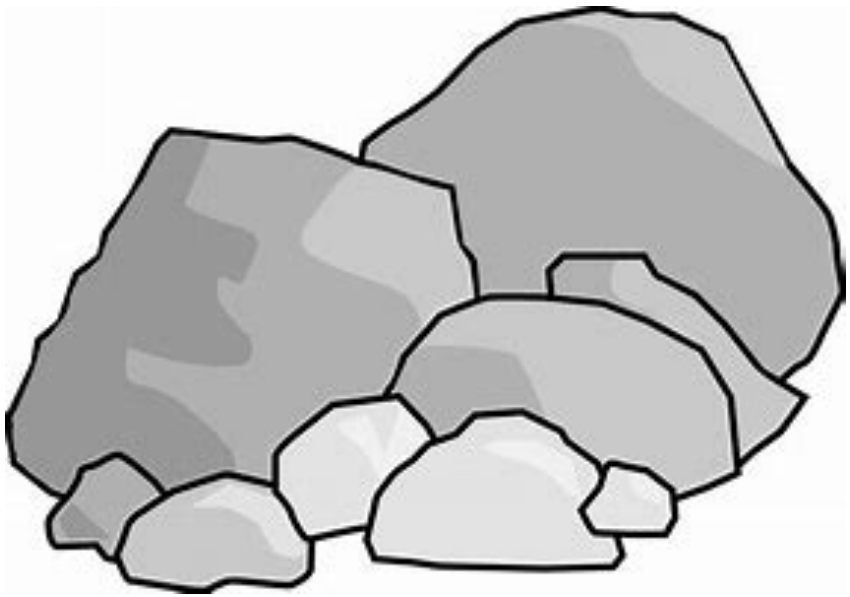
Rockin’ and Rollin’

Rock forms, break up, and soil!



The Earth is a big rock. It does many things:

- Earth supports. (stamping feet)
- We build on it. (patting floor)
- Things grow on it. (hands moving from floor up)

We can learn about rocks and soil.

There are three kinds of rocks.

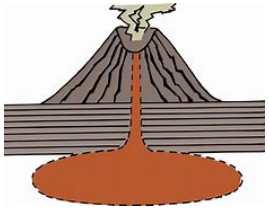
Igneous rocks come from very hot melted materials deep within the earth. The material cools and hardens. Sometimes it leaves a very smooth surface and sometimes it leaves a porous surface with airholes. Some rocks cool under the surface and some rocks cool over the surface.

Igneous rocks can be broken into fine pieces. These can be washed down and collect in layers under the surface of seas. Gradually heat and pressure form these layers into sedimentary rocks.

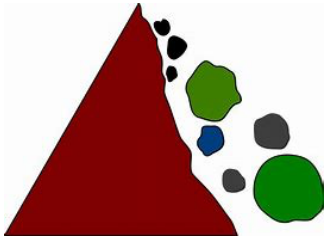
When sedimentary or igneous rocks are subjected to heat, pressure or hot fluids, they may change into metamorphic rocks.

You can be a rock:

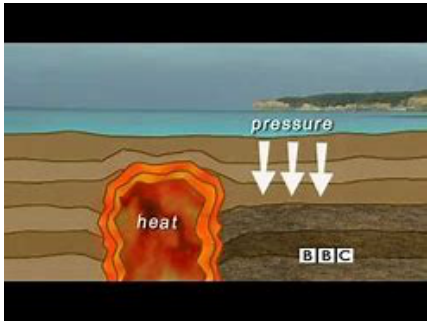
- Igneous (exploding up like a volcano and melting down and cooling)

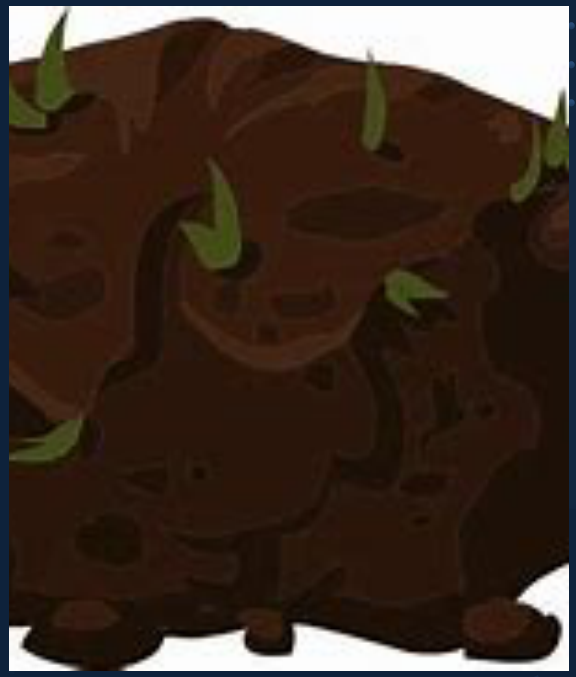


- Sedimentary (layering hands)



- Metamorphic (mixing with hands)



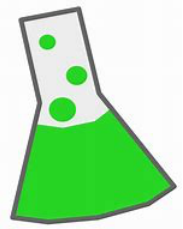


You can be finger rocks!

Some rocks come from seas (wave hands)
And some rocks come from heat (volcano up)
And some rocks become soil (tilling)
But every rock is neat! (clap).

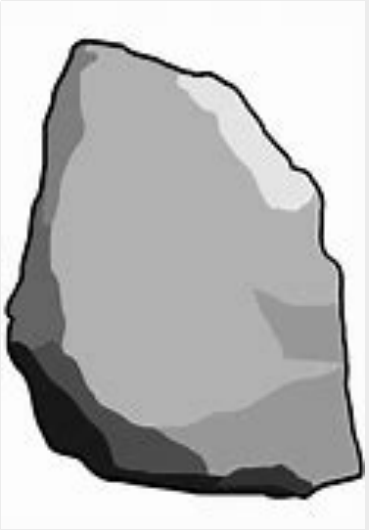
How do rocks break up? Different things can break up rocks; you can act out different rock breakers!

- Heat (fanning)
- Pressure (squeezing)
- Cold (shivering)
- Lighting (zigzag)
- Plant roots (growing down)
- Chemicals (bubbling)
- Water (pouring)
- Wind (blowing)



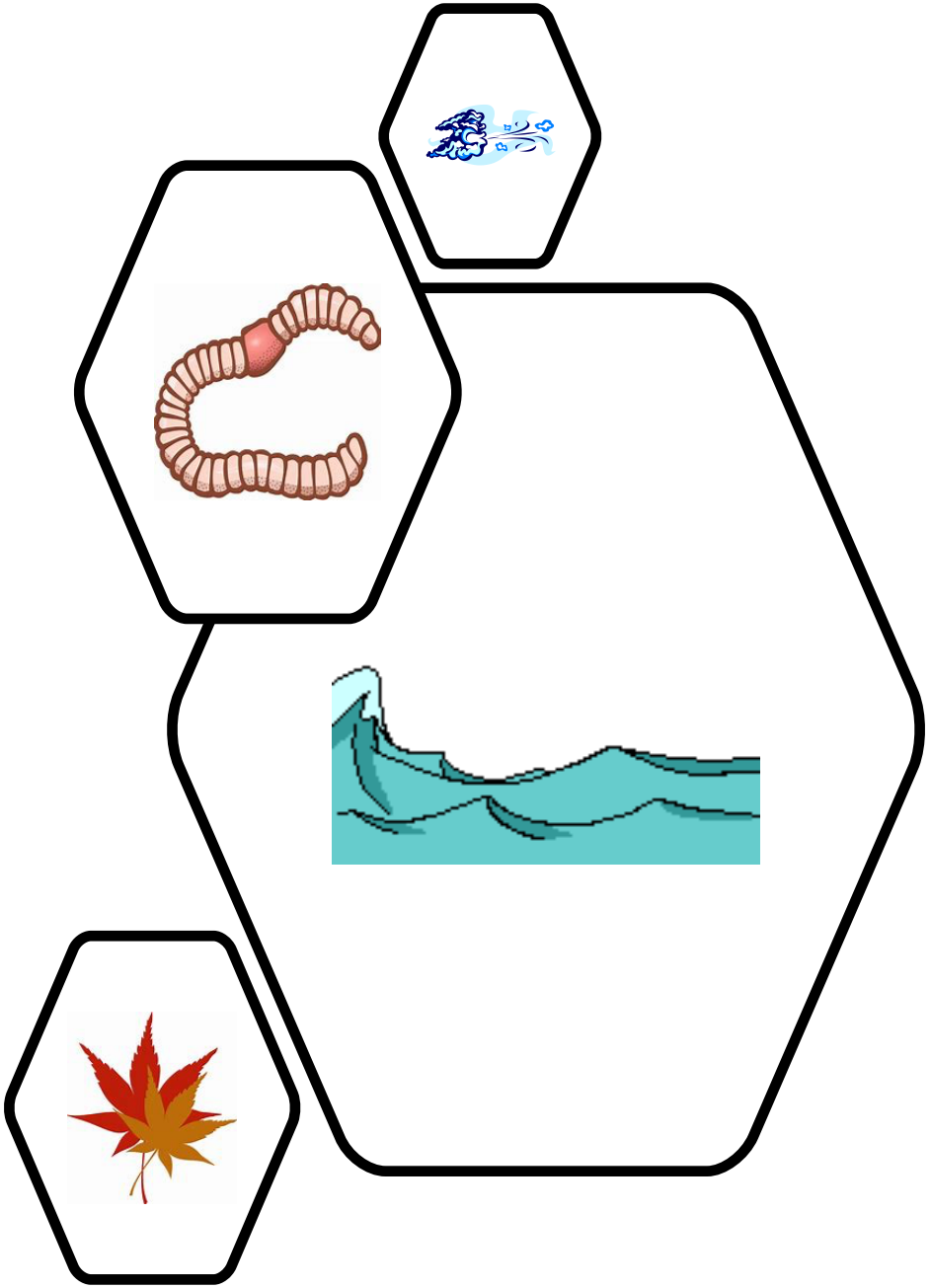
Rocks break into different size particles; you can be particles!

- Rock (hands 10” apart, feels like a nut or pumpkin seed)
- Sand (hands 3” apart, feels like brown or turbinado sugar)
- Silt (hands 1” apart, feels like white sugar)
- Clay (hands ¼” apart, feels like cocoa powder)



Soil is alive! It includes:

- Water (shake container)
- Nutrients=food (eat)
- Air (blow)
- Worms, bacteria, fungi, nematodes and other living things (wiggling fingers)



Soil is made up of--

Clay

Silt

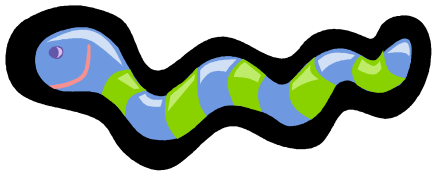
Sand

Humus

Air

Water

Living things



Soil Has Layers

Humus—This is the rich soil with lots of organic material.

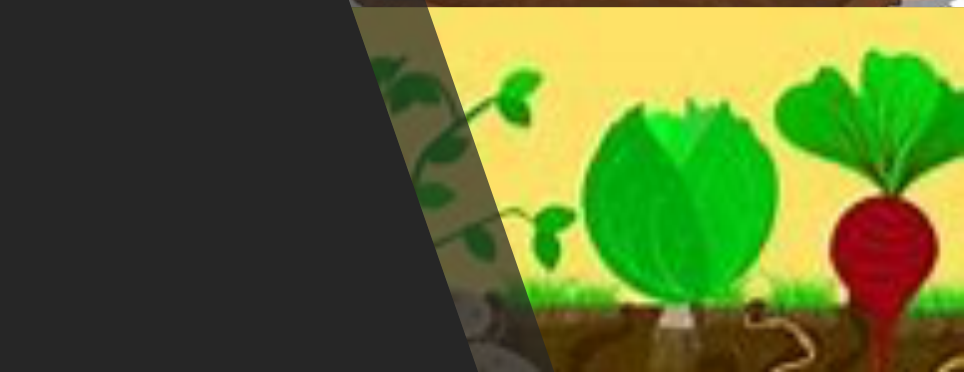
Topsoil—This is the layer with rock particles and plant roots, with organic material.

Subsoil—This is the layer of rock particles and minerals with little organic material.

Parent Material—This sits on is the bedrock and is derived from the bedrock broken into chunks.

You can sing the *Making Soil* song to *My Darling Clementine*

Making soil, breaking up rocks, (hands breaking motion)
Making soil now just so. (clap)
Now I add some air and water, (puff and pouring motion)
And some things to make things grow! (hands moving up from ground)



Rocks, Rocks, Rocks!

You can read a story!

Some rocks come from seas.

And some rocks come from heat.

And some rocks become soil.

But every rock is neat!

You can be a rock and soil hunter!

- Look at the soil by your home. How does it feel—wet, dry, sticky?

- What's in it?

- Are there leaves, twigs, worms, insects?

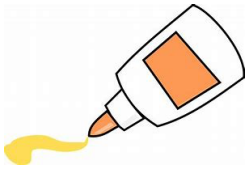
- Dig a little; is there rock under the soil layer?

How many ways can you be a rock artist!

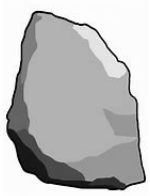
Think of different ways to use your rocks!

- Paint a rock.

- Make a ‘landscape’ by making a glue design on paper and sprinkling soil or sand over the glue and adding twigs and leaves.



- Roll a rock in paint and then roll it on a piece of paper.



Rock and Roll!

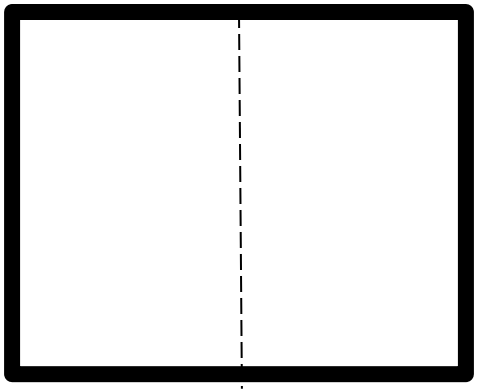
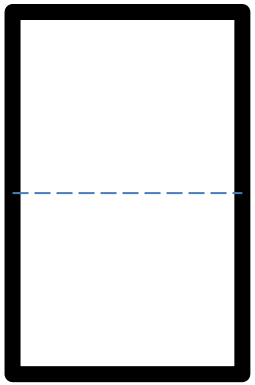
- Make a shaker with small pebbles for a rock band.

- Be a rock collector and find rocks around your home and arrange them in a box.

- Make a rock sculpture.

You can be a soil chef!

- First put down the bedrock-–a graham cracker in the bottom of the bowl.
- Then put some pumpkin seeds in the bottom of the cup to represent the rocky parent material.
- Now sprinkle brown and white sugar for coarse and fine sand, cinnamon and cocoa powder or powdered sugar for silt and clay, sunflower or sesame seeds for small rocks, for the subsoil.
- Add raisins and coconut shreds for organic matter and mycorrhizals, to make some topsoil.
- Crumble a cookie layer for humus.
- Sprinkle a little water and mix it up to add air—ready to eat!

You can make a mini-book!

- Fold the paper in half
- Then in half again.