

Rock Detective Data

Use observations and simple tests to sort mystery rocks.

S3E1.a "Ask questions and analyze data to classify rocks by their physical attributes (color, texture, luster, and hardness) using simple tests."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each word or phrase that gives a clue about color, texture, luster, or hardness. Circle the sentence that explains how matching data can sort rocks into groups.

Mystery Rock Notes

- ① Rocks can look alike at first, but careful observations can sort them into groups. Color tells what you see. Texture tells whether a surface feels smooth, rough, grainy, or bumpy. Luster tells how light reflects. A rock may look shiny, dull, or glassy. These attributes are clues, not the rock's name.
- ② A class examined three mystery rocks. They used a hand lens to see texture and held each rock under a lamp to check luster. For hardness, they tried to scratch each rock with a fingernail. They recorded their observations in the data table. A scratch means the rock is softer than the fingernail.

MYSTERY ROCK DATA

Rock	Color	Texture	Luster	Fingernail Scratch?
A	Brown	Rough	Dull	Yes
B	Brown	Rough	Dull	Yes
C	Black	Smooth	Shiny	No

- ③ Data can show patterns. When two rocks have several matching attributes, they may fit in one group. A rock with different attributes may belong in another group. Scientists also ask questions. For example, "Which rocks are rough and dull?" A good question can be answered by checking recorded observations before making a classification.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Using the data table, which two rocks should be placed in the same group? Name two matching attributes.

2 Which rock is black, smooth, shiny, and not scratched by a fingernail?

3 What does a fingernail scratch tell you about a rock's hardness?

4 Write one question about color, texture, luster, or hardness that the data table can answer.

3 YOUR TURN _____ Your own words

Choose three safe rocks to examine. Use a fingernail to test each rock, fill in the table, and place rocks in the same group only when several attributes match.

ROCK AND GROUP	COLOR	TEXTURE	LUSTER	FINGERNAIL SCRATCH?

PART 1 • READ AND MARK

Underline each word or phrase that gives a clue about color, texture, luster, or hardness. Circle the sentence that explains how matching data can sort rocks into groups. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Using the data table, which two rocks should be placed in the same group? Name two matching attributes.	Rocks A and B. They are both brown and rough. They also are dull and can be scratched by a fingernail.
2	Which rock is black, smooth, shiny, and not scratched by a fingernail?	Rock C.
3	What does a fingernail scratch tell you about a rock's hardness?	The rock is softer than a fingernail.
4	Write one question about color, texture, luster, or hardness that the data table can answer.	Answers vary. Example: Which rocks are brown and rough?

PART 3 • YOUR TURN (SAMPLE ANSWER)

ROCK AND GROUP	COLOR	TEXTURE	LUSTER	FINGERNAIL SCRATCH?
Rock 1, Group 1	Gray	Rough	Dull	Yes
Rock 2, Group 1	Gray	Rough	Dull	Yes
Rock 3, Group 2	Black	Smooth	Shiny	No

Accept any grouping supported by several matching observations. For Question 4, accept any question that can be answered from the table and asks about a listed physical attribute.