Lab Activity: Air Masses and Fronts

INTRODUCTION:

An air mass is characterized by the weather variables that it takes from a source region. When unlike air masses collide a front is established and based on the type of air mass different weather patterns will be created.

Meteorologist follow and track air masses very carefully. As air masses move across our country meteorologist look to see where different air masses will collide. From that they can better predict a locations weather.

OBJECTIVE:

To see where air masses originate as well as how different air masses act when they collide.

VOCABULARY:

Air Mass -

Source Region -

Cold Front -

Warm Front -

Stationary Front -

Occluded Front -

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PROCEDURE A:

1. Complete the chart below by filling in the appropriate air mass symbol.
2. On the Source Regions Map below, fill in the source regions with the correct air mass symbol.

Source Region	Air Mass Symbol
Continental Arctic	
Continental Polar	
Continental Tropical	
Maritime Tropical	
Maritime Polar	

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PROCEDURE B:

1. On the cut out page in the lab color the cold air masses light blue, the warm air masses red, and the colder air mass dark blue.
2. Cut out the air mass pieces and construct a profile of how the unlike air masses appear. Glue or tape down the piece once you are sure of front.
3. In the “Symbol” box fill in the appropriate air mass symbol.
4. In the “What Happens” box give a brief description of the interaction at that frontal zone.

Cold Front Profile

Symbol:	What Happens:

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Warm Front Profile

Symbol:	What Happens:

Stationary Front Profile

Symbol:	What Happens:

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Occluded Front Profile

Symbol:	What Happens:

DISCUSSION QUESTIONS:

1. What two characteristics are used to describe an air mass?

2. A mT air mass would most likely contain what type of temperature and moisture characteristics?

3. Which symbol would be used to identify an air mass originating in central Canada?

4. How does density play a part in determining how unlike air masses react?

5. With respect to a cold front, where does precipitation occur?

6. With respect to a warm front, where does precipitation occur?

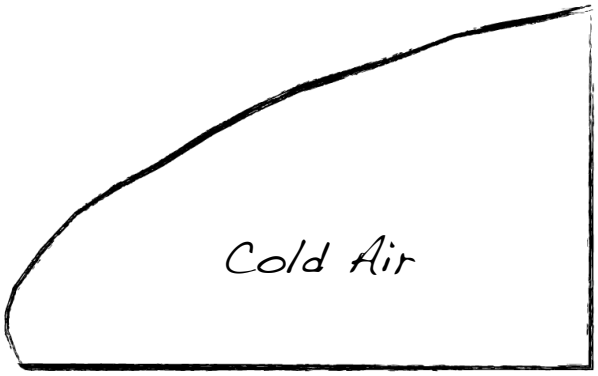
CONCLUSION: Compare the following conditions on either side of the cold front.

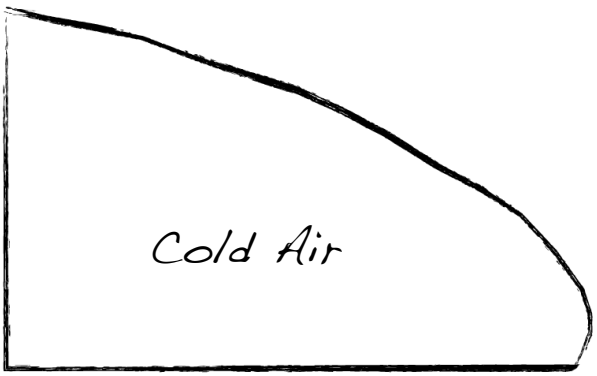
Temperature:

Pressure:

Rainfall:

CUT OUT PAGE


Cold Air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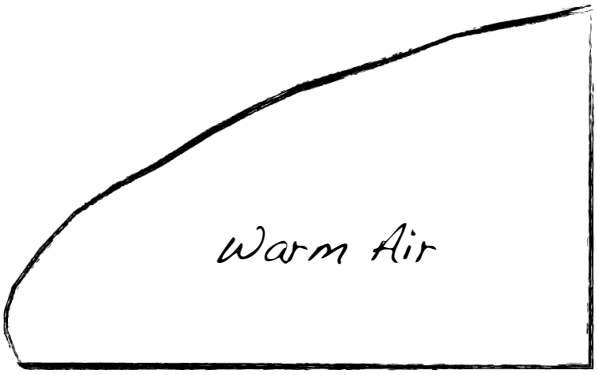
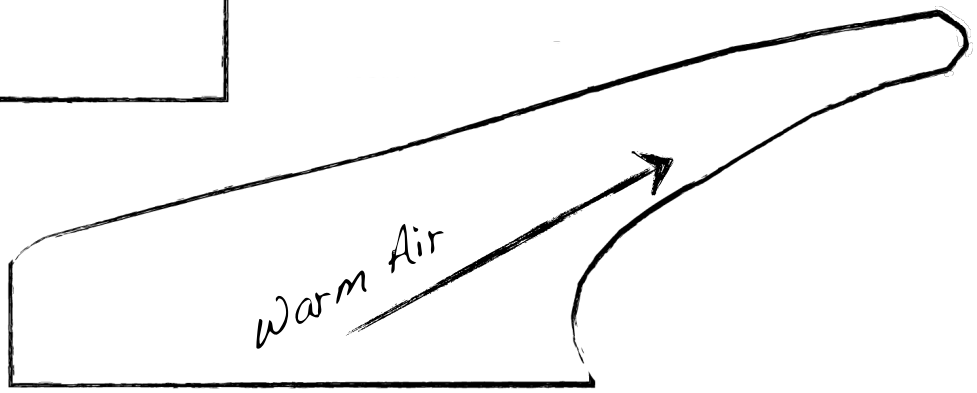

Warm Air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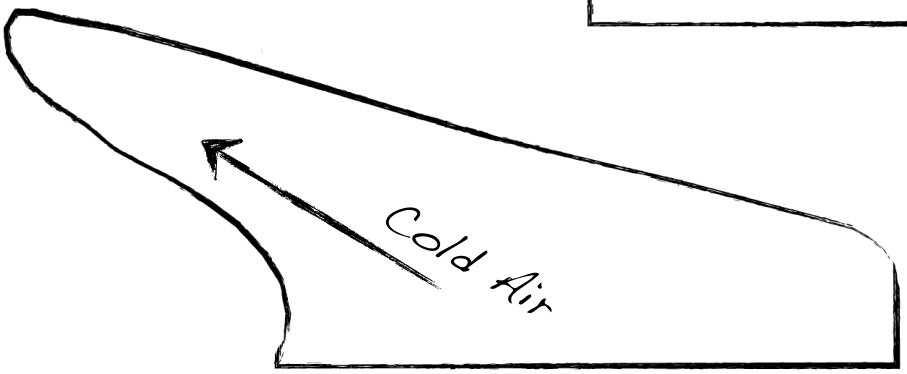
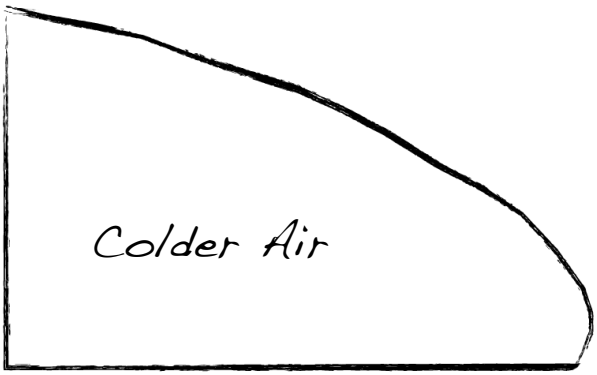
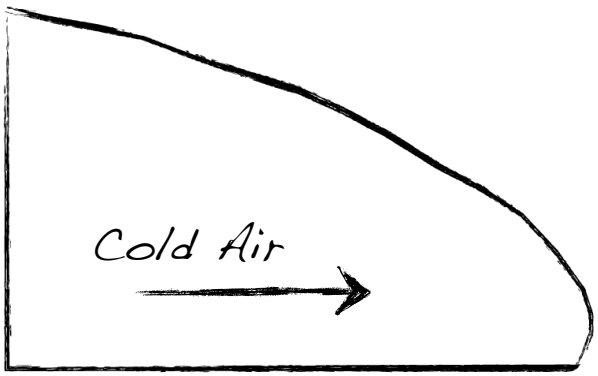
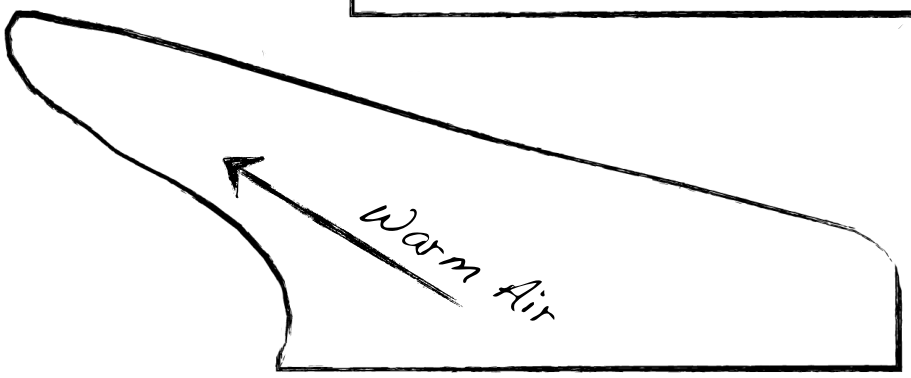

Cold Air


Colder Air


Cold Air


Warm Air