# Plankton Races

New England Aquarium
Protecting the blue planet

**Materials:**

- Containers to hold water
- Water
- Washers (Optional)
- Stopwatch (Optional)
- Printed worksheet (Optional)
- Material to build a plankter
    - Modeling clay
    - Foil
    - Straws
    - Pipe cleaners
    - Toothpicks
    - Paperclips
    - Styrofoam
    - Corks
    - Film Canisters
    - Other craft material at hand

**Preparation:**

- Depending on the student's background knowledge and age, you may need to fill in some information about what plankton is. **Plankton** describes any organism that lives in water that cannot swim against a current. It is contrasted with **nekton**, which are organisms that live in water that can swim against currents. Generally, plankton is also **neutrally buoyant** meaning they neither sink nor float, but hang or hover in the water column. **Plankter** is an individual planktonic organism.

**Procedure:**

- Challenge students to design, test and redesign a plankter that will achieve neutral buoyancy.
- This can be challenging, so just giving them the challenge of designing a plankter that sinks the slowest is also a good idea.

**Learning level:**

- K-6

**Vocabulary:**

- Plankton, Nekton, Neutral Buoyancy, Plankter

**Duration:**

- Variable ~30 minutes

**Extensions and Variations:**

- Have students compete and time their plankton sinking. Slowest wins!
- Use the associated worksheet if you want students to document their modeling, design and redesign process.
- Further challenge students to build a plankter that can sink slowest with the greatest number of washers attached.
- We'd love to see the plankter you created, post photos to our social media!
- Use this activity as an open-ended play experience—"Can you make something that floats? Sinks fast? Sinks slowly?"
- Make predictions and test which materials sink or float.

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Name_____

# Plankton Races

Draw a picture of your plankton design below.

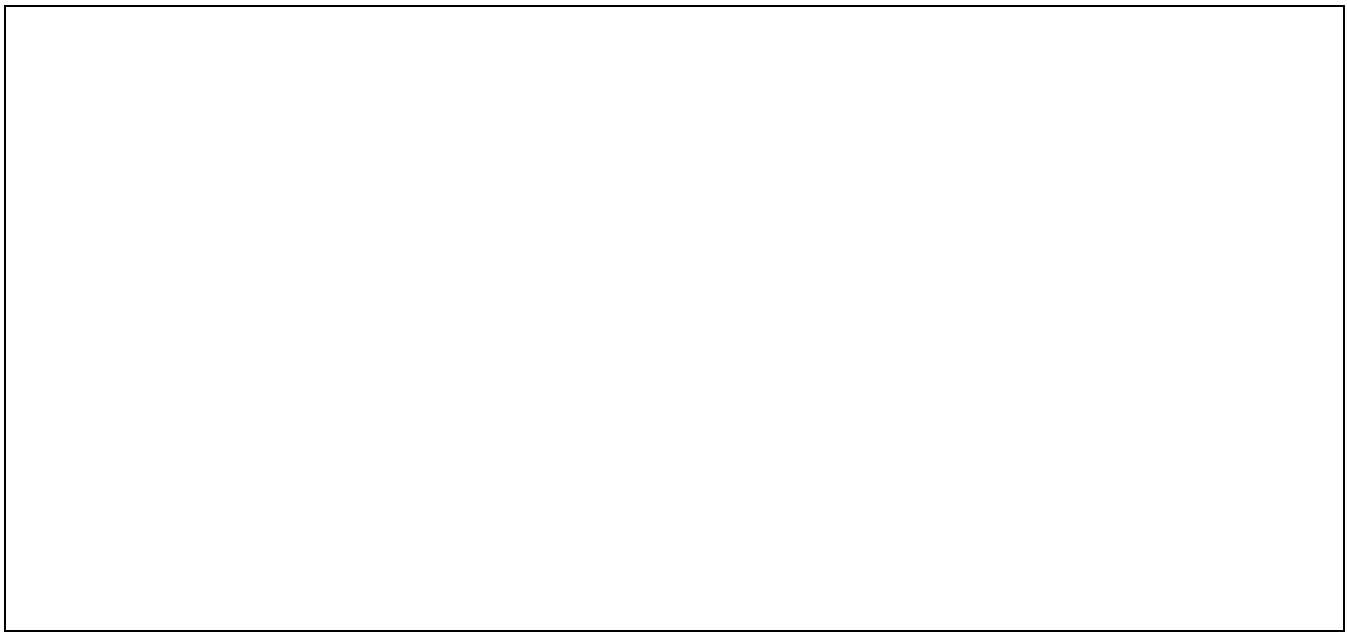
What are the key features that will make it float?

Build and test, and redesign your plankton.

## Conclusion:

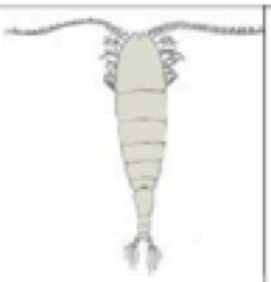
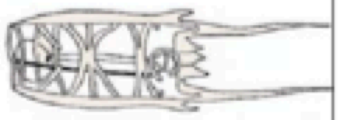
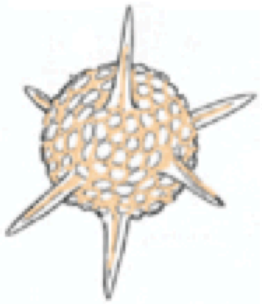
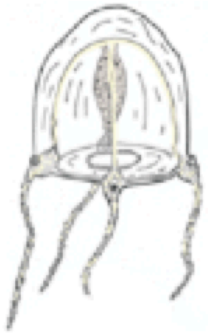
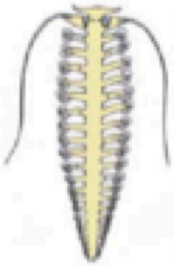
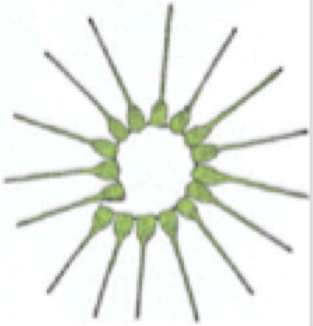
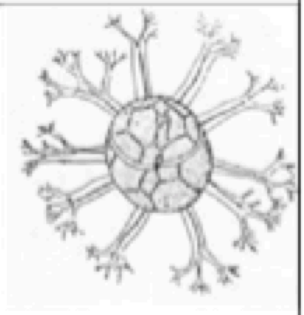
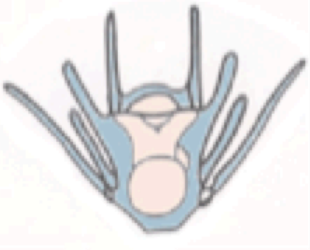
Compare your plankton model to other students'. Which plankton floated the longest and why?

Now draw your final plankton design:



In what ways is it the same as your initial design? How did you need to change it?

# Types of Plankton

| | | | |
|---|---|---|---|
|  |  |  |  |
| **Copepod** | **Salp** | **Radiolaria** | **Medusa** |
|  |  |  |  |
| **Tomopteris** | **Appendicularia** | **Asterionellopsis** | **Cladopyxis** |
|  |  |  |  |
| **Thallasionema** | **Fish Larvae** | **Echinoderm Larvae** | **Barnacle Larvae** |