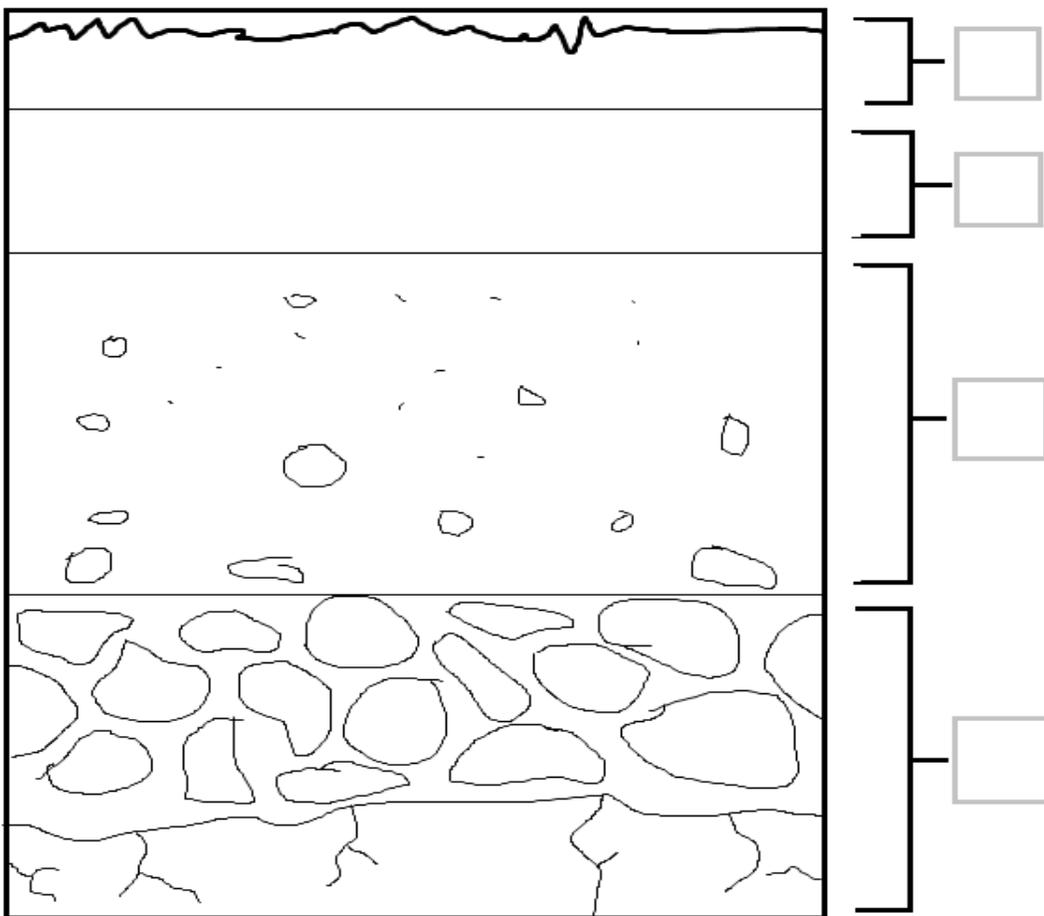


Soil layers and water percolation

Introduction and Activity:

Dirt is all around us. We can build with it, and we plant our food in it. When we plant things in it, we need to add water to help it grow. In this activity, we will find the best type of dirt to water our plants. Does the water go through the dirt too fast before the plant can take it? Does it sit there for a long time to give the plant time to take it? These questions will be answered as we go through our activity.

Next to each soil horizon put the letter that matches from the description below. Color the soil horizons.



O – This is the top layer, the “organic” layer which is made up of dead plant matter for the most part.

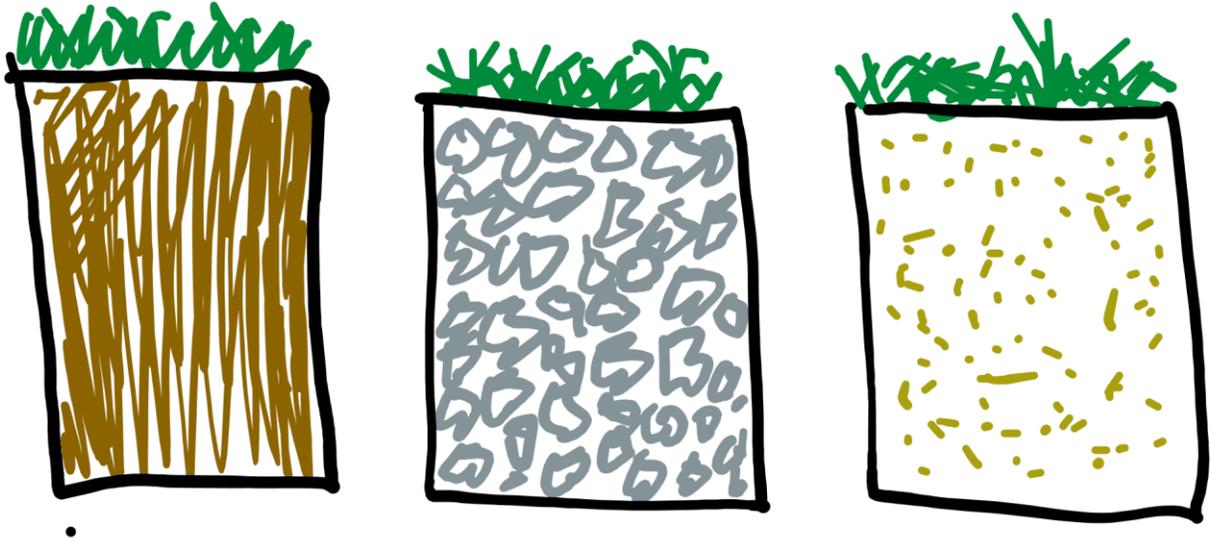
A – This is what we call the “topsoil”. It too has lots of organic matter mixed in and is usually darkly colored.

B – Subsoil layer. There is not much organic stuff in here. Sometimes the transition between topsoil and subsoil is very sharp and defined and sometimes they fade into one another.

C – This layer usually has lots of large rocks mixed in with soil deep underground.

Plan and Carry Out

We have a couple boxes filled with different kinds of dirt, in each one, we will add the same amount of water to it, and observe what happens to the dirt through the clear sides of the box to find the best kind of dirt for our demonstration.



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Potting Soil

Gravel

Sand

Hypotheses Questions:

Rank the soils from most absorbent to the least absorbent:

- Potting Soil
- Sand
- Gravel
- Soil Mix

What kind of soil do you think will hold the water for the plants the longest?

Soil Type:	Observations:
Potting Soil	
Sand	
Gravel	
Random Soil mixture	

After watching the video, fill in the following:

Which soil was the best for the plants?

What kind of soil would be best for your lawn?

What kind of soil is best for flowers and bushes?

What kind of soil do you think you have at your house?

What combination of soil do you think would be the best?

New Hypothesis: Now that we have done the experiment, make a new hypothesis about what soils

- Potting Soil
- Sand
- Gravel
- Soil Mix

Explain

What makes some soils better than others for planting? Why is holding water important? Would you want your soil to hold water that you were going to build a house on?

Information and background for the educator:

We still intend to still work with 6th Graders, there is a SEED standard that goes along with our proposal that reads evaluation design solutions for preserving ecosystems resources and biodiversity of how well the solutions maintain stability within the ecosystem. Our emphasize will be in the design aspect to aid and effort to preserve ecosystem resources in our case being water. In our case being water, many Utah homes currently utilize a grass lawn as their primary form of landscaping. Traditionally used lawns are watered by a hose or a traditional pop-up sprinkler. By definition Utah is a desert which will mean water is scarce resource. Grass lawns are a very easy way to waste that resource. Landscaping has come a long way and there are new forms of beautifying one's yard. Our deliverable will have several scale models of different landscaping. Each of which will have their own plant base and soil conditions with different forms of irrigating them.

We will have a worksheet to explain the Scientific method. By this we can have them go off our video to form an observation after having to create their own hypothesis. From the models we present them can lead them towards a conclusion of which soil combined with irrigation is the best for landscaping. Our project can go outside of what they are learning, and they can apply it towards their own lives that can influence their decision on watering their lawns.

The model we will use is an acrylic model that allows the student and the camera to see how the water will react underneath the plants. Just like the model is displaying below we can see the seepage of the water through the soil.

The figures we are using are drawn by our group members for the purpose to display what we're trying to build.