



Rocks and Sand - Teacher Notes

Rocks are naturally broken down (or weathered) into much smaller fragments (often sand or silt), containing minerals. The nutrients found in rock mineral fragments are the basic food for all life on Earth. Polished or tumbled rocks are too smooth to crumble into sand or silt.



Gneiss
SW of WA

Limestone
Mid-west WA

Sandstone
Broome

Banded Iron Formation
Hamersley Ranges

The rocks above demonstrate that the colour (and chemistry) of the parent rock determines the colour of the sand or silt. But of course, we as scientists will not accept this idea without experimenting and testing it.



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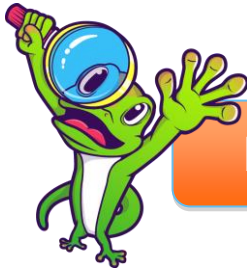
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Rocks become rounder and smaller.

Our "little rocks" were once part of a mountain range. Falling downhill or being moved by wind or water, they have been tumbled into our rounded small rocks. If the rock had been left it would have been banged against other rocks until it was eventually sand or silt. This may have been buried in the Earth and turned to rock again.

Since rocks can be very hard and take a long time to break down, two pieces of brick can be used as substitutes for rock. Limestone also works well.





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Materials per student group

- Newspaper to protect the desk and collect rock fragments.
- Two pieces of each rock type to rub together. Well-weathered rock is ideal as it breaks down easily. Reasonably small pieces of broken rock such as sandstone and limestone or old brick are easiest to find. **Limestone** rubble can be found at the beach or where limestone walls have been built or knocked down. Most schools have retaining walls around sandpits and garden beds made of limestone. **Sandstone** fragments can be found at some garden centers. **Brick** in Australia is an artificial rock made from baking mud at high temperature in kilns. Elsewhere in the world where hot molten volcanic rock has pushed its way through mudstone "cooking" it, it occurs naturally. Broken pieces of brick can be found on demolition sites. Garden centres can be good sources of other rocks.
- Safety glasses, goggles or face shield
- Optional - gloves to protect students' hands such as leather or thick fabric

Method

1. Cover desks with newspaper.
2. Demonstrate how to rub rocks together safely. One piece of rock is held on the desk and the other grated over its surface.
SAFETY NOTE: Safety glasses or other eye protection should be worn in case small pieces of rock flick off during rubbing.
3. Each student in the group rubs the rocks together for a count of ten, then passes them on.
4. Students create rock fragments on the paper and compare them with the parent rock.

