

SOIL SNOW GLOBE

ROYAL CITY SCIENCE
#RCOAC21  
EMAIL YOUR PHOTOS TO:
oac.assistant@uoguelph.ca

Have you ever thought about what is under the grass that you walk on? We know that a lot of our fruits and vegetables start in the soil, but did you know there are different types of soil? Some soils are really great for growing fruits and vegetables on, and some aren't so great. One of the properties that determines that is soil texture. Today we are going to learn about the different components of soil and try to get a look at them at home! We are always told not to play with dirt because it is messy and you don't know what is in it, but today we are going to get our hands dirty!

After our activity today you will have a brand-new decoration for your room and learn a little more about what is under our feet!

This activity is best started in the morning to give the soil time to settle by the debrief in the afternoon.

Materials

- 1 glass jar or clear plastic bottle with lid (~500ml volume)
- Soil
- Water
- Observation sheet, pen or pencil
- Funnel (optional)
- Small shovel or spoon (optional)

Instructions

1. Go for a walk! Bring your jar, shovel and observation sheet with you. Find an interesting landscape and record your location.
2. Using the shovel, dig a small hole about 2 cm deep. Fill your jar about $\frac{1}{4}$ full with soil. Set the jar aside.
3. Touch the soil with your hands! Fill in the field observation table on your worksheet.
4. Return home and fill your jar to the top with water. A funnel might help with this. Leave about 2cm of space at the top. Shake the jar for 60 seconds. Put it down on a flat surface and make your first observation. Take a picture or draw a diagram of what it looks like.
5. Over the course of the day, keep an eye on your snow globe, and check back about once an hour to make observations.
6. After a few hours you will start to see clear and defined layers forming in the snow globe.
7. Keep the snow globe still for up to 24 hours, or until the water is clear again. Keep shaking it and watching it separate or empty the jar outside, rinse the container and recycle it. You can also keep it on your desk and shake it again and again and watch it separate out.



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Are you looking for more of a challenge?

Try taking soil from multiple different landscapes, such as the top and bottom of a hill, and see what the difference is. Try using a different liquid, such as a cooking oil, rather than water and see what happens!

Share your Globe!

Take pictures of your process and soil snow globe creation. Email your pictures to oac.assistant@uoguelph.ca so that we can make a collage of everyone's soil snow globes!

Additional Resources

- [SOILS AT GUELPH](#) website

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WORKSHEET

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Bring this worksheet with you on your walk! If you are unable to print it off, write down the “on your walk” questions on a separate piece of paper. Bring the below materials on your walk as well:

1. Small shovel
2. Measuring cup
3. Jar or bottle and lid
4. Funnel
5. This worksheet and a pen!

On Your Walk

Describe the Landscape:

Time of Collection:

What does your soil... (use words and pictures!)

Look like? Colours, particles, etc.	Feel like?	Smell like?



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At Home

Time water was added:

Time shaking was completed:

What does your soil snow globe look like?

Time	Using words	Draw a picture!
0 minutes		
1 hour		
2 hours		



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3 hours		
4 hours		
5 hours		



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Post-Experiment Questions

Try to identify the different layers in your soil snow globe. Which one do you think is sand, silt, clay or organic matter? Are all of the layers present in your soil?

Do you think different landscapes would have different soil? What do you think could be different?

Match the words: organic matter, sand, silt and clay with the corresponding letters below. Give a one sentence explanation about why you matched the layer and the name.

