

11/09

Sandstone

#5

Describe the types of weathering and erosion you can infer in this picture of Smith Rocks, Oregon



Learning

target: I can use tools to analyze sand samples.

Sand is classified dependant on its grain size. The Wentworth Scale is the name of the classification system.

Open the book to p. 35

Wentworth
SCALE OF ROCK PARTICLE SIZES

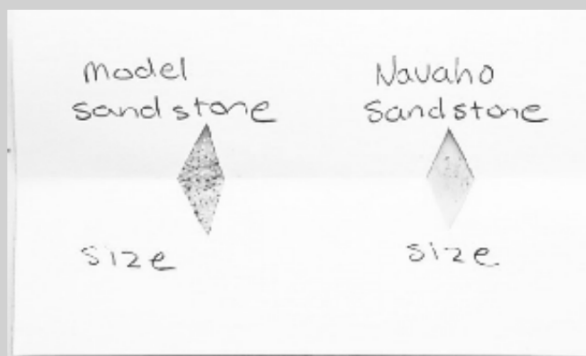
CLASSIFICATION	PARTICLE SIZE (DIAMETER)
Boulder	Above 256 mm
Cobble	64–256 mm
Pebble	4–64 mm
Gravel (or granule)	2–4 mm
Very coarse sand	1–2 mm
Coarse sand	0.5–1 mm
Medium sand	0.25–0.5 mm
Fine sand	0.125–0.25 mm
Very fine sand	0.062–0.125 mm
Silt	0.004–0.062 mm
Clay	Less than 0.004 mm

p. 35 Green Resource book



Learning target:

I can use tools to analyze sand samples.



Step 1

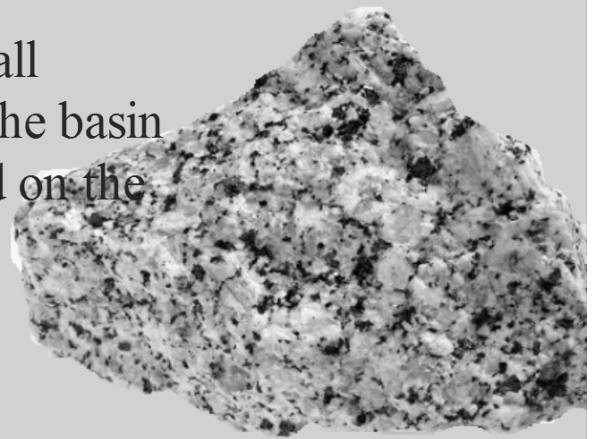
Set up a card ready with two diamond holes and tape on the back

Step 2

Place a small sample of Navaho Sandstone on one of the tape holes.

Step 3

Place a small sample of the basin model sand on the other tape.



Learning

target: I can use tools to analyze sand samples.

Table 1-4 you have 5 minutes at the stereoscopes to observe the sand and decide the grain size using the wentworth scale. record the grain size on your sample card.

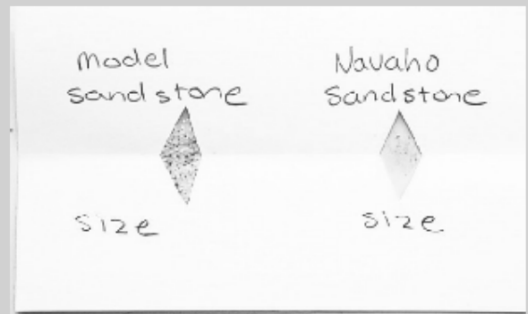
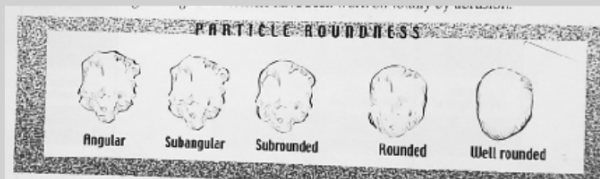
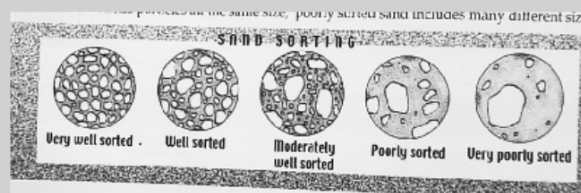


Table 5-8
read p-34
Explain in your journal how geologists describe the shape of sand and sorting

Shape



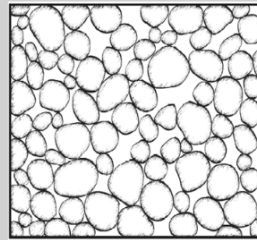
Sorting



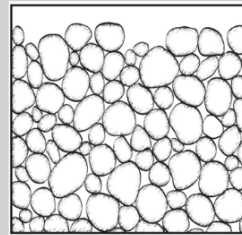
I can use tools to analyze sand samples.

Formation of sandstone

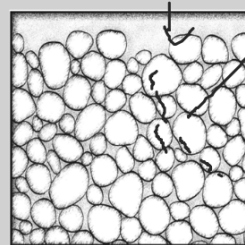
1. Sand is carried by wind or water until it is deposited in a basin.
If animals are present they may leave tracks in the sand.
- 2 Over a long period of time the sand is compacted, pushed together due to the weight of sediments on top of it.
- 3 A chemical matrix glues individual grains together. A process called lithification. This forms the rock we call sandstone.



Sand—loosely packed soon after deposition



Sand—compacted long after deposition



Sand—surrounded by cementing mixture

Pores



Copy these notes into your journal

What do you know about the shale from the Grand Canyon?

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Learning target:

I can use tools to analyze sand samples.

The shale from the Grand Canyon is not porous, (water does not soak through) contains fossils of plants and has flaky layers.

How do you think this might have been formed?



Learning
target:

I can model the formation of shale.

