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Middle Latitude Cyclones

Problem:

How do middle latitude cyclones affect weather patterns?

Materials:

* Tracing paper
* Sharp pencil
* Paper clips or removable tape
* Metric ruler
* Colored pencils

Procedures:

1. Use the paper clips or removable tape to secure the tracing paper over the map on the facing page.
2. Carefully trace all of the features and boundaries on the map. Be sure to include the isobars – the lines that show atmospheric pressure. Use the ruler to trace lines EA and GF.
3. Remove the tracing paper. Place it next to the map.
4. Transfer all of the letters and numbers on the map to your tracing.
5. Use the colored pencils to color the cold air, cool air, and warm air areas on the tracing. Also color the symbols used to designate the fronts.
6. Identify and label the cold front, warm front, and occluded front on your tracing.
7. Draw arrows that show the direction of surface winds at points A, C, E, F, and G.

Analyze and Conclude:

1. In which direction are the surface winds moving?

The surface winds are going northeast.

1. At which stage of formation is the cyclone? Explain your answer. Refer to Figure 14 if necessary.

It looks like stage C because the way the cold air and warm air are forming that triangle, and starting counterclockwise rotation.

1. Is the air in the center of the cyclone rising or falling? What effect does this have on the potential for condensation and precipitation?

The air is rising in the center. Rising air begins cooling and when air cools it will reach it’s dew point easier and cause condensation or cause precipitation.

1. Find the center of the low, which is marked with the letter L. What type of front has formed here? What happens to the maritime tropical air in this type of front?

It appears as though an occluded front has formed and maritime tropical air would begin swirling in this case counterclockwise.

