

# GRAVELS TRAVELS

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Grades: 4-8

Time Allotted: At least 15 minutes. Depends on level of detail.

Objectives:

To view river gravels as part of potential sedimentary rocks and as clues to the path of the river over time.

Materials:

- A plastic bag of gravel (scooped up by river, bought at gardening shop, etc.)
- Hand lens.
- Writing materials.
- Clear plastic bottle (quart or smaller).

Procedure:

A. Sediment bottle.

1. Use some dirt, sand, and pebbles, scooped up from landscaping or a nearby field, to about 1/3 depth, add water to the depth of another 1/3.
2. Close tightly. Turn upside down, then right side up, shake it!
3. What happened to the dirt, sand, and pebbles when the water was moving quickly?
4. What happened when the water began to slow down?
5. What happened when the water was still?
6. Describe how everything in the bottle looked after the water was still.
7. Did all the pebbles settle to the bottom? All the sand? All the mud?
8. What is the difference between pebbles, sand, and mud?
9. Try leaving the bottle to stand all afternoon or overnight. Did anything in the bottle change when you looked at it later?
10. Measure the layers in the bottle, then draw it so that 1 inch in bottle=1 inch in your drawing). Label the layers, the water, the bottle, and anything else you think would help to make your drawing a good record of your experiment.
11. Compare the dirt, sand, mud, and pebbles in the bottle to rocks in your sample set. If each layer hardened into a rock, what rock would they be?

B. Gravel. (Distribute about a half cup of gravel to each student.)

1. Using your hand lens, describe:
  - a. Shape(s)
  - b. Color(s)
  - c. Size(s)
  - d. Marking(s)
  - e. Other interesting things.
2. Group similar pieces of gravel together.
3. Write down your observations, and illustrate them with drawings.
4. If you can see any rock types in the gravel, what are they (igneous, sedimentary, or metamorphic)?

5. Can you estimate how many or the percent of each group or rock type you have found?
6. Compare the gravel to rocks in your sample set. If this gravel were glued together and hardened into a rock, what rock would it be?

C. River rocks.

1. Refer to the diagram of a river (attached).
2. Remembering the sediment bottle, where in the river might the largest gravels be found?
3. Where might the finer pieces (sands and mud) be moved in the river?
4. These gravels were all picked up together. Why? (Hint: do river flows stay the same all year, when it is dry and when it is wet, when snow is melting, or late in the summer when all the snow is gone and no rain has fallen for weeks?)