

ACTIVITY ONE: STEP-BY-STEP FLOTATION INSTRUCTIONS FOR STUDENTS

1. Measure a one-liter soil sample from your assigned feature and pour it into your empty bucket. Write down your soil sample number as assigned by your teacher.



2. Fill the bucket with water, leaving a few inches of space at the top, so you do not spill. Test the weight of your bucket as you fill it to make sure you can easily lift it when you have to pour water out. Go to your designated waste water bucket or area.
3. Carefully swirl your arm in the bucket and use your hand to break up the soil at the bottom. You may have to squish the soil through your fingers. This should cause charred plant remains or possibly other materials in your soil to float toward the top. What you collect from this process is called your **light fraction**.
4. One partner will slowly and carefully pour water from the bucket into the sieve that the other partner is holding over the wastewater area or receptacle. Do not pour so fast that the heavy soil at the bottom comes out! You should see materials collecting in the sieve. You might see seeds, but what else do you notice? Take breaks as needed from pouring water to empty the materials from the sieve onto your drying tray. Continuing, pour as much water as possible from the bucket without moving the heavy soil from the bottom.



5. Leaving your soil sample dirt at the bottom, fill your bucket with water again and repeat the process 1-2 more times to recover as many materials for your light fraction as possible. Partners can switch roles at this point. If you're using a larger bucket or tote to catch your wastewater, make sure to empty it out in an approved area before it gets too heavy to lift!
6. Make sure you **add a label to your drying tray** so you do not mix up data! Your label should include your names, data, feature number, soil sample number, and areas for light fraction and heavy fraction.
7. After you've floated your soil sample 2-3 times to retrieve your light fraction, it's time to sift the soil left at the bottom of your bucket through a plastic kitchen colander. Go to your assigned screening area. What you collect from this process is your **heavy fraction**.
8. Mess alert! Your soil will be wet, so place your colander over a water bucket. Using your hands or a serving spoon, take scoops of soil from the bottom of your bucket and place into the colander.
9. Push the soil through the colander with your hands or serving spoon or pour water over it to free the dirt from materials in the soil. Be careful to use just enough pressure so that items in the sample don't get damaged! What stays inside your colander is your heavy fraction. Repeat steps 7 and 8 as needed to complete your soil sample. What do you notice about the heavy fraction?



10. Put your heavy fraction on your drying tray. You might see similar materials in your heavy and light fraction samples. That's okay! Sometimes the flotation process doesn't catch all of the tiny objects, or sometimes the materials simply don't float.