Mineral Clue Hunt

Use physical properties to identify minerals and explain how rocks form.

SC.4.E.6.2 "Identify the physical properties of common earth-forming minerals, including hardness, color, luster, cleavage, and streak color, and recognize the role of minerals in the formation of rocks."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the five physical-property names. Circle the sentence that explains how minerals helped form the granite rock.

Clues Inside Granite

1. On a class rock walk, Maya found a piece of granite with pink, white, and black grains. Granite is a rock, not one single mineral. It formed when melted rock cooled slowly underground. Different minerals locked together as it cooled. The pink grains were feldspar, the white grains were quartz, and the black grains were mica.

2. Scientists identify minerals by testing physical properties. Hardness tells how well a mineral resists scratching. Quartz is hard enough to scratch glass, but mica can be scratched more easily. Color is the mineral's seen color, yet it can change when impurities are present. Luster describes how a surface reflects light. Mica has a shiny, pearly luster.

3. Other tests reveal more clues. Cleavage is the way some minerals break along smooth, flat surfaces. Mica has one direction of cleavage, so it splits into thin sheets. Streak is the color of a mineral's powder after it is rubbed on an unglazed tile. Hematite may look gray or black, but its streak is reddish brown.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did minerals help form the granite rock?

2. Which mineral in the passage is harder, quartz or mica? What observation supports your answer?

3. Why might color alone not identify a mineral correctly?

4. What property explains mica splitting into thin sheets? What property can help identify hematite even when it looks gray or black?

3 YOUR TURN

Your own words

Invent a mineral sample for a rock builder. Write exactly four sentences that describe at least three physical properties, including one test observation, and explain how minerals can form a rock.

ANSWER KEY

Mineral Clue Hunt

GRADE 4 · SC.4.E.6.2

PART 1 · READ AND MARK

Underline the five physical-property names. Circle the sentence that explains how minerals helped form the granite rock. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did minerals help form the granite rock?	**Different minerals locked together as melted rock cooled slowly underground.**
2	Which mineral in the passage is harder, quartz or mica? What observation supports your answer?	**Quartz is harder because it can scratch glass, while mica can be scratched more easily.**
3	Why might color alone not identify a mineral correctly?	**A mineral's color can change when impurities are present.**
4	What property explains mica splitting into thin sheets? What property can help identify hematite even when it looks gray or black?	**Cleavage explains mica splitting into thin sheets. Streak helps identify hematite because its powder is reddish brown.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

My mineral is very hard, and it scratches glass. It has a dull luster and a white streak. It breaks along smooth, flat surfaces, showing cleavage. Minerals like this one can lock together with other minerals as melted rock cools to form a rock.

Accept accurate descriptions of three or more physical properties and at least one clear test observation. The final sentence should explain that minerals join or lock together to form a rock, often as melted rock cools.