Mystery Matter Lab

Use observations and tests to classify four samples.

P.5.5A.3 "Analyze matter through observations and measurements to classify materials (e.g., powders, metals, minerals, or liquids) based on their properties (e.g., color, hardness, reflectivity, electrical conductivity, thermal conductivity…"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two property clues for each sample, then circle a test result that helps you place each sample in a group.

Four Samples, Four Groups

1. At a classroom mystery station, four samples sit beside a magnet, a cup of water, and a simple battery circuit. The circuit uses a small bulb to show whether electricity passes through a solid. Students look at each sample before testing it. They also watch what happens when a small amount is stirred into water. One clue may fit several groups, so they compare clues instead of guessing.

2. Sample A is a gray, bendable strip from a toolbox. It pulls toward the magnet, and the bulb lights when the strip joins the circuit. Sample B is a clear, hard piece taken from a rock. It can scratch a glass tile, does not pull toward the magnet, and does not light the bulb. Its flat faces meet at sharp angles.

3. Sample C is a pile of fine white particles from a kitchen jar. The particles slip through fingers and dissolve when stirred into water, leaving a clear mixture. Sample D is pale yellow and flows to take the shape of its cup. When poured into water, it forms a layer on top instead of mixing in. The water test helps separate these two samples, even though both can be poured.

2 ANSWER WITH EVIDENCE

Use the passage

1. Classify sample A as a powder, metal, mineral, or liquid. Which two test results support your choice?

2. Why does the evidence fit sample B better as a mineral than as a metal? Use two clues.

3. Classify sample C as a powder or a liquid. How do its form and its water test support your choice?

4. Classify sample D as a powder or a liquid. How do its shape and its water test support your choice?

3 YOUR TURN

Your own words

Choose a material not named in the passage. In three sentences, name it, give at least two property observations or test results, and explain which group it belongs to: powder, metal, mineral, or liquid.

ANSWER KEY

Mystery Matter Lab

GRADE 5 · P.5.5A.3

PART 1 · READ AND MARK

Underline two property clues for each sample, then circle a test result that helps you place each sample in a group. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Classify sample A as a powder, metal, mineral, or liquid. Which two test results support your choice?	**Metal. It is pulled by the magnet and lets electricity pass through it, lighting the bulb.**
2	Why does the evidence fit sample B better as a mineral than as a metal? Use two clues.	**B came from a rock and can scratch glass. Unlike A, it does not light the bulb in the circuit.**
3	Classify sample C as a powder or a liquid. How do its form and its water test support your choice?	**Powder. It is a pile of fine particles, and the particles dissolve when stirred into water.**
4	Classify sample D as a powder or a liquid. How do its shape and its water test support your choice?	**Liquid. It flows to take the shape of its cup and forms a layer on top of water.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

My material is aluminum foil. It looks shiny and lets electricity pass through it in a teacher's low-voltage circuit, but a magnet does not pull it. I classify it as a metal because it conducts electricity, even though it is not magnetic.

Accept classifications supported by the stated properties. For Your Turn, accept a different material if its observations are accurate and support its group.