

States of Matter Experiments

Week 10 — Wednesday | Physical Science

How Matter Changes

Matter can change from one state to another. When a **solid** gains heat, it can **melt** into a liquid. Think of ice melting into water on a warm day. When a **liquid** gains more heat, it can **evaporate** into a gas. You see this when boiling water makes steam.

The opposite can happen too. When a **gas** loses heat, it can **condense** back into a liquid. Water droplets on the outside of a cold drink glass are condensation. When a **liquid** loses heat, it can **freeze** into a solid. Water freezes into ice in the freezer.

Heat and cold cause matter to change states. Scientists study these changes to understand how the world works around us.

Reading Questions

1. What happens to a solid when it gains heat?

2. Name one example of evaporation from your everyday life.

3. What causes matter to change from one state to another?

Experiment Vocabulary

Melt

Evaporate

Condense

Freeze

Experiment 1: Ice Melting Observation

Ask a grown-up to help you. Place three ice cubes on a plate and watch them for 30 minutes.

Time	What Do You See?	State of Matter
0 minutes		Solid
10 minutes		
20 minutes		
30 minutes		

What happened to the ice? Write your observation.

Experiment 2: Boiling Water (with Adult Help)

What You Need: A pot of water, a stove, and a grown-up

Steps:

1. Fill a pot with water and place it on the stove with a grown-up.
2. Turn on the heat and watch carefully.
3. When you see bubbles and steam, turn off the heat.
4. Draw what you see below.

What I Saw	State of Matter	Type of Change
Water in pot (before heating)	Liquid	
Bubbles in water		
Steam rising up		

State Change Sort

Read each example. Write **MELT**, **EVAPORATE**, **CONDENSE**, or **FREEZE**.

Example	State Change
Snow turning into puddles	
Water droplets on a cold window	
Water in the freezer making ice	
A wet puddle drying up in the sun	
A candle making liquid wax	



True or False

Circle **T** for True or **F** for False.

- ☐ 1. Heat can cause a solid to melt into a liquid.
- ☐ 2. Freezing happens when a liquid gains heat.
- ☐ 3. Steam is an example of a gas.
- ☐ 4. Matter cannot change from one state to another.
- ☐ 5. Condensation is when a gas turns into a liquid.
- ☐ 6. Ice melting is an example of freezing.



Draw the Changes

Draw what happens in each example.

Ice Melting

Water Boiling

Freezing



Fill in the Blanks

Word Bank:

solid liquid gas melt evaporate condense freeze heat

- 1. Ice is the _____ state of water.
- 2. When ice melts, it becomes a _____.
- 3. Adding _____ can make a solid melt.
- 4. When water turns to steam, it _____.
- 5. Steam is water in its _____ form.
- 6. When steam cools down, it can _____ into liquid droplets.
- 7. Putting water in the freezer will make it _____.



Think About It

Think about a cold drink on a hot day. Why do water droplets form on the outside of the glass? Explain using what you learned.
