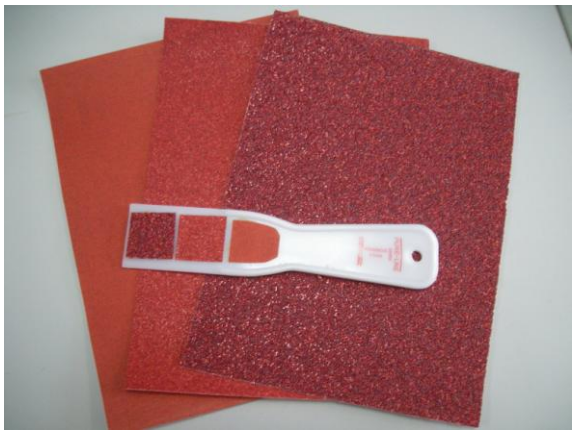
Grain Size Indicator – Teacher Notes

Grain size reference
In the field or laboratory, it can be difficult for students to come to a decision about the grain size/sizes of soil or rocks. For general reference this tool makes decisions (at year 8 level) easier.
For more advanced classwork visit:
http://www4.uwm.edu/course/geosci697/sections/grainsize%20comp.jpg

Our cerebellum unconsciously compares information from different parts of our body to control balance and maintain general homoeostasis. In this case information from our left hand is compared with that from our right. Students might like to place one hand on the table and another on their cheek. Their brain will instantly tell them which is warmer, smoother and moister. No conscious decision making is required.

A board (or a plastic paint scraper) with three or more grades of sandpaper or garnet paper stuck on makes a simple reference tool. The reverse side of paper states the grade or coarseness of the grains of quartz. (40 for coarse, 120 for medium and 240 for fine) I prefer garnet paper as the red colour covers subsequent stains more easily.



Students feel the rock or soil specimen with one hand and rub the sandpaper portions with the other. Their cerebellum will tell them if the clasts are coarser or finer than their reference square.

Ideally, nests of sieves will reduce any soil specimen to its different size fractions but these can be expensive and cumbersome. Where soil specimens have many different sizes of grains, lightly moving the specimen in your dry hand or Petri dish, will separate them somewhat. The different portions can be size estimated by comparison to the grain size indicator.

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Acquiring different clast sized specimens.

Dry samples of potting mix, soil, builder's sand, beach sand, aquarium grit and river sand are good. Ideally these can be passed through soil sieves to separate them into different sized fractions.

If you do not have these sieves:

- Pass through a kitchen sieve to separate the coarse fraction and then pass the remainder through a tea strainer to separate medium and fine.
- Use a yandy/coolomon, laboratory tray or flat dish to separate the fractions. See notes on the yandy in the erosion section.
- Even a dustpan can be used to separate grain sizes as long as it is consistently moved only back and forth in one direction.

School canteens and Domestic Science area often use cardboard shaker boxes of herbs, spices and bicarbonate of soda. Filling the empties with soils of graded sizes makes useful dispensers for the "Graded Bedding" activity.