Forecast the Fair

Use three kinds of weather data to predict changing conditions.

E.7.9A.3 "Interpret atmospheric data from satellites, radar, and weather maps to predict weather patterns and conditions."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline what satellite images and radar each show. Circle two phrases that explain how moving weather systems can help you predict a change.

Will the Fair Stay Dry?

1. At noon, a class plans an outdoor science fair for 3 p.m. Satellite images show cloud tops over a wide area, including clouds that have not produced rain. Comparing images from different times shows which way clouds move. However, clouds alone cannot tell exactly when rain will reach a place.

2. Radar detects precipitation and shows where it is falling now. Comparing radar scans can reveal the direction a rain band is traveling. A weather map adds the positions and movement of fronts and pressure systems. A cold front is the leading edge of advancing colder air; rain can form near it, and temperatures often fall after it passes.

3. At noon, the class checks reports for four places. Distances are measured from each named place. Use the directions and distances to decide if rain is approaching, overhead, or moving away. A nearby high-pressure center often brings fair weather. A forecast is a reasoned prediction, not a promise about exactly when conditions will change.

WEATHER REPORTS AT NOON

Place	Satellite: clouds	Radar: rain	Weather map
Bayport	Thick clouds 40 km west, moving east	Rain 20 km west, moving east	Cold front 30 km west, moving east
Pine Hill	Thin clouds overhead, moving east	No rain within 80 km	High-pressure center overhead
Milltown	Thick clouds overhead	Heavy rain overhead	Cold front overhead, moving east
Dry Creek	Clouds thinning overhead	Rain 50 km east, moving east	Cold front 50 km east, moving east

2 ANSWER WITH EVIDENCE

Use the passage

1. What is likely to happen at Bayport in the next few hours? Use one satellite clue and one radar clue.

2. Why is rain less likely at Pine Hill in the next few hours? Use radar and weather-map evidence.

3. What conditions should Milltown expect now and after the cold front passes? Use radar and weather-map evidence.

4. Is rain likely to begin at Dry Creek soon? Support your prediction with two clues from the reports.

3 YOUR TURN

Your own words

At a school field, satellite images show clouds thickening from the southwest, radar shows a rain band 25 km southwest moving northeast, and a weather map shows a low-pressure center to the southwest moving northeast. Write a three-sentence forecast that uses all three tools and names one uncertainty.

ANSWER KEY

Forecast the Fair

GRADE 7 · E.7.9A.3

PART 1 · READ AND MARK

Underline what satellite images and radar each show. Circle two phrases that explain how moving weather systems can help you predict a change. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What is likely to happen at Bayport in the next few hours? Use one satellite clue and one radar clue.	**Rain is likely to reach Bayport. Thick clouds 40 km west and rain 20 km west are both moving east toward it.**
2	Why is rain less likely at Pine Hill in the next few hours? Use radar and weather-map evidence.	**Radar shows no rain within 80 km of Pine Hill, and the weather map shows a high-pressure center overhead, which often brings fair weather.**
3	What conditions should Milltown expect now and after the cold front passes? Use radar and weather-map evidence.	**Milltown has heavy rain now, according to radar. The cold front is overhead and moving east, so temperatures will likely fall after it passes.**
4	Is rain likely to begin at Dry Creek soon? Support your prediction with two clues from the reports.	**Rain is unlikely to begin soon. Clouds overhead are thinning, and the rain is already 50 km east and moving farther east.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Rain is likely at the school field in the next few hours. Satellite images show thickening clouds from the southwest, radar shows a rain band 25 km southwest moving northeast, and the weather map shows a low-pressure center southwest of the field moving northeast. The rain band's speed could change, so its arrival time is uncertain.

Accept predictions supported by the stated direction and location of the weather features. For the open task, accept a different reasonable uncertainty, such as whether the rain band will reach the field.