

Heat Change Detectives

Use evidence to explain which temperature changes can go back.

2-PS1-4 "Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. Clarification Statement: Examples of reversible changes could include materials such as water and butter at different..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each temperature change in the passage. Circle the words that tell whether the change can be reversed, because those details are evidence for a claim.

Maya Tests Temperature Changes

- ① Maya put an ice cube in a cup. In the warm room, the ice melted into liquid water. Later, she put the cup in a freezer. The liquid water froze and became solid ice again. This change can be reversed.
- ② At lunch, Maya's butter sat near a warm soup bowl and became soft. She cooled it in a refrigerator, and it became firm again. The butter changed with temperature, but cooling returned it to its earlier state. That is evidence for a reversible change.
- ③ Some temperature changes do not return materials to their earlier state. Maya heated an egg in a pan. It became a cooked egg, and cooling it did not make it raw again. The change cannot be reversed. This evidence supports an irreversible-change claim.

2 ANSWER WITH EVIDENCE Use the passage

- 1 What claim can you make about the ice and water change? Write one detail from the passage as evidence.

- 2 How does the butter example show a reversible change? Use two details from the passage.

- 3 Are all changes caused by heating or cooling reversible? Make a claim and use the egg example as evidence.

3 YOUR TURN Your own words

Choose a material not named in the passage and a change caused by heating or cooling. Draw the material before and after the change, then write two sentences: a claim telling whether the change can be reversed and evidence explaining why.

PART 1 • READ AND MARK

Underline each temperature change in the passage. Circle the words that tell whether the change can be reversed, because those details are evidence for a claim. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What claim can you make about the ice and water change? Write one detail from the passage as evidence.	The ice and water change can be reversed. Evidence: liquid water froze and became solid ice again.
2	How does the butter example show a reversible change? Use two details from the passage.	The butter became soft near the warm soup bowl, then became firm again after Maya cooled it in a refrigerator.
3	Are all changes caused by heating or cooling reversible? Make a claim and use the egg example as evidence.	No, not all temperature changes are reversible. The egg became cooked, and cooling it did not make it raw again.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Melting chocolate can be reversed. When the melted chocolate cools, it becomes solid chocolate again.

Accept claims that correctly identify a temperature change as reversible or irreversible and include evidence about whether the material returns to its earlier state. For the open task, accept accurate examples not named in the passage, with a matching drawing and explanation.