Reading the Air

Use changing atmospheric measures to explain a weather forecast.

6.7.e "atmospheric measures are used to predict weather conditions; and"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle the sentence in paragraph 3 that begins "By late afternoon," then number four details in paragraphs 1 and 2 that are clues for that forecast.

A Forecast at Pine Ridge

1 At 7 a.m., the weather station at Pine Ridge Middle School recorded several atmospheric measures. Air temperature was 18°C, and relative humidity was 88 percent. The barometer measured air pressure, the force of air on each unit of area, at 1008 millibars. Wind came from the southeast at 16 kilometers per hour. Gray stratus clouds covered most of the sky. A station report matters because these measurements describe the atmosphere at one place and time.

2 Over the next four hours, the barometer fell to 1002 millibars. Falling pressure often signals that a low-pressure system is approaching, which can bring clouds and precipitation. Humidity rose to 94 percent, so the air was closer to holding all the water vapor it could hold at that temperature. The southeast wind continued, and clouds became darker and thicker. No single measure guarantees rain, but forecasters compare several changes before making a prediction about future weather.

3 Using the combined evidence, the local forecast stated: **By late afternoon, Pine Ridge is likely to have cloudy skies, showers, and gusty southeast winds.** The forecast did not claim an exact rainfall amount or exact starting minute. Instead, it used atmospheric measures to describe likely conditions. At 3 p.m., light showers began, and the wind increased to 24 kilometers per hour. The observation supported the forecast because the predicted weather conditions occurred in town.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which atmospheric measure is the force of air on each unit of area?

2. What two measured changes gave forecasters clues that precipitation might occur?

3. Why did forecasters compare several atmospheric measures instead of relying on falling pressure alone?

4. What two observations at 3 p.m. supported the forecast?

3 YOUR TURN

Your own words

At 9 a.m., air pressure is 1016 millibars and humidity is 62 percent. At 1 p.m., pressure is 1009 millibars, humidity is 90 percent, and clouds have thickened. Write exactly two sentences: predict likely weather by evening, then name two changing measures that support your prediction.

ANSWER KEY

Reading the Air

GRADE 6 · 6.7.e

PART 1 · READ AND MARK

Circle the sentence in paragraph 3 that begins “By late afternoon,” then number four details in paragraphs 1 and 2 that are clues for that forecast. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which atmospheric measure is the force of air on each unit of area?	**Air pressure.**
2	What two measured changes gave forecasters clues that precipitation might occur?	**Air pressure fell from 1008 to 1002 millibars, and relative humidity rose from 88 percent to 94 percent.**
3	Why did forecasters compare several atmospheric measures instead of relying on falling pressure alone?	**No single measure guarantees rain. Several changes together provide stronger evidence for a prediction.**
4	What two observations at 3 p.m. supported the forecast?	**Light showers began, and the wind increased to 24 kilometers per hour.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Cloudy skies and rain are likely by evening. Air pressure fell from 1016 to 1009 millibars, and humidity rose from 62 percent to 90 percent.

Accept equivalent descriptions of falling pressure, rising humidity, thickening clouds, and continued or stronger wind as forecast clues. For the open response, accept a reasonable prediction that cites two stated changes as evidence.