Garden Weather Watch

Trace how moving air changes the forecast

6.9.b "Construct an explanation of how air pressure, weather fronts, and air masses are related to weather events."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the descriptions of the air masses, circle each mention of air pressure, and number the steps that link moving air to rain.

A Front Crosses the Garden

1. On Thursday morning, the school garden feels warm and sticky. A warm, moist air mass covers the town. Far to the west, a colder, drier air mass is moving east. An air mass is a huge body of air with similar temperature and moisture throughout. Where two air masses meet, their boundary is called a weather front. The incoming cold air does not mix quickly with the warm air. Instead, it pushes under the lighter warm air. This boundary is a cold front.

2. Near the cold front, air pressure at the ground is low compared with nearby areas. Air flows toward this lower-pressure area, and the warm, moist air rises over the advancing cold air. As it rises, it cools. Water vapor can condense into cloud droplets, and tall clouds may bring a short, heavy rainstorm. Wind may shift as the front passes the garden. The front does not cause exactly the same storm everywhere. The amount of moisture and the speed of the moving air also matter.

3. By Friday, the cold front has moved east of town. The colder, drier air mass now covers the garden. Air pressure rises as a high-pressure area moves in behind the front. In a high-pressure area, air tends to sink, which makes it harder for thick rain clouds to form. The garden may have a cooler, clearer day. A different boundary, called a warm front, forms when warm air advances over cooler air. Its gentle rise can bring widespread clouds and steady rain before warmer weather arrives.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does the cold front form, and what does the incoming air do to the warm air?

2. How is low air pressure connected to rain near the cold front?

3. Why might Friday be cooler and clearer than Thursday?

4. Another garden along the cold front has less moisture in its warm air. Why might it get less rain?

3 YOUR TURN

Your own words

A town has cool, dry weather when a warm, moist air mass begins moving toward it. A low-pressure area approaches too. In three or four sentences, predict two weather changes and explain how the air masses, front, and pressure work together.

ANSWER KEY

Garden Weather Watch

GRADE 6 · 6.9.b

PART 1 · READ AND MARK

Underline the descriptions of the air masses, circle each mention of air pressure, and number the steps that link moving air to rain. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does the cold front form, and what does the incoming air do to the warm air?	**The cold front forms where the colder, drier air mass meets the warm, moist one. The cold air pushes under the lighter warm air.**
2	How is low air pressure connected to rain near the cold front?	**Air flows toward the lower-pressure area. Warm, moist air rises, cools, and forms cloud droplets that may bring heavy rain.**
3	Why might Friday be cooler and clearer than Thursday?	**The colder, drier air mass covers the garden after the front passes. High pressure moves in, and sinking air makes thick rain clouds less likely.**
4	Another garden along the cold front has less moisture in its warm air. Why might it get less rain?	**With less moisture in the rising air, fewer cloud droplets may form, so the garden might get less rain.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

As the warm, moist air mass moves over the cooler air mass, it forms a warm front. Air flowing toward the low-pressure area can rise and cool, forming widespread clouds. The town may get steady rain as the front approaches. After the front passes, the weather may become warmer.

Accept predictions that connect the advancing warm front and low pressure to rising moist air, clouds, or rain. Weather outcomes should be described as possible, not certain.