

Matter and its interactions

Science · Grade 5 · 45 min · Term 3, Week 1

CURRICULUM ALIGNMENT

Grade 5 Science. NGSS 5–PS1–1: Develop a model to describe that matter is made of particles too small to be seen, and NGSS 5–PS1–2: Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

[Common Core State Standards](#) ↗

LEARNING INTENTION

Describe the properties of solids, liquids, and gases and explain how matter can change state

SUCCESS CRITERIA

- I can identify and describe the properties of solids, liquids, and gases.
- I can give an example of matter changing from one state to another.
- I can explain what happens to particles when matter heats up or cools down.
- I can use evidence from an observation to support a claim about matter.

Lesson Structure

HOOK

- Three mystery bags on the mat: ice cube, water in a zip-lock bag, air-filled balloon.
- What do these three things have in common?
- All three are the same substance. How is that possible?

TEACHING

- Matter is anything that has mass and takes up space.
- Solids hold their shape; liquids take the container's shape; gases spread out to fill any space.
- I notice the ice is rigid. I wonder what happens to its particles when it melts.
- Particles in a solid are packed tightly; in a gas they move fast and spread apart.

PRACTICE

- Sort six picture cards: steam, rock, juice, smoke, clay, and mercury.
- Hold up your card. Which state of matter? Give one reason.
- Thumbs up, sideways, or down: can you explain what particles are doing?

CLOSURE

- Name one solid, one liquid, and one gas from today.
- Which state has the most tightly packed particles?
- Point to the success criteria you feel most confident about.

Differentiated Groups

EMERGING

TASK

- Match picture cards to solid, liquid, or gas labels.
- Write one property under each label using a word bank.
- Circle the state with the most tightly packed particles.

MATERIALS

Solid/liquid/gas sorting mat (1 per student), 6 picture cards per student (steam, rock, juice, smoke, clay, mercury), property word bank strip (1 per student), pencils

TEACHER ROLE

- Sit with this group for the first 8 minutes.
- Read each property aloud. Students point, then write.
- Step away once sorting is secure. Return to check claims.

DEVELOPING

TASK

- Sort the six picture cards and record each state in a table.
- Write one sentence: what happens to particles when ice melts.
- Choose one card. Write a claim and one piece of evidence.

MATERIALS

States of matter recording table (1 per student), 6 picture cards per student (steam, rock, juice, smoke, clay, mercury), pencils, sentence starter strip (1 per student)

TEACHER ROLE

- Check in at the start. Confirm table setup is correct.
- Return at 12 minutes to read claims and evidence.
- Prompt: What does your evidence actually show?

EXTENDING

TASK

- Sort the six cards. Then add two examples of your own.
- Describe a state change. Explain what happens to particles.
- Write a claim about conservation of matter. Support with reasoning.

MATERIALS

Blank investigation journal page (1 per student), 6 picture cards per student (steam, rock, juice, smoke, clay, mercury), pencils

TEACHER ROLE

- Give a brief launch prompt. Then step away completely.
- Check in at 15 minutes. Challenge any unsupported claims.
- Ask: How do you know matter is conserved through a change?

ASSESSMENT NOTES

- Criterion 1: Students correctly sort and label all six cards.
- Criterion 2: Student gives a real, accurate change-of-state example.
- Criterion 3: Student explains particle movement during heating or cooling.
- Criterion 4: Written claim references an observation, not just a guess.

RELIEF TEACHER NOTES

- Mystery bags and picture cards are on the prep table, labeled.
- Emerging group needs the most adult support. Sit with them first.
- Each group has a materials set. Do not mix the card sets.
- Closure: students name one solid, liquid, and gas from today.