TAKE & MAKE KIT
Soil Erosion

TIME: 45 min + time for growing

CONTAINS SMALL PIECES

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What's in this kit?

Soil erosion can have big impacts on land and agriculture. Follow along with this activity to learn more about what water runoff does to topsoil and how the makeup of soil can impact the amount of erosion that occurs.

You will learn:

- Soil erosion
- Agriculture

Let's Get Started!

Materials

4 plastic cups
1 plastic plate
1 bag of soil
1 bag of wheatgrass seeds
A handful of small rocks
A handful of twigs or sticks
Water

Tools

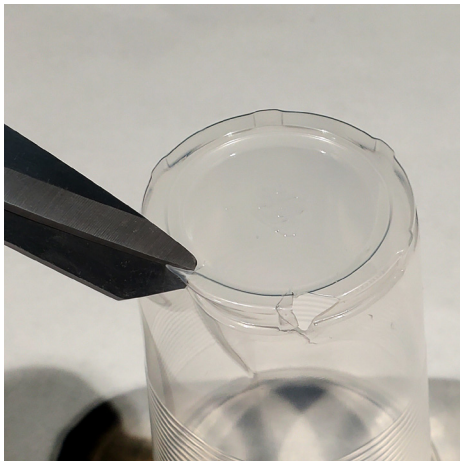
Scissors

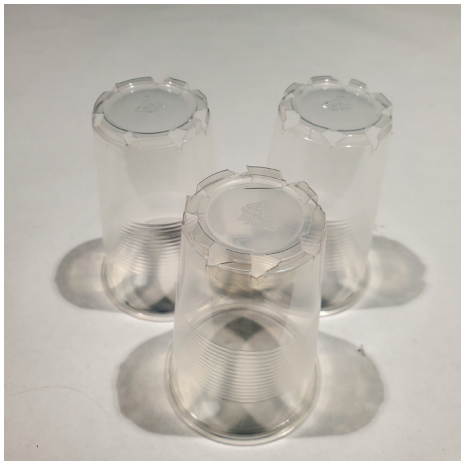
Step 1 - Organize your materials

You wont need the soil, seeds, or plate for the start of this project. Put them aside and grab 3 of your 4 cups and a pair of scissors.

Step 2 - Cut holes in the cups

Take your scissors and carefully cut holes along the bottom of 3 of the 4 cups. Leave the fourth cup without holes. You don't have to drill holes with the scissors. Try cutting 'V' shapes in the base as shown. The holes should be big enough to stick a pencil through them.





Vocabulary

Soil Erosion - Detachment and movement of topsoil as a result of change brought about by wind, running water, or other influences including human activity.

Soil - The top layer of loose organic and inorganic material covering most land. In agriculture, soil provides structural support and holds water and other nutrients for plants.

Agriculture - The science or practice of farming, including cultivation of the soil for growing crops and the rearing animals to provide food, wool, and other products.

Did You Know?

Soil has a layer called topsoil that is very important to the overall health of the land and ecosystem. It is a nutrient rich layer of dirt that holds life.

Topsoil is crucial for growing plants. As the word's population grows, the higher the demand is for food. Irresponsible use of land and farming can lead to soil erosion which can lead to less fertile land. This means that plant growth would be impacted and producing food could fall short.

Soil erosion can also impact water quality. When too much soil washes away it is carried into our waterways and rivers. This can be harmful to fish and wildlife.

Step 3 - Gather materials outdoors

Take a walk outside and gather a handful of rocks, some big and some small, and a handful of small twigs and leaves. You can use the bag this project came with to hold your materials.

Predictions

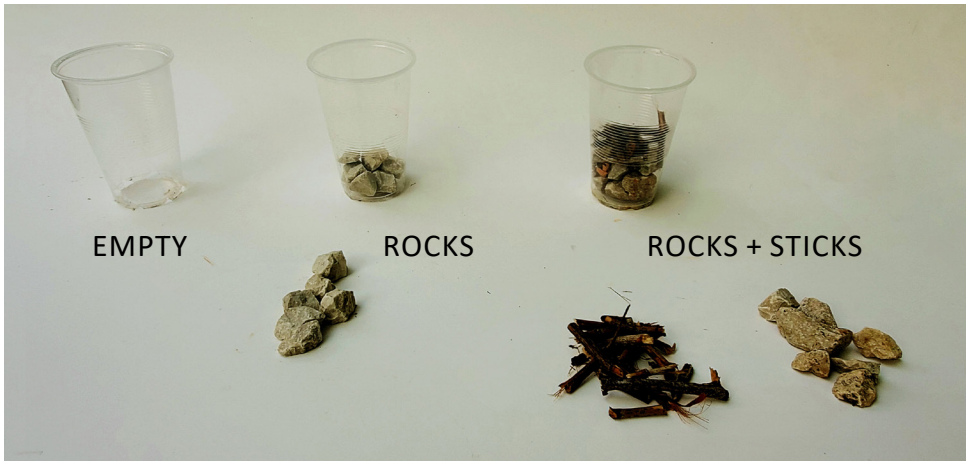
Will all 3 cups of soil produce equal amounts of wheatgrass?

Step 4 - Place your rocks

Separate your smaller rocks into 2 even piles. Place these rocks into 2 of the 3 cups with holes.

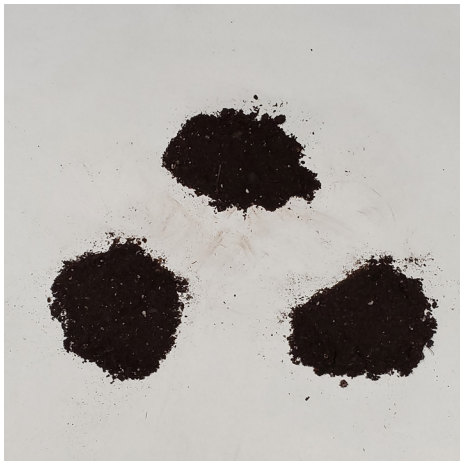
Step 5 - Place your sticks

Place your sticks into one of the cups with rocks in it. You should now have 3 cups, one has rocks, one has rocks and sticks in it, and one has nothing in it.



Step 6 - Add soil and seeds!

Now separate your bag of soil into 3 even parts. Put one pile into each of the cups with drainage holes. Now separate your seeds into 3 even piles.



Sprinkle each of the piles on top of your soil. Gently move the soil around to lightly cover the seeds.

Step 7 - Set up water run off

Grab the larger rocks and put it in the remaining cup without any holes. Put your cup with the soil, twigs and rocks into this cup. This lower cup will collect the water that runs off.

Put your remaining two cups on the plate included in the kit.

Step 8 - Water

You can now water your seeds. Pour water onto all three cups until noticeably damp. Make observations about how much soil escapes from each cup. Store your cups in a place that gets direct sunlight and water them as the soil gets dry.

Do you notice any differences in how much wheatgrass is growing in each cup? They each started with the same amount of soil and seeds but the overall makeup of each cup affects the outcomes. If too much soil escapes, the plants won't have stability for their roots to grow. Imagine what this is like on a bigger scale like a farm where our food comes from. If the land looses too much nutrient rich soil we could also loose how much produce is grown.

Challenge!

Using materials you find outside, can you make your own mix of natural materials to best prevent soil erosion? Use different materials from sticks, stones, plant matter, even sand to make what you think will hold the soil, and prevent it from eroding as you water it.

Go Beyond

Take this soil erosion project further. Use what you have learned about soil erosion and water drainage to make your own planter. There's no need to buy new planters. Jump into your recycling bin and start cutting materials to hold soil. Cut holes to allow for water drainage and don't forget to have something that the water drains into!

Measure how much water you put in and how much water comes out. What can you do to keep more soil inside your planter and less into your runoff water?

HANG OUT, MESS AROUND, GEEK OUT.

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