

The Edible Estuary

You will need:

Cake or brownie pan
Mixing bowl (optional)
Electric mixer or whisk (optional)
Large serving spoon
Small plates
Spoons
Napkins

Plastic gloves
Plastic baggies with twist-ties or Ziploc
type bags
Small cups

Vanilla wafers or sliced sponge cake
(BEDROCK)
Chocolate pudding mix and milk (or pre-
mixed pudding) (SEDIMENT/MUD)
Yellow sprinkles (SAND)
Oyster crackers (OYSTERS)
Coconut (MARSH GRASS OR SEAGRASS)
Green food coloring
Chocolate chips (SNAILS)
Fish crackers or gummy fish (FISH)
Golden raisins (SHRIMP)
Stick pretzels (STARFISH)

Assembly:

It's probably a good idea to cover a table with newspaper or a disposable tablecloth and do the assembly on this. It is best to pre-measure the smaller food items into cups (the quantities will depend on the number of students that you have—you want each student to be able to participate by adding something, but don't want students to go overboard and add an entire container of, for example, chocolate chips to the "estuary.") All students who are handling food should wear disposable plastic gloves.

Assign each child a component of the estuary (e.g. bedrock, mud, etc.). I hand out cards with the various components' names on them. You might want to add gummy worms, sharks or other items that seem appropriate. With the gummy fish and sharks, I have the kids stick one end of a toothpick in the gummy, and the other end in the "estuary", so the fish "swim" above the estuary.

Depending on the ages of the students, you may want to prepare the chocolate pudding ahead of time, or use ready-to-eat pudding. Otherwise, have a couple of the students mix up the chocolate pudding in the bowl. Have another student pour some coconut into a baggie and add 3 or 4 drops of green food coloring. Make sure the bag is sealed, and have the student shake the bag until the coconut is green.

Explain that vanilla wafers (or sponge cake) represent the bedrock limestone below the sediments of the estuary. Have students place vanilla wafers in the bottom of the baking dish; you can have them make a second tier of vanilla wafers over about 1/3 of the dish to help create a slope. This can represent the gradient from the shore into the deeper parts of the estuary.

Have other students pour the chocolate pudding over the wafers (they will need to use a spoon to spread the pudding). This represents the sediment in the estuary.

Have students add the other components of the estuary, in the appropriate locations:

- Sand (sprinkles) along the bank of the estuary
- Salt marsh (green coconut) along the "bank" of the estuary or seagrass scattered over the estuary bottom
- Snails (chocolate chips) in the salt marsh or seagrass; some around the edges of the banks
- Oysters (crackers) in patchy groups in the sediment; these should really be "attached" to bedrock
- Starfish (pretzels broken into pieces and arranged like arms) in the seagrass or on sandy patches
- Fish (crackers/gummies) and shrimp (golden raisins) scattered around the estuary

When the estuary is complete, review the components and their roles, then allow the students to become dredging operations and sample the estuary!