

Discover Plankton Lendable Kit Instructions

Congratulations! You are about to dive into the microscopic world of plankton! To ensure that you have a safe and fun sampling experience, please watch the **instructional video** found at:

<https://tinyurl.com/discoverplankton>. Or, log onto www.pacshell.org, click on the  icon at the bottom of the page, and select **Discover Plankton Kit Instructions**.

This kit includes the following materials. Please make sure all items are back in the bucket when returned.



1. Life preserver
2. Plankton net
3. Bucket
4. Backpack
5. Microscope
6. Plug-in adaptor, spare batteries
7. Instructions, Plankton ID sheets, Sampling Locations Map, Microscope User Manual
8. Glass jars (2)
9. Glass slides, cover slips, pipettes (2)
10. NOAA phytoplankton playing cards
11. Sketch book, Rite-in-Rain journal, pencils
12. Hydrometer
13. Thermometer
14. Secchi disk

Personal Safety & Equipment

Take caution when sampling near water. Please sample with a responsible adult and wear a life preserver (youth or adult size provided), if appropriate.

Always keep the backpack and its contents completely **DRY** (microscope, etc.). Rinse sampling equipment with fresh water and **DRY COMPLETELY** before returning (plankton net, etc.).

Collecting Your Data & Plankton

- 1) **Select your location.** Plankton are found in freshwater and saltwater. You can sample from a boat, a dock, or shore. Refer to the Sampling Locations Map for local suggestions.
- 2) **Collect water quality data.** In the yellow Rite-in-the Rain Scientific Journal, record your Name, Date, Time, Location, Weather, Temperature and Salinity (saltiness).

- **Water temperature & salinity** – Submerge the thermometer into the water, allow it to fill and wait 20 seconds. Record the temperature in your journal. Slowly lower the hydrometer into the water until 1-inch remains above the surface. Allow to fill. Record the salinity in parts per thousand (ppt). Is the water fresh, brackish or seawater?

Fresh (0-0.5ppt) Brackish (0.5-30ppt) Seawater (30-35ppt)

- **Secchi disk** – The secchi disk measures turbidity, or water clarity. The disk can only be used when sampling from a boat or dock. To use, slowly lower the disk into the water. Record the depth at which the disk completely disappears. Each orange line indicates 1-meter. Each black line indicates ½ -meter. Is there a lot of plankton in the water?

Dense (< 2 meters) Moderate (2-4 meters) Sparse (> 4 meters)

- 3) **Collect your plankton sample.** You will need the plankton net and a glass jar. Before you start, make sure the pinch clamp on the latex tube is tightly closed.

- **From a dock or boat** – Lower the net into the water. Avoid hitting the bottom or scraping the net on the side of the dock/boat. Slowly pull the net to the surface.
- **From shore** – Wade into the water up to your knees. Holding tightly to the end of the rope (*don't let go!*), throw the net out into the water. Pull the net slowly towards you being careful not to scrape the net along the bottom. A second method is to collect water in a bucket (1/2-full) and pour it into the net. This requires 2 people - 1 to hold the net



and 1 to pour. You will need to pour several buckets of water into the net to get a concentrated sample.

- **From a slow-moving creek** – Wade into the creek. *Do not sample in fast flowing water!* Holding the net by the metal ring or rope, allow water to flow through the net for about 15 seconds. Do not drag net along the bottom.

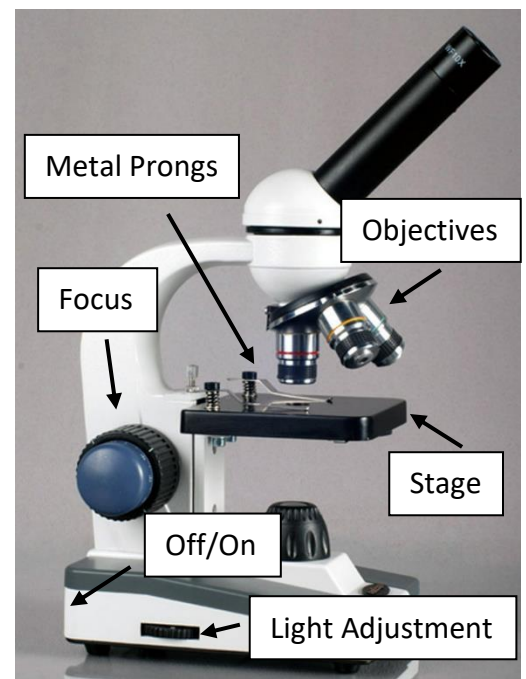
After you pull up the net, hold it upright and allow the water to drain out. Place jar beneath the latex tube, open the pinch clamp, and empty the plankton sample into your jar. Remember to rinse and dry the net after each use – a sink, hose, or shower works fine!



Collecting a plankton sample from a dock (left), slow-moving creek (center) and shore using a bucket (right).

Viewing Your Plankton

- 1) **Settle your plankton sample.** Set your plankton jar on a flat surface for 5+ minutes to allow the plankton to naturally settle to the bottom of the jar.
- 2) **Prepare your glass slide.** Place a glass slide on a flat surface. Using a plastic pipette, “suck up” the concentrated plankton from the bottom of the jar. Place 3 drops onto your slide and gently cover with a glass cover slip.
- 3) **View your plankton.** Set the microscope on a flat, dry surface. Turn on the light switch (located on the back). If indoors, you may use the adapter to plug into an outlet. Adjust light brightness with the dial on the lower side. Place your glass slide onto the stage *beneath* the 2 metal prongs. Choose your magnification by selecting the 4X red objective (40X magnification) or 10X yellow objective



(100X magnification). While looking through the eye piece, adjust the focus using the large knobs on the sides. Refer to the 1-page Microscope User Manual for more information.

- 4) **Sketch your plankton.** Draw your plankton in the Sketch Book. Can you identify the names of your plankton using the Marine or Freshwater Identification sheets?
- 5) **Clean up!** When you are finished, carefully rinse and dry your glass slides, cover slips, pipettes and jars. You may set them on a towel to air dry. Glass cover slips break easily! If this happens, no worries! Carefully place them in the garbage. Return all materials to the backpack. Plankton samples should be returned to the same water body or poured down the sink. Samples should last 1-2 days in the refrigerator.

Remember...all equipment must be clean and dry before returning.

Thank you!!

Get Involved

PSI monitors plankton weekly at Port Plaza (Budd Inlet) as part of SoundToxins, a phytoplankton monitoring program. We invite you to join us year-round. Learn more by clicking on the Pink *Protoperidinium* at www.pacshell.org.

Are you curious how PSI monitors for SoundToxins? Click on PSI's YouTube icon found at the bottom of www.pacshell.org. Select the *SoundToxins 2-minute Sampling Series* video.



Learn More

SoundToxins Phytoplankton Monitoring Program:
www.soundtoxins.org

Washington State Toxic Algae – Freshwater Algae Bloom Monitoring Program: www.nwtoxicalgae.org

Contact Us

Contact PSI anytime with your questions or comments. You're welcome to complete the enclosed Feedback Card as well. We'd love to hear from you!



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