

Water Change Watch

Read how heating and cooling change water from one state to another.

SC.3.P.9.1 "Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation."

NAME _____ DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each scientific word that names a change of state. Circle sentences that tell what heating does, and box sentences that tell what cooling does.

Water on the Move

- ① Water can be a solid, a liquid, or a gas called water vapor. Its state can change when it gains or loses heat. On a warm day, an ice cube gains heat and melts into liquid water. Melting happens when a solid becomes a liquid. The water is still water, even though it looks different.
- ② Heating liquid water can change it into water vapor in two ways. When water boils, bubbles of water vapor form throughout the liquid. Boiling can happen in a hot pot. Evaporation happens slowly at the surface of liquid water, such as water drying from a sidewalk. Both boiling and evaporation change liquid water into water vapor.
- ③ Cooling can cause water vapor to condense into liquid water. For example, water vapor in air cools on the outside of a cold glass and forms drops. Condensation changes a gas to a liquid. With more cooling, liquid water can freeze and become solid ice. Freezing changes a liquid to a solid, often in a freezer.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What change happens when an ice cube gains heat?

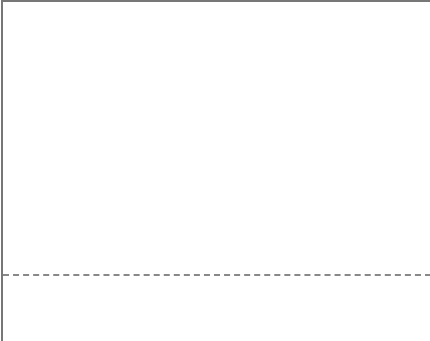
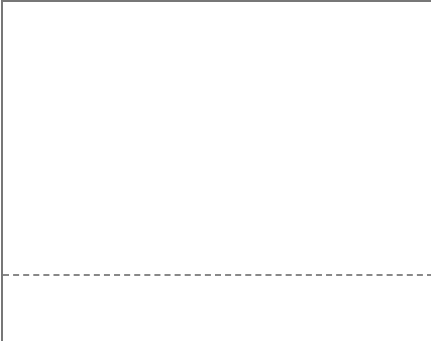
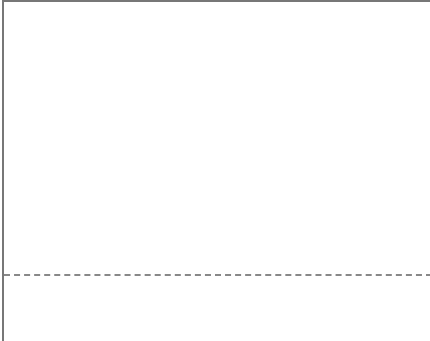
2 How are boiling and evaporation alike? How are they different?

3 What causes drops to form on the outside of a cold glass? Name the change of state.

4 What happens to liquid water when it has more cooling?

3 YOUR TURN _____ Your own words

In the three panels, draw a pot of liquid water, water vapor above it, and liquid drops on a cooled lid, one stage in each panel. Label the state in each panel, label the arrow from panel 1 to panel 2 "boiling" and the arrow from panel 2 to panel 3 "condensation," then write one sentence telling which change needs heating and which needs cooling.

		
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PART 1 • READ AND MARK

Underline each scientific word that names a change of state. Circle sentences that tell what heating does, and box sentences that tell what cooling does. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What change happens when an ice cube gains heat?	It melts, changing from solid ice to liquid water.
2	How are boiling and evaporation alike? How are they different?	Both change liquid water into water vapor. Boiling makes bubbles throughout the liquid, while evaporation happens slowly at the surface.
3	What causes drops to form on the outside of a cold glass? Name the change of state.	Water vapor cools and condenses into liquid water drops.
4	What happens to liquid water when it has more cooling?	It can freeze and become solid ice.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: liquid water in a pot. Arrow from panel 1 to panel 2: boiling. Panel 2: water vapor. Arrow from panel 2 to panel 3: condensation. Panel 3: liquid water drops on a cooled lid. Boiling needs heating, and condensation needs cooling.

Accept equivalent descriptions of the state changes if they match the passage. For the panel task, check that each panel has the correct state label, both arrows have the required process labels, and the sentence correctly connects boiling with heating and condensation with cooling.