Words That Measure

See how precise vocabulary turns observations into useful evidence.

8.L.V.1.b "Use grade-level general, academic, and disciplinary vocabulary to communicate clearly and precisely in a variety of settings. (C)"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline five words or phrases that are specific to science investigations, and circle two words or phrases that make the report precise rather than vague.

Mapping Heat at School

1. On a July afternoon, students at Harbor Middle collected temperatures on sidewalks, grass, and shaded benches. Their investigation examined the urban heat island effect, a pattern in which built surfaces make a city warmer than nearby rural areas. Using digital thermometers, teams recorded each measurement at the same time and height. The asphalt lot reached 118 degrees Fahrenheit, while the grass measured 92 degrees. This evidence did not prove that every city surface has the same temperature, but it showed a clear difference at their school.

2. To interpret the results, the science club compared the data rather than relying on a single observation. They proposed that dark asphalt absorbed more solar radiation than pale concrete or living plants. Trees also cooled nearby ground through shade and transpiration, the release of water vapor from leaves. The club's claim was cautious because cloud cover, wind, and the time of day can influence surface temperature. Precise terms helped readers distinguish between a measurement, an explanation, and a possible variable in the investigation.

3. The students then prepared a short report for the principal, who needed information before choosing locations for new trees. Instead of writing, "The parking lot was really hot," they stated, "At 2:00 p.m., the asphalt parking lot measured 26 degrees Fahrenheit warmer than the grass field." This revision identified the location, time, comparison, and unit. It also avoided a vague judgment. Clear communication allows a reader to evaluate the claim and use the findings when making a decision.

2 ANSWER WITH EVIDENCE

Use the passage

1. What does the disciplinary term "urban heat island effect" mean in paragraph 1?

2. What does "transpiration" mean, and why does the passage connect it to cooler ground?

3. Name the three possible variables that could influence surface temperature in the investigation.

4. Why is the sentence for the principal more precise than "The parking lot was really hot"? Give four details it includes.

3 YOUR TURN

Your own words

Write exactly two sentences for a principal deciding where to add shade at school. Use the words "measurement" and "variable," include at least one disciplinary term from the passage, and give a specific location, time, and numerical comparison with units.

ANSWER KEY

Words That Measure

GRADE 8 · 8.L.V.1.b

PART 1 · READ AND MARK

Underline five words or phrases that are specific to science investigations, and circle two words or phrases that make the report precise rather than vague. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What does the disciplinary term "urban heat island effect" mean in paragraph 1?	**It is a pattern in which built surfaces make a city warmer than nearby rural areas.**
2	What does "transpiration" mean, and why does the passage connect it to cooler ground?	**Transpiration is the release of water vapor from leaves. The passage identifies it as one way trees cool nearby ground.**
3	Name the three possible variables that could influence surface temperature in the investigation.	**Cloud cover, wind, and the time of day.**
4	Why is the sentence for the principal more precise than "The parking lot was really hot"? Give four details it includes.	**It gives the location, the time, the numerical temperature difference, and the unit, degrees Fahrenheit.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

At 1:30 p.m., our measurement showed that the asphalt bus loop was 18 degrees Fahrenheit warmer than the shaded grass near the library. Because cloud cover is a variable, the principal should compare temperatures on several sunny days before deciding where trees will reduce heat from solar radiation.

Accept scientifically sensible two-sentence reports that include both required academic words, a disciplinary term, and all requested specific details. Students may use invented but reasonable temperature data.