Station 4: Lights, Camera, Weather, Action!

Summary

Students transcribe local weather data, including cold and warm fronts, onto the Sky Watchers Weather Map and identify three areas of changing weather conditions.

Real-world connection

• Weather maps and frontal systems.

Materials

• Sky Watchers Weather Map
• Washable markers to use on the map
• Pencils and paper
• A copy of today's weather page from *The Globe and Mail*, another national paper or Environment Canada and Nav Canada's daily surface analysis weather map (for Canada) that can be found on-line at: **www.flightplanning. navcanada.ca/Latest/anglais/Latest-analsfc-e.html**

Preparation

• Order Sky Watchers Weather Map from Environment Canada's Inquiry Centre: enviroinfo@ec.gc.ca
• Student Instruction Sheet, one per station
• Student Handout, one per student

Teacher background information

Additional information about fronts can be found on the Sky Watchers' frontal poster, which can be downloaded at: **www.ec.gc.ca/meteoaloeil-skywatchers/default. asp?lang=En&n=149C159E-1** and in the Sky Watchers' Teachers Guide, Chapter 2, pages 2-7 to 2-10.

Curriculum outcomes

Theme: Properties of Air: Warm and Cold Fronts. For a complete list of curriculum outcomes, please go to the appropriate table at the end of this document.

References

Environment Canada, (2006). Sky Watchers Guide to Weather. Downsview, ON: Environment Canada, Ontario Region.

Station 4: Student Instructions

Welcome to the world of movies! You are now part of a movie making team, working for a director who is producing a movie that needs to be filmed in a few areas of rainy or stormy weather. You (and the team) are responsible for inspecting the weather pages of the paper and finding a map of Canada with weather information on it. Then you need to select three places in Canada where you think the weather is going to change to rain or storms. Let's see what you can find!

1 Start by opening up the weather section of the newspaper. Find the small map of Canada which has certain weather information on it. The first task of the team is to copy all that information down on the Sky Watchers Weather Map. Use the same labels so that you indicate both warm and cold fronts, temperatures, areas of thunderstorms or rain, snow, freezing rain, and anything else you see in the newspaper's map. Make sure you include the Map Key so you can remember what you have marked down!

2 Now, have a close look at your new Sky Watchers map. Find the **cold fronts** and **warm fronts**. Do you know what they are? Read below to find out!

3 In your small group, review your map. Then turn to the Student Handout and answer the questions.

Cold Fronts and Warm Fronts: How Are They the Same?

- Both are **fronts**, which is the edge where two air masses meet.
- Both involve cold air and warm air masses.
- Both can result in rain or stormy weather.
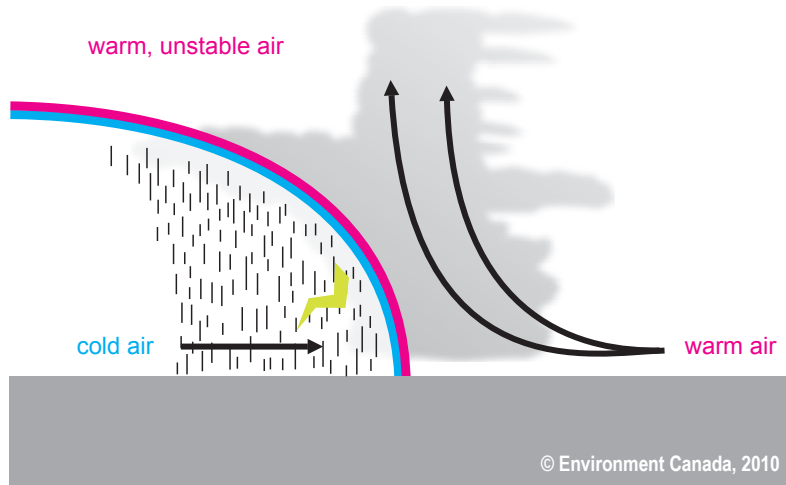- Warm air rises in both of them.
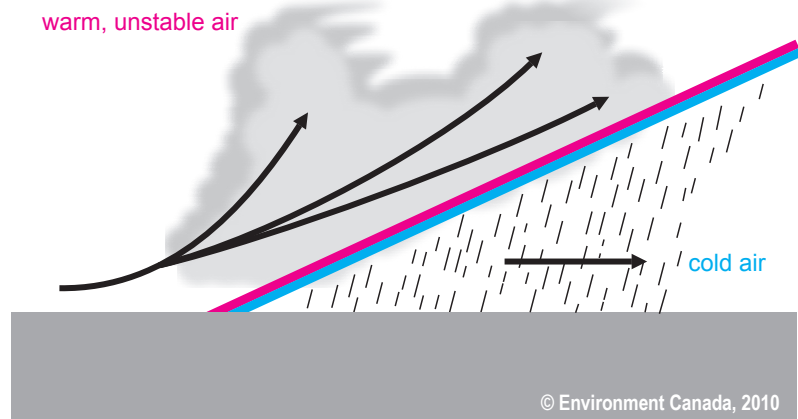
Cold Fronts and Warm Fronts: How Are They Different?

Cold Front

- Heavy cold air pushes into an area.

- This cold, dense air mass pushes the lighter, warmer air up very quickly.

- The front is steeper.

- It creates more extreme weather events like high winds, heavy rains and thunderstorms.

warm, unstable air

cold air →

warm air

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Warm Front

- A cold air mass moves out of an area (retreats).

- Warmer air moves in gradually to replace it.

- The front is not as steep.

- It can create rain or other forms of precipitation.

warm, unstable air

cold air →

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Station 4: Student Handout

Greetings! As you know, you are charged by the director of a new movie to find three locations in Canada where you expect to see some changes in the weather over the next few days. Please fill out this form so that the movie director can decide where to film.

1 Mark your community on the Sky Watchers Weather Map with a star. ★

2

Did you draw any warm fronts on your map?

☐ Yes
☐ No

If yes, what kind of weather is happening near that front?

Did you draw any cold fronts on your map?

☐ Yes
☐ No

If yes, what kind of weather is happening near that front?

3 To help out the director, select three locations in Canada where you expect significant changes in the weather over the next few days. Mark these on your map with a letter **A**, **B** and **C**.

4 Explain why you have chosen each location:

A:

B:

C: