Soil Colours – Teacher Notes

Note: Moisture in soils affects their colour. For this activity all soils should be left to dry.

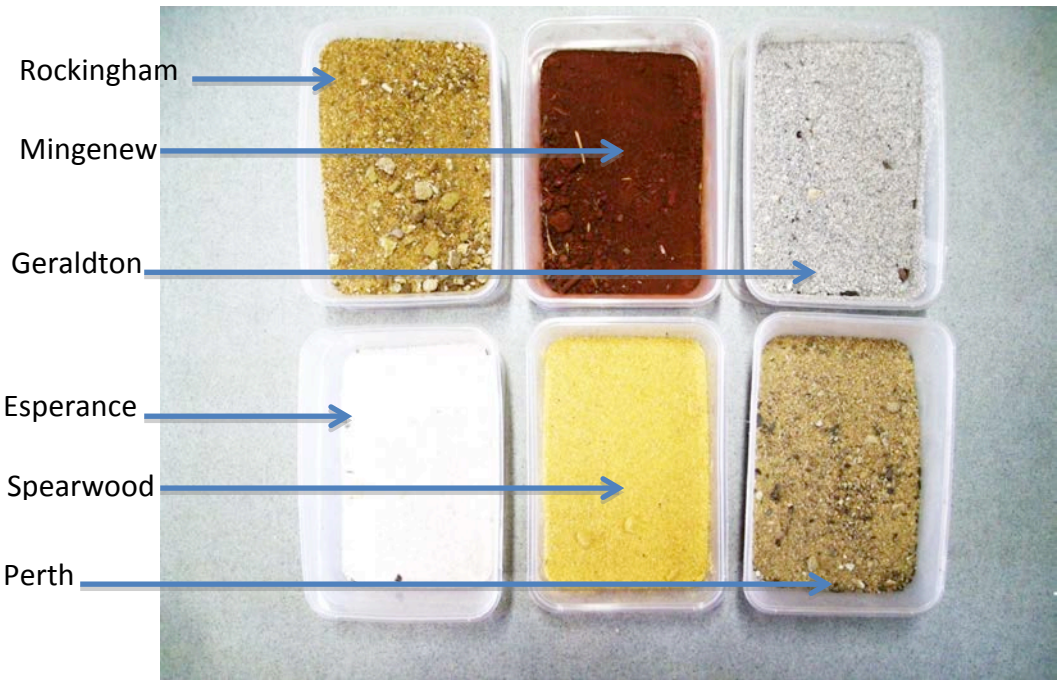
There are many different soils across Western Australia. Their characteristics depend on:

- The differing ***chemical composition of rocks*** from which their mineral fragments came.
  In the photograph below the bright yellow soil from **Spearwood** is from a fossil sand dune, where moving groundwater has leached out all the carbonates making it mostly silica with a little iron to give it colour.
  The white soil from **Esperance** near the coast has come from granites and gneisses. Water and wind have removed all the other minerals leaving pure silica sand.
  The soil from **Geraldton** contains many shell fragments giving it its whitish/grey colour.
  The buff coloured soils from **Perth and Rockingham** lie above and beside weathered limestone.
  The magnificent soil from **Mingenew** was formed from deeply weathered granite. The silica has been leached out leaving silts rich in aluminium and iron. These are the kind of soils farmers love.

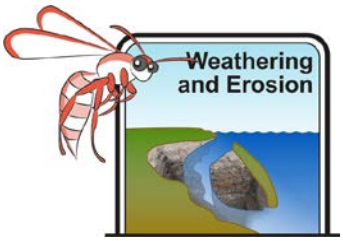
- Their ***history of erosion and deposition*** (what has been removed and what has been added).

- The ***climate*** when the rocks were originally weathered and under which the soils remain.

- The ***activities of the living things*** that are in them and around them.



These specimens above were selected because of their colour differences and are not necessarily typical of all soils in these regions.



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Materials per student

- Three different coloured soil specimens. (Specimens A, B and C). Sieved potting mix will produce a good fine dark soil. Builder's sand and creek bed soil can be mixed to make a pale soil. Ask the school's gardener or the teacher in charge of the sustainability garden for some good brown soil from the vegetable patch.
- Three pieces of transparent sticky tape about 7cm long.

Method

1. Enter the source location of the soil and describe its colour (e.g. source garden, colour dark brown). It is better to write first before sticking on the specimen.
2. Take a length of sticky tape and press it into each soil sample leaving the ends untouched.
3. Place the tape on the worksheet provided pressing down on the ends to hold it in place.
4. Repeat for the other samples.

NOTE: In scientific reports we usually refer to a colour chart like the one you see for selecting paint in hardware shops. This stops confusion because what one person might see as brown, another may describe as grey. This can be a particular problem with people who are "colour blind".

Observations

Specimen A

Description _____

Specimen B

Description _____

Specimen C

Description _____