Changes in the Garden

Read for evidence that new materials have formed

P.5.5C.1 "Analyze and communicate the results of chemical changes that result in the formation of new materials (e.g., decaying, burning, rusting, or cooking)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB In each paragraph, underline a starting material, circle a new material, and number one visible clue to the change 1, 2, or 3 in passage order.

A Day with the Garden Club

1. At the school garden, Maya found a metal latch with rough orange patches. Yesterday's rain had left mud on the latch, too. She wiped away the mud with a damp cloth, but the orange patches stayed. Over time, water and oxygen in the air had reacted with the iron in the latch. The reaction made rust, a new material that was not there when the latch was new.

2. Near the gate, last season's leaves lay under a pile of fresh leaves. The fresh leaves were still crisp, but the older leaves had softened and become part of dark, crumbly compost. Tiny living things, such as fungi and bacteria, break down dead leaves. As they feed, chemical changes make new materials and release gases into the air. Brushing off dirt would not make the older leaves crisp again.

3. After working outside, the club cooked pancakes in the school kitchen. Before heating, the batter could be poured into any shape. On the hot pan, bubbles rose, and the wet surface became firm and golden brown. Heating caused changes that made new materials in the cooked pancake, including brown compounds on its surface. The finished pancake could not be poured back into a bowl like batter.

2 ANSWER WITH EVIDENCE

Use the passage

1. Maya wiped mud off the latch, but the orange patches stayed. Which result shows that a new material formed? Explain.

2. How were the older leaves different from the fresh leaves? What new material did the older leaves help form?

3. What changes to the pancake batter show that cooking did more than change its shape? Name a new material made on the pancake.

4. Compare the latch and the pancake. What happened to both, and how did their visible results differ?

3 YOUR TURN

Your own words

Choose a chemical change you have seen that is not in the passage. In three sentences, describe the material before and after the change, name a new material that formed, and explain which observation supports your claim.

ANSWER KEY

Changes in the Garden

GRADE 5 · P.5.5C.1

PART 1 · READ AND MARK

In each paragraph, underline a starting material, circle a new material, and number one visible clue to the change 1, 2, or 3 in passage order. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Maya wiped mud off the latch, but the orange patches stayed. Which result shows that a new material formed? Explain.	**The rough orange patches are rust, a new material made when iron reacted with water and oxygen. Unlike the mud, they did not wipe away.**
2	How were the older leaves different from the fresh leaves? What new material did the older leaves help form?	**The older leaves were soft instead of crisp and had become part of dark, crumbly compost.**
3	What changes to the pancake batter show that cooking did more than change its shape? Name a new material made on the pancake.	**The batter became firm and golden brown. New brown compounds formed on the cooked pancake's surface.**
4	Compare the latch and the pancake. What happened to both, and how did their visible results differ?	**Both formed new materials. The latch developed rough orange rust, while the pancake became firm and golden brown.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I left a cut apple on a plate, and its pale surface turned brown. New brown compounds formed on the cut surface where it met the air. The change in color supports my claim that a chemical change occurred.

Accept other accurate descriptions of new materials and observable evidence from the passage. For Your Turn, accept a different chemical change if the student identifies a plausible new material and connects it to an observation.