Edible Salmon Habitat Activity

Objectives

- Students will be able to create an edible model of a stream with the vegetation, animals, physical qualities, and water quality parameters that are necessary for salmon survival.

Materials

- Graham Crackers/Cookie Bars/Brownies for base (Ground)
- Blue Icing, squeeze tubes (stream)
- Green Icing, squeeze tubes (land)
- Brown Icing, squeeze tubes (dirt) (optional)
- Swedish Fish or Gold Fish Crackers (salmon)
- Gummy bears (salmon predators)
- Gummy sharks (salmon predators, optional if you already have bears)
- Gummy worms or sour gummy worms (food for salmon)
- Pretzels (logs)
- Candy pebbles (rocks) (Winco has these in the bulk foods section)
- Pink coated chocolate balls (salmon eggs)
- Gumdrops (trees/shrubs)
- Gummy rootbeer bottles (these can be had to find)
- Plates
- Napkins
- Popsicle sticks or plastic knives to spread icing

Introduction (5 minutes)

- This lesson will help students learn about freshwater salmon habitat. It is a good transition between classroom activities to field activities. Ask the students: what do you know about salmon? What do you know about streams?

Activity (20 minutes)

- Give each student a plate with a graham cracker on it and their spreading utensil.
- Pass out each component of the “habitat” one at a time as you discuss how it relates to what salmon need to survive. If you give each student a cup with all of their ingredients off the bat it is an uphill battle to get them to pay attention 😊 For the gummy components, each kid only needs one of each (the graham crackers get much too crowded with multiples of anything other than the pretzels and rocks as you can see from the photos below from some overachieving habitat builders 😊).
- Briefly discuss the parameters that are necessary for salmon survival. After each topic, allow the students to add that parameter to their plate. Make sure students understand the role each parameter plays in supporting or inhibiting salmon survival.
- Parameters to cover:
    - **Frosting**: First, where do salmon live? Water! So we need to build a stream flowing through a forest. Talk about stream structure (e.g. meandering better for salmon because it slows the velocity of the water and channelized has quicker velocity and less gravel bars and diverse habitat salmon need for resting, looking for food, etc.)

- **Chocolate rocks**: Where do salmon spawn? In the dirt or in small rocks? Rocks! We call it gravel. It needs to be just the right size so it's not too big for the female salmon to excavate with her tail, but it also can't be too small or it will crush and smother the eggs once they are buried in it to protect them. We might want to have a mix of pools and riffles if we're able to show that. Who remembers what a pool and a riffle is? Pools are the slow moving, deeper sections of water and riffles are the faster, shallower sections of water (sometimes produce whitewater conditions in deeper rivers) that flow over larger rocks and add oxygen to the river as they splash. Pools are erosional so they scour out and get deep and are typically full of fine sediment, but riffles are depositional and have gravel and cobbles and lots of bugs like to live here and this is also where adult salmon spawn. So we need to add some gravel rocks to our stream bed.
- **Salmon eggs**: Now that we've got some gravel, let's add some salmon eggs in.
- **Gumdrops**: Next, let's add some trees in the riparian zone. Trees provide shade to keep the water cold (because do salmon need warm water or cold water to survive?), their roots hold back the bank to keep sediment out of the stream so that our salmon can breathe without having dirt clog their gills, and tree leaves provide food for insects that baby salmon eat. What's the ideal temperature for salmon in our tank? 48 degrees. In the wild, salmon need to have temperatures between 45 and 60 degrees to survive.
- **Gummy rootbeer bottles**: Is there anything we don't want to see in our salmon habitat? Anything that might hurt our salmon? Talk about pollution (fertilizers, pesticides, agricultural manure, dog poop, etc.) and litter.
- **Gummy worms**: Speaking of food, let's add some bugs to the stream so our salmon have something to eat.
- **Pretzels**: Now we need somewhere for our baby salmon to hide and take shelter from predators. So we're back to trees! When trees die and fall in the river it provides areas for salmon to rest and hide from predators because when the trees collect and create a log jam it forms a pool in the river and pools are the ideal spot for little salmon to hide, rest, or wait for food to float downstream.
- **Predators**: Speaking of hiding from predators, what kinds of animals like to eat salmon? Here we've got some bears and bigger fish. Birds would also be another predator that eats salmon. Orca whales too, but we couldn't find gummy orcas 😊
- **Swedish fish:** what are we still missing? Our salmon! Let's add those in. Where do you think they should go? Probably in a pool near a log jam of our pretzel logs.
- Finish by talking about where streams go, estuary, and salmon life cycle.

Closing Activity/Assessment (5 minutes)

- At the end of class, ask for students to share one thing they learned about what salmon need to survive.