Before the Rain

Track a schoolyard problem and test a solution

6.11.a "Define problems and design solutions to monitor and mitigate human impact on the environment."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the problem and how wrappers could reach the creek, circle details about how the class tracks litter, and number the actions meant to keep wrappers out of the creek.

Wrappers on the Move

1. After a rainy Friday, sixth graders at Harbor School saw snack wrappers near a storm drain. Water from the blacktop carried some wrappers toward the opening. The drain leads to a nearby creek, where plastic can harm animals if they swallow it or become tangled in it. The class chose a problem they could tackle: loose litter on school grounds might reach the creek during rain. They could not count every wrapper in the creek, but they could track litter beside the drain before it washed away.

2. Each school day at dismissal, two students counted wrappers in the same marked section of blacktop. They wrote down the number and whether it had rained, then used gloves and a grabber to put the litter in a bin. For the first two weeks, the class made no other changes. Some days had many wrappers, especially after outdoor lunch. Because rain can wash litter away before the count, students knew a low count after a storm did not always mean less litter was dropped.

3. For the next two weeks, the class placed a covered trash bin near the outdoor lunch area and posted a sign asking students to use it. They kept counting at the same time and place. If counts were generally lower on days with similar weather, the change might be helping. The class would also check whether the bin was used and empty it before it overflowed. If counts stayed high, they could try moving the bin closer to where wrappers were dropped and keep monitoring.

2 ANSWER WITH EVIDENCE

Use the passage

1. What problem did the class choose to tackle? Explain how it could affect creek animals.

2. Why might a low wrapper count after a storm give the class the wrong idea about how much litter students dropped?

3. How does the new bin address the cause of the problem, instead of only removing wrappers near the drain?

4. To judge whether the new bin is helping, which counts should the class compare? Why should they check the weather notes?

3 YOUR TURN

Your own words

Choose a school problem other than litter or storm drains. In four sentences, explain its human cause and environmental effect, what you would measure and when, a solution, and how you would decide whether it worked.

ANSWER KEY

Before the Rain

GRADE 6 · 6.11.a

PART 1 · READ AND MARK

Underline the problem and how wrappers could reach the creek, circle details about how the class tracks litter, and number the actions meant to keep wrappers out of the creek. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What problem did the class choose to tackle? Explain how it could affect creek animals.	**Loose wrappers on school grounds could wash through the storm drain into the creek, where animals might swallow them or become tangled.**
2	Why might a low wrapper count after a storm give the class the wrong idea about how much litter students dropped?	**Rain might wash wrappers away before students count them, so a low count may not mean fewer wrappers were dropped.**
3	How does the new bin address the cause of the problem, instead of only removing wrappers near the drain?	**It gives students a place to throw away wrappers near outdoor lunch, so fewer wrappers may reach the blacktop and drain.**
4	To judge whether the new bin is helping, which counts should the class compare? Why should they check the weather notes?	**Compare counts from before and after adding the bin on days with similar weather. Rain can wash wrappers away and make counts misleading.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Leaving classroom lights on after everyone leaves wastes electricity, which can increase pollution from power plants. I would count empty classrooms with lights on at 4 p.m. each school day for two weeks. Then each class could assign a student to switch off the lights before leaving. I would keep counting at 4 p.m. for two more weeks and compare the counts.

Accept other explanations that connect a human action to an environmental effect. For the open task, look for a measurable check made before and after a solution, not just a proposed fix.