



Creek Freaks Sample Schedules

All data forms, instructions, and reproducible worksheets are available online on the Creek Freaks website www.creekfreaks.net. Most are located in the “Library” www.creekfreaks.net/library. Videos to train educators and staff are available for some activities and are located at www.creekfreaks.net/training. These activities can be woven through the typical camp week, with other camp activities between. These also work well as a stand-alone afterschool program.



Biological Water Testing Theme: 2-3 hours

What is a watershed? – *Time: <5 minutes.* Begin with an introduction to the word watershed. Have students cup their hands together and discuss where a drop of rain would go if it landed on their fingertips. Explain that everyone lives in a watershed. ****This can be done in a group – have students create a larger watershed with their cupped hands working together, trying to get a flow of water to a specific point. This group amendment will add 20-30 minutes to the activity****

Watershed address- *Time: 10-30 minutes.* Communicates a sense of place within a greater watershed. Have youth construct their watershed address using the closest stream or waterbody and following that to the ocean. For example: “I live in the Muddy Branch, Potomac River, Chesapeake Bay, Atlantic Ocean watershed” Youth can use maps for this, or look up interactive google maps on the computer, allowing for greater accuracy. Can take from 10-30 minutes depending on how in depth the instructor gets. Doing it as a group for where program is located would make it shorter, having students do it individually would make it longer. Good indoor or rainy day activity

Model Watershed– *(Addendum pg.20 & How-To instructions) Time: 1-2 hours.* Using a homemade model watershed, this activity highlights pollution sources within a watershed and pollution prevention. Good introduction to orient youth to what pollution is, and why they should care. Have them brainstorm ideas how they could reduce pollution in their own lives. ***Have students design their own watershed models, using the instructions in the How-To*



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*Instructions in the Addendum. *** This can be done indoors on a rainy day, or outdoors utilizing natural materials.*

Critter Cubes – *(Use templates located in binder and data form from Addendum pg.9-10) Time: 15-30 minutes* Think Yahtzee when playing this game! Pre-make several sets of critter cubes and have students roll the cubes and practice identifying macroinvertebrates, using identification keys, and calculating water quality score. This is a great indoor or rainy day activity.



Biological Stream Monitoring – *(Instructions and data forms in binder) Time: 45-60 minutes* Take students to stream to perform biological stream monitoring by collecting and identifying macroinvertebrates. Use Creek Freaks data forms to record and calculate the water quality score. Explain what may have caused a low (poor) score or why it would be important to protect a stream with a high (excellent) score. Don't forget to upload your data to www.creekfreaks.net ***Keep in mind travel time to the stream. If it is a short walk or a bus ride might make the difference between this being an afternoon activity to a full day event***



Unstructured time: “Exploration” Have youth explore the riparian zone. Note differences between upland area and streamside area. Flip over rocks, get dirty etc. This is important to foster a love of the environment.

Macroinvertebrate Scavenger Hunt: *Time: 30-40 minutes.* Have students work in teams to collect as many types of macroinvertebrates as possible, as a competition.

Trash Pick Up Competition: *Time: 20 min-1 hour.* Have students work together to collect as much trash from the stream or riparian zone as possible. This will encourage friendly competition as well as stewardship in the riparian zone. Trash can then be cleaned and used in art projects (such as weathered glass in a mosaic, or recycled material sculptures).



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Chemical Water Testing Theme: 2-3 hours

Can you see pollution? – (*Addendum pg. 15-18*) *Time: 15-30 minutes.* This discussion activity prepares students to think critically about water quality, and what it means for water to be polluted or not polluted. Asking the “Would you drink this?” question leads to good (and sometimes silly!) discussion. Watch a demonstration at www.creekfreaks.net/training and click Can you See Pollution at the bottom of the page. This is another great activity for indoors or a rainy day, and can be done with many variations.



Filter Plants – (*Holding onto the Green Zone pg. 37, Addendum pg. 3-4*) *Time 15-20 minutes.* This activity requires pre-set up at least 4hrs, ideally overnight to soak celery. Remember dyeing carnations with food coloring in the water for the science fair? This time we use celery! This activity demonstrates how plants are able to filter out pollutants such as nutrients from the water. Be sure to visit the Addendum pages for help facilitating discussion questions. Watch a demonstration at www.creekfreaks.net/training and click Filter Plants at the bottom of the page.



Chemical Stream monitoring – (*Instructions and data forms in binder*) *Time: 30-45 minutes* Students will take chemical water samples from a waterbody and record their results on Creek Freaks data forms. This is an option for programs who don't have flowing water on the property, but may have lake or pond. Be sure to discuss the parameters that you are testing for with youth and why you are testing for them, tie in some of the pollutants students heard about in the Model Watershed activity. Creek Freaks chemical monitoring instructions should provide leaders with sufficient background knowledge on the parameters, and data forms provide ideal ranges that each should fall into. Upload the data on www.creekfreaks.net to generate a water quality score.



Let it Rain – (*Addendum pg. 19*) The Environmental Education take on freeze tag, with a twist! This running game gets kids moving and learning at the same time. Great to use for time filler between activities, or to



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wrap up the lesson. Also a great activity to use for restless campers and athletic campers that need to run to release energy.

Unstructured time (if possible): “Exploration” Have youth explore the riparian zone. Brainstorm areas near the stream that might be contributing pollution. Flip over rocks, get dirty etc.

Physical Stream Monitoring Theme: 2-3 hours

Erosion in the zone - (*Holding onto the Green Zone pg. 40*) *Time: 15-30 minutes (will require pre-setup)* This activity demonstrates to students the importance of plant roots and streamside vegetation for keeping soil in place. We’ve made some adaptations to the activity that make it easier to run so be sure to watch a demonstration at www.creekfreaks.net/training and click Erosion in the Zone at the bottom of the page.



Putting on the brakes – (*Holding onto the Green Zone pg. 21, Addendum pg. 2*) *Time: 30-45 minutes.* Participants create their own creek channels in plastic boxes or shoeboxes using materials from outdoors (or indoors) Staff can run a contest to see who can slow down their marble (representing water) the most, without it stopping completely. We’ve made some helpful modifications regarding materials and outdoor adaptations to this activity so be sure to watch a demonstration at www.creekfreaks.net/training and click Putting on the Brakes at the bottom of the page.



****Suggestion-introduce this activity by using a long rope laid out in a straight line on the ground. Use a stopwatch to time the group as they walk (heel-toe) in a line from one end to the other. Then make the rope curvy, and repeat. It will take the students longer to walk the curvy path. They can use this concept as they build their stream in a box, and attempt to slow their marble down. Additional 10 minutes****



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Soil Texture Test- (*Holding onto the Green Zone pg.32-33*) Time: 10-15 minutes. Have students gather soil from different areas of the riparian zone using shovels, soil augers, or their hands. Observe the texture differences and similarities between the soil types by asking the questions found on the worksheet on pg. 24 of the LEADER GUIDE. You can also observe color differences, moisture differences, compaction etc. FYI- clay like soil tends to manifest itself as body paint/war paint- be prepared to have dirty kids! Great activity to do outdoors and near a hose!

Soil Percolation Test - (*Holding onto the Green Zone pg. 33-34, Addendum pg. 3*) Time: 15-20 minutes. Collect local soil and use 3 control soil types, sand, clay (clay kitty litter ground in a blender— yes we know it's weird but it works), and potting soil to determine what your local soil is closest to. Watch a demonstration at www.creekfreaks.net/training and click Soil Percolation Test at the bottom of the page.



Physical Stream Monitoring- (*Instructions and data forms in binder*) Time: 20-30 minutes Students will make observations about the stream and record their results on Creek Freaks data forms. Creek Freaks physical monitoring instructions should provide leaders with sufficient background knowledge. Some math is involved here, and could be incorporated into math or STEM focused programs. Upload the data on www.creekfreaks.net!



Rainy Day or Program Extensions!

Make your own macroinvertebrate - Craft activity- use toilet paper rolls, googly eyes, pipe cleaners, straws, Q-tips, cotton balls, feathers, colored paper or other craft supplies to create your own macroinvertebrate. Encourage students to give their macro the adaptations it needs to eat, breathe, find (or make) shelter, and hide or escape from predators. Instructions can be found on www.creekfreaks.net/library in the “How-To” section near the bottom.

