title on the top portion. Also have them write their names on the top flap. Write in the topics for each flap.

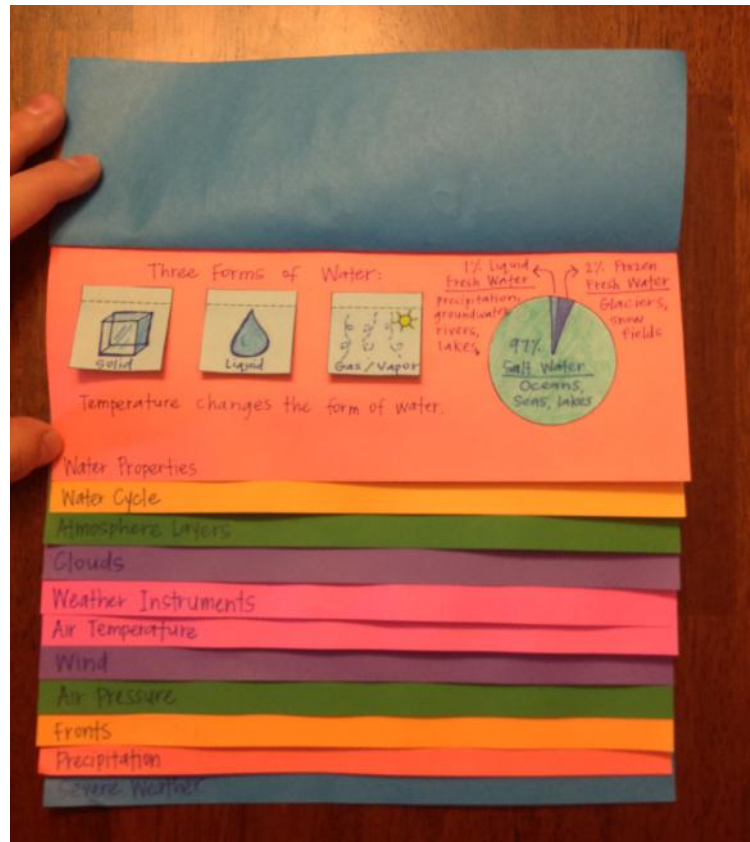
You may store these however you like. I give each student a clear sheet protector to put in their science binder. They put the foldable in the sheet protector when we're not working on it. I also have all the papers filed according to the topics. When a student is absent, or has misplaced their copies, etc. they can go get the papers they need from the files. I do this for our entire fourth grade (3 classes), so it is nice for the students to know where to get papers they are missing without me having to remember to make extra copies. ☺



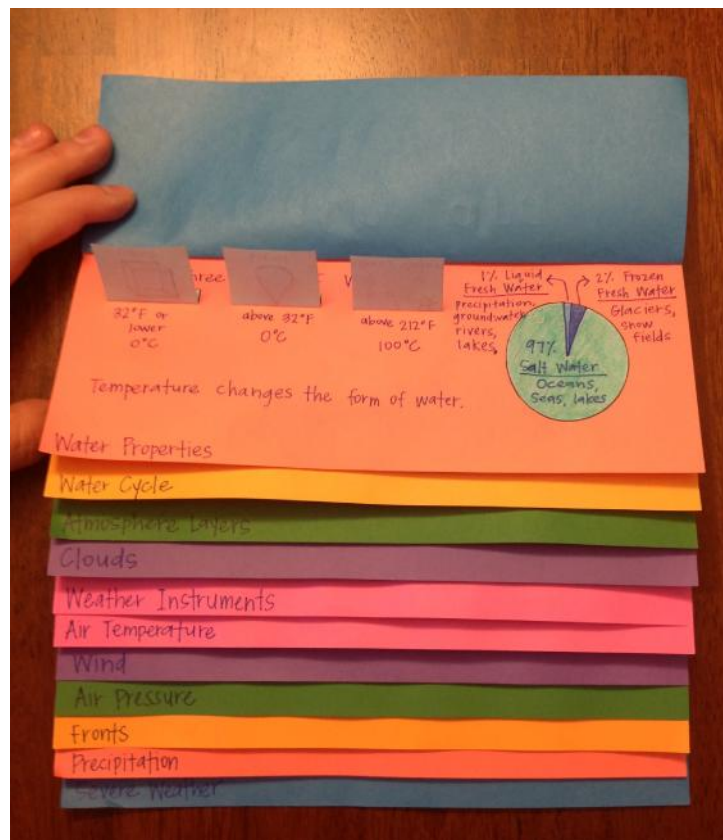
## Weather and Water:

(see the key for better details on what to write – this is for visualization and paper placement only)

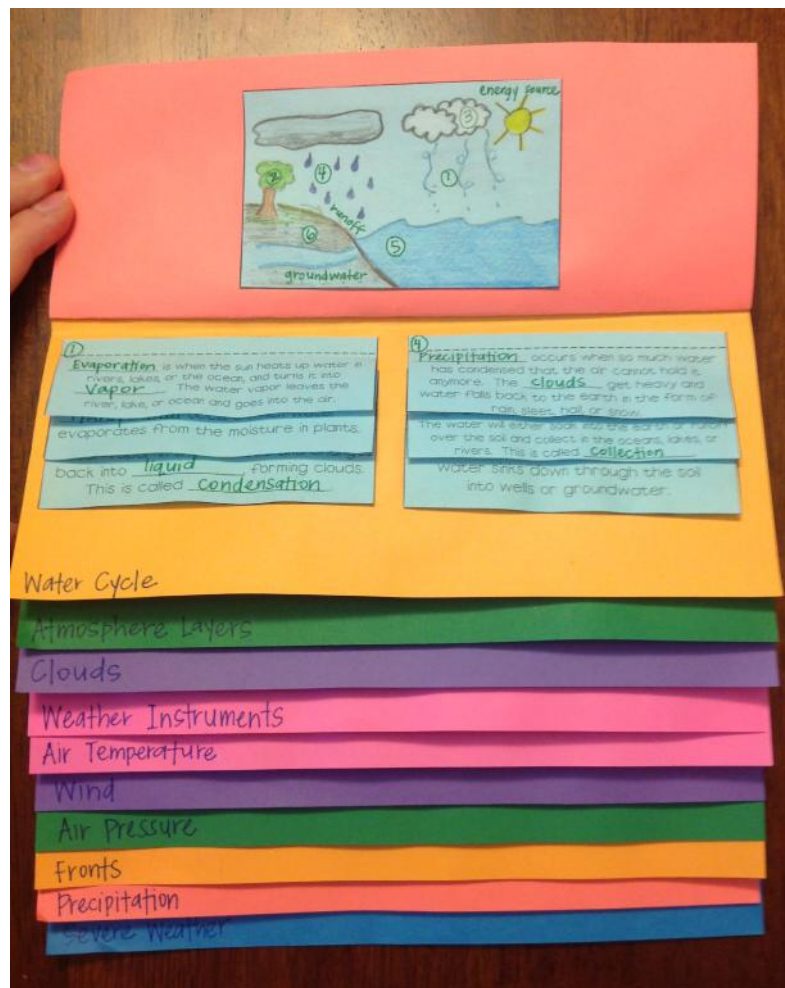
\*Only glue under the dotted lines!



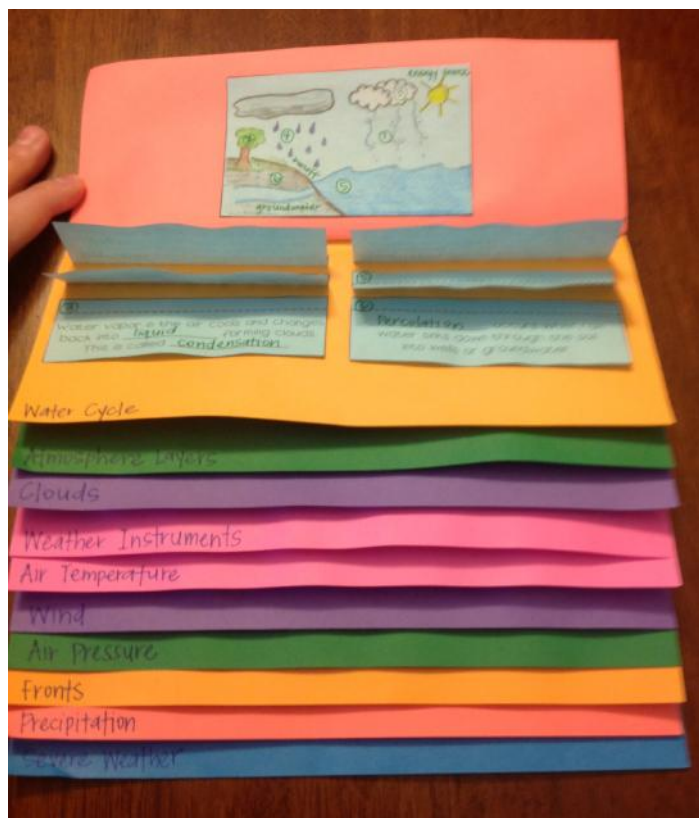
Under flaps:



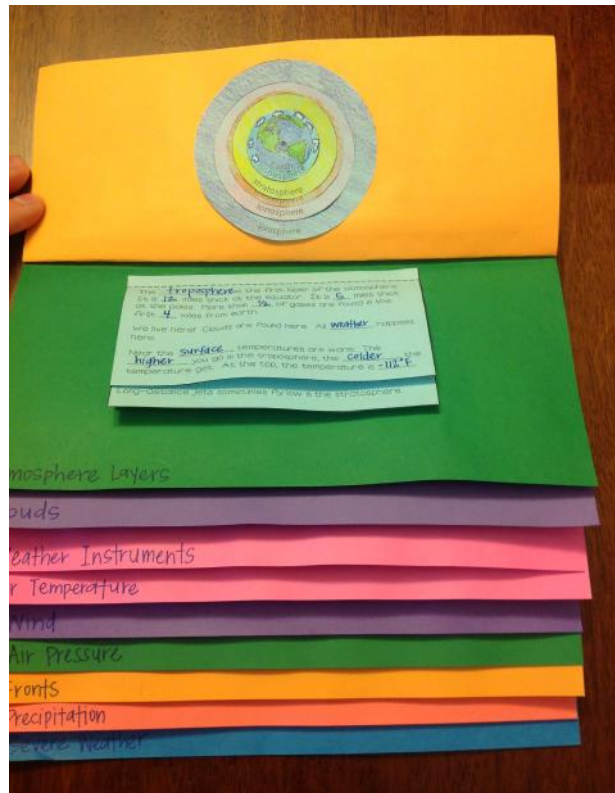
## Water Cycle:



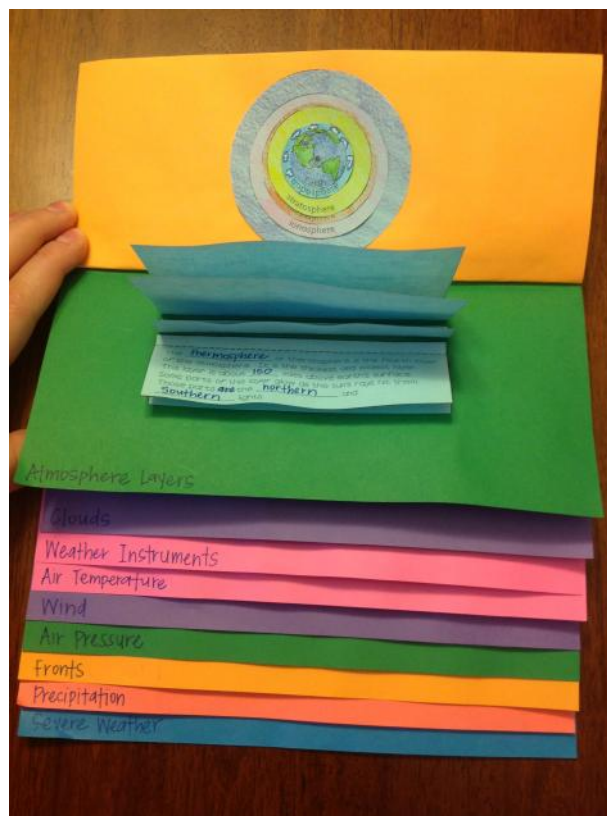
Flaps overlap – only glue under the dotted lines!



For the layers section, either glue on top of each other or use a brass brad.



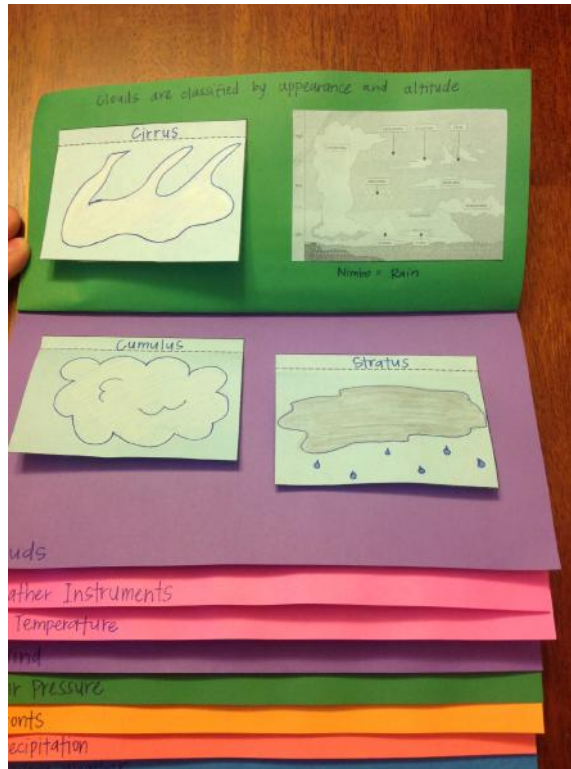
Flaps overlap – only glue under the dotted lines!



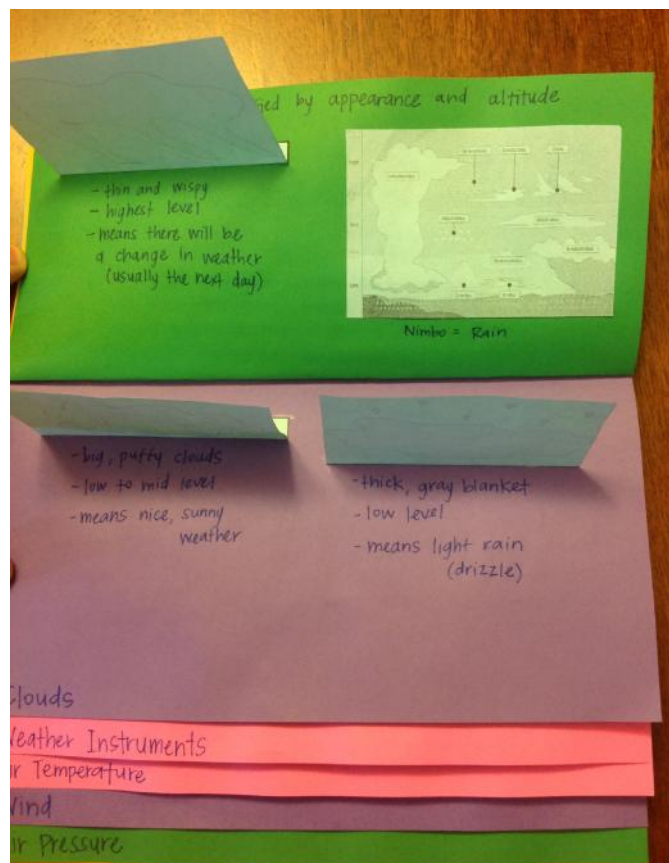


Clouds:

\*Only glue under the dotted lines!

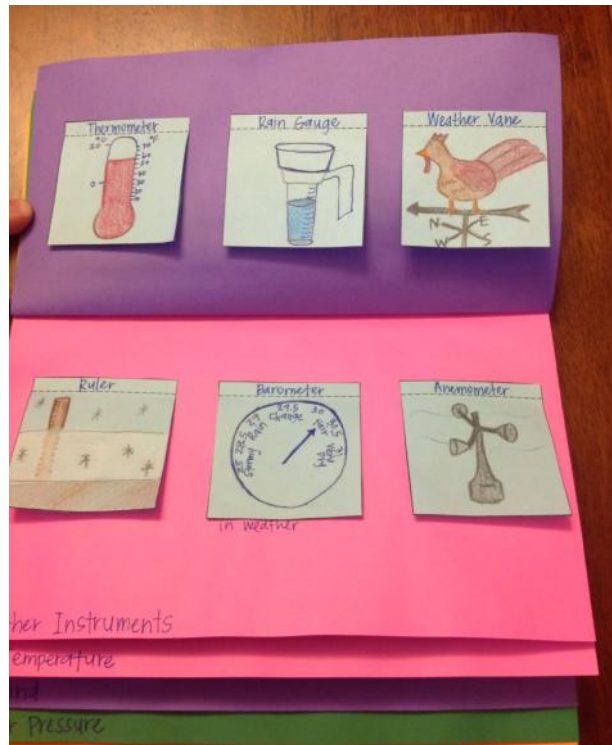


Under flaps:

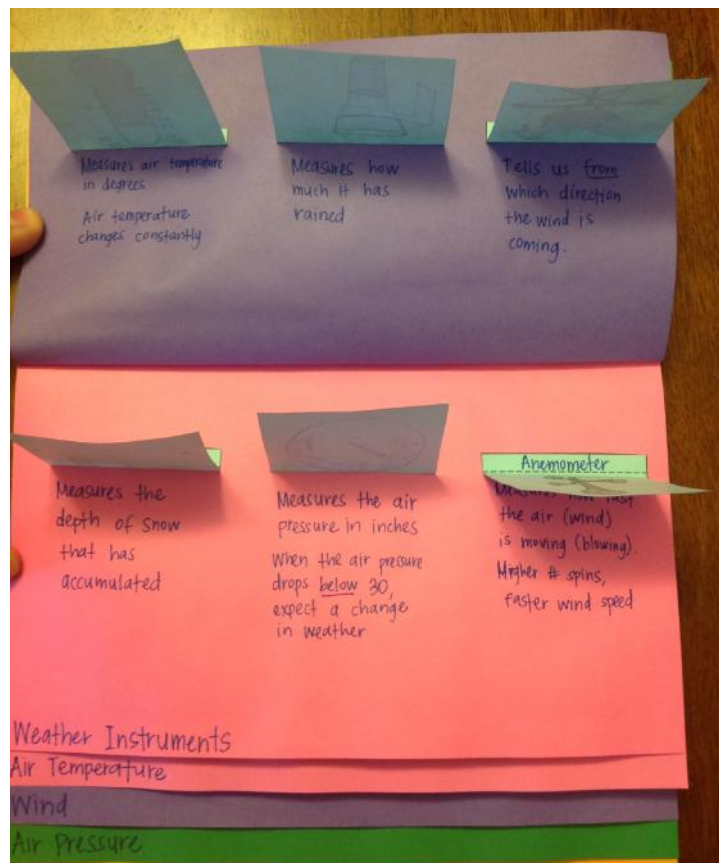


## Weather Instruments:

\*Only glue under the dotted lines!



Under flaps:





## Air Temperature:

### WHAT IS AIR TEMPERATURE?

Temperature is a degree of hotness or coldness that can be measured using a thermometer. Temperature is measured in degrees of Fahrenheit and Celsius.

### WIND CHILL

The Wind Chill Index is the temperature your body feels when the air temperature is combined with Wind Speed. The higher the Wind speed, the faster your body will lose heat and the cooler you'll feel.

### HEAT INDEX

The Heat Index is a combination of air temperature and humidity that gives a description of how the temperature feels. This is not the actual air temperature.

Humidity is the amount of water Vapor in the air. Air masses that form over bodies of water have higher humidity than air masses that form over land.

### CRICKETS

Crickets can help you tell the temperature by listening to the chirps. The frequency of the chirping varies according to the temperature. To get a rough estimate of the degrees in Fahrenheit, count the number of chirps in 15 seconds and then add 37.

Remember that this is a rough estimate. To be accurate, use scientific evidence and tools!

### SEEING YOUR BREATH

When it is cold outside, you can see your breath. This is because your breath is warm and humid and it has invisible water vapor as part of the gas you exhale. Warm, moist air meeting the cold outside air cause the vapor to condense. When the water turns back into a liquid, you can see a cloud!

Spring

40°F - 70°F

Summer

80°F - 100°F

Fall

40°F - 60°F

Winter

20°F - 40°F

r Temperature


ind

r Pressure

onts

## Wind:

A jet stream is a narrow band of air about 7 to 8 miles above Earth's surface that moves around the earth at relatively high speeds. Speeds in a jet can reach close to 200 miles per hour with wind directions flowing from west to east. There are four major jet streams. They are caused by great temperature differences between adjacent air masses.



**WHAT IS WIND?**

Wind is air moving from one spot on Earth to another. When the Sun shines on the Earth, the air near the ground heats up. Warm air is lighter than cool air, so it rises. Cooler air moves in to take its place. This moving air is wind.

Two factors are necessary to classify wind: speed and direction.

Wind is caused by differences in air pressure.

Short bursts of wind moving at high speeds are called gusts.


If there is little wind on a particular day, the next day's weather will likely stay the same.

15-24	moderate wind	flags flap
25-31	strong wind	trees sway flags ripple

Wind  
Air Pressure  
Fronts  
Precipitation

Flaps overlap – only glue under the dotted lines!

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**Weather Vane**

A weather vane is a tool used to show the direction the wind is coming from.

If the arrow points north, the wind is from the north. If the wind is blowing between two directions, both directions are used to tell the wind direction (example: between north and east = northeast wind).

North winds generally bring fair dry weather.

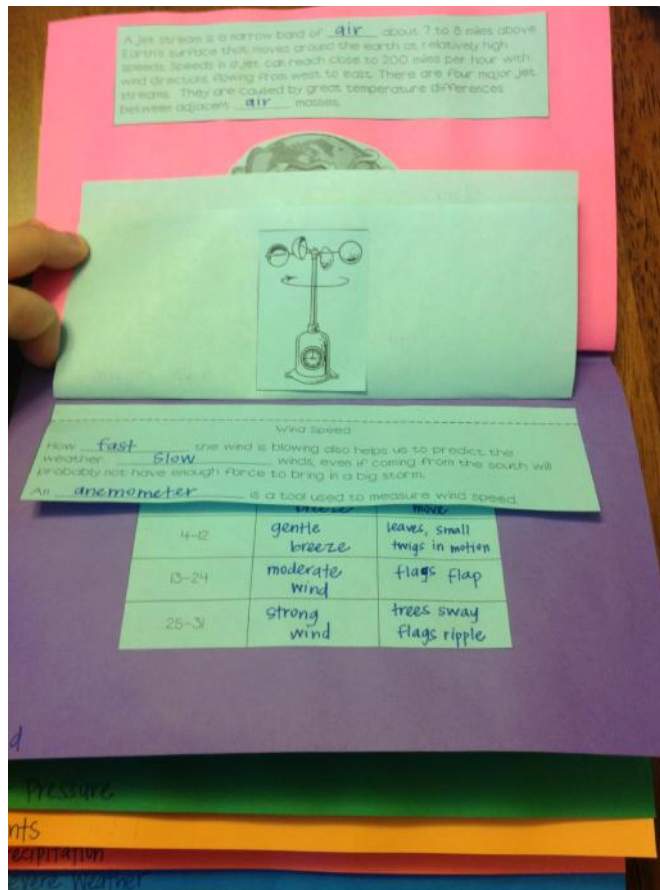
South winds generally bring cool wet weather.

If there is little wind on a particular day, the next day's weather will likely stay the same.

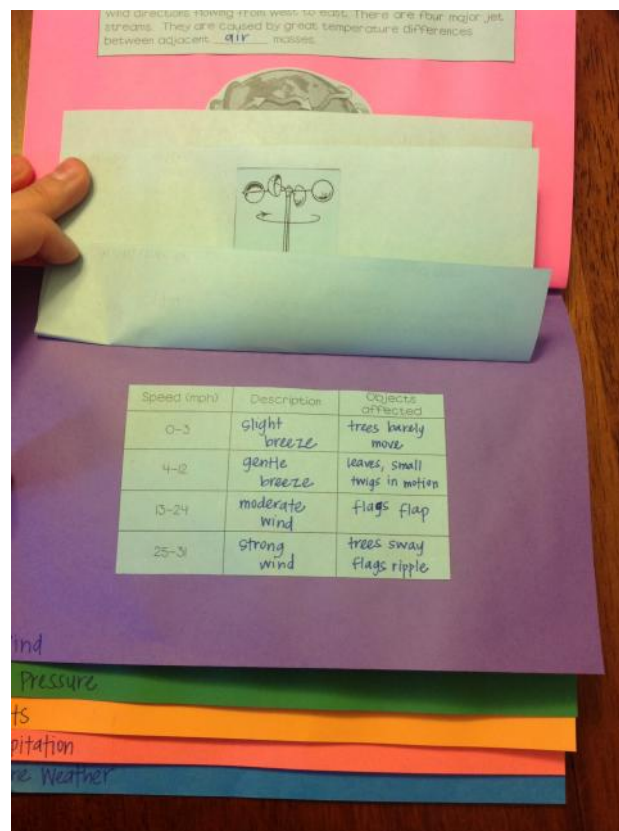
15-24	moderate wind	flags flap
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nd  
Pressure  
s

Glue weather vane picture underneath first flap, so it shows with the “wind direction” flap.



Glue the anemometer underneath the second flap, so it shows with the “wind speed” flap.



Wind speed chart goes on the bottom, all glued down.





## Air Pressure:

Barometer Readings:

Above 30: very dry  
Above 30: fair  
Below 30: change  
29 and below: rain/storm

Utah Barometric Pressures:

Highest: 31.13  
Dec. 9, 1956, Milford  
Lowest: 28.94  
Jan. 21, 2010, SLC



Cloudiness, precipitation, and cooler weather are signs of a low pressure.

Fair weather and rising temperatures are signs of a high pressure.

**AIR PRESSURE**

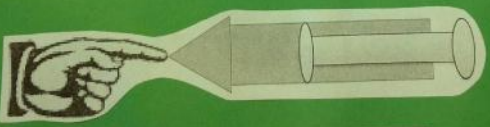
Up here I feel less weight on me. I feel low pressure.

Down here there is lots of weight on me. I feel high pressure.

Air takes up space and has weight. All the particles of air pressing down on the surface cause air pressure. At the surface of Earth, air particles are closer together. The higher you go in the atmosphere, the farther apart the air particles are. So the air pressure is lower as you go higher in the atmosphere.

Even though you can't feel it, air is pressing down on us at nearly 15 lbs. per square inch!

Air pressure is measured using a barometer.



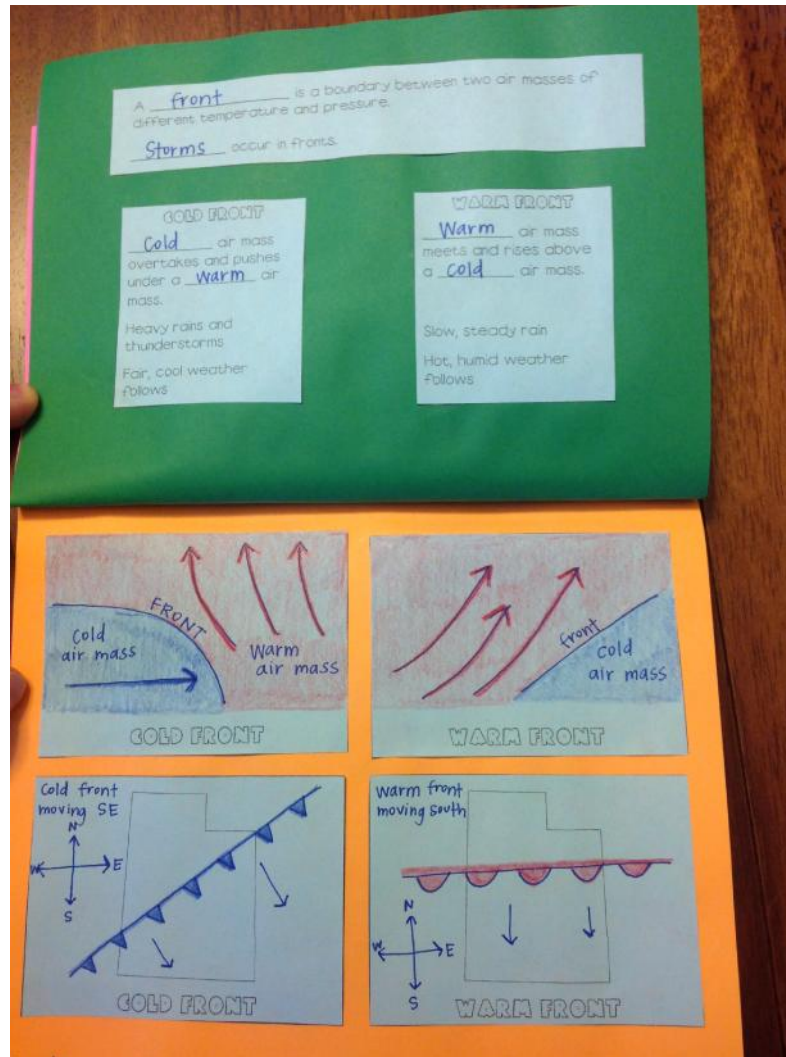
The end of a syringe is closed off with a finger. When the plunger is pulled, it will only go part way because the syringe is full of air.

ir Pressure

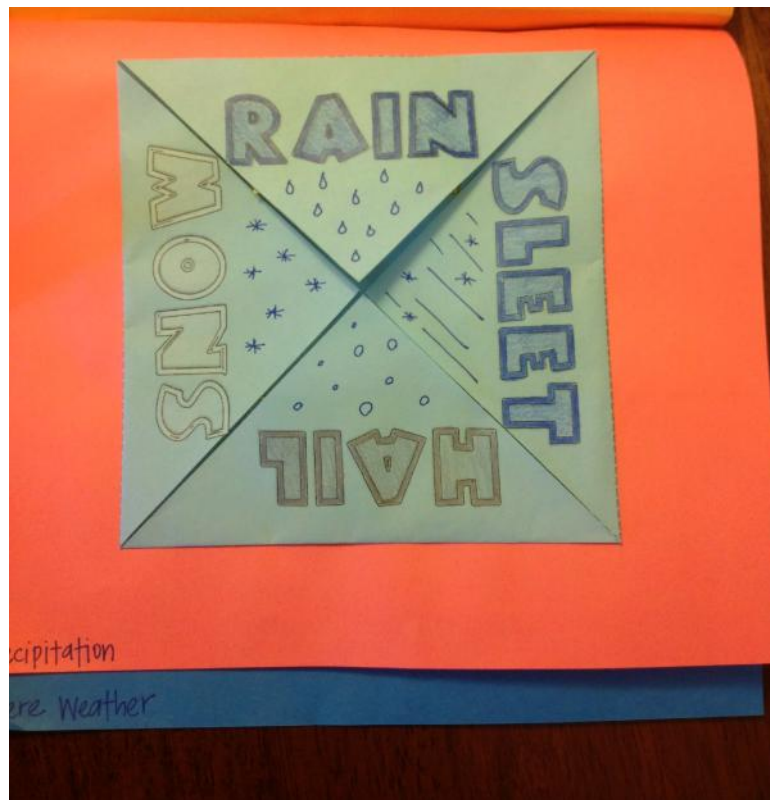
**\*For state specific barometric pressure records, visit the website:**

[http://www.wunderground.com/resources/pressure\\_records.asp](http://www.wunderground.com/resources/pressure_records.asp)

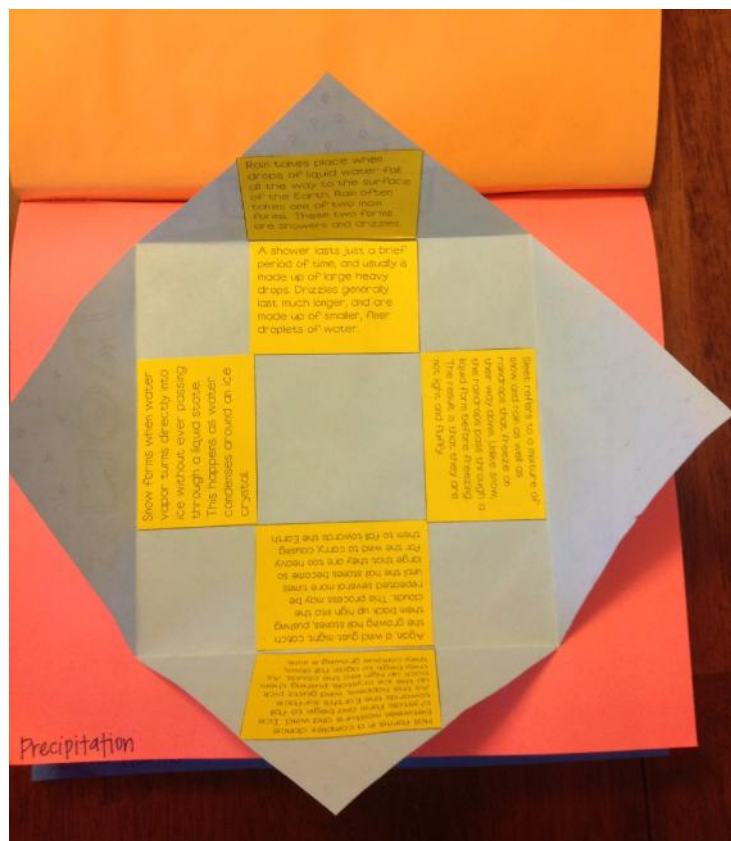
## Fronts:



## Precipitation:



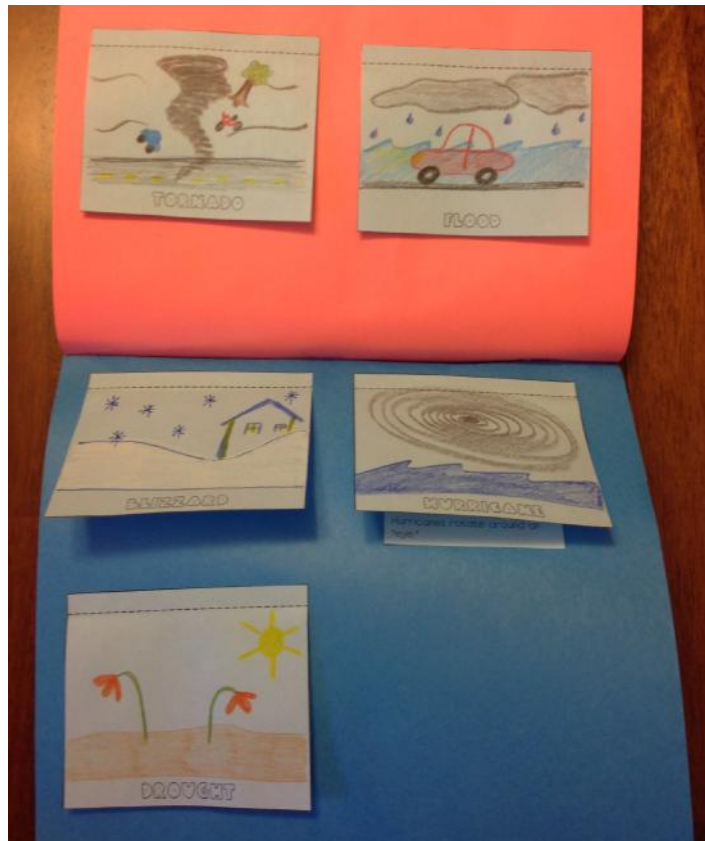
## Under flaps:





## Severe Weather:

\*Only glue under the dotted lines!



## Under flaps:

