Plankton Design Challenge

Can you create a neutrally buoyant plankton? Plankton is what we call the diverse organisms that live in large bodies of water are unable to swim against the current. See if you can design a plankton that will sink as slowly as possible, without floating on the top. You want your plankton to maintain neutral buoyancy to avoid floating (which would make them vulnerable to predators) and to avoid sinking (which would deprive them of sunlight).

Materials Needed:

- A tall, clear container (e.g., a drinking glass, blender, plastic bin, etc.)
- Water
- Any materials around the house that can get wet (e.g., sponges, straws, coins, toothpicks, beads, etc.)
- A timer or stopwatch

Step-by-step instructions:

1. Fill a see-through container with water.
2. Gather miscellaneous materials to build your plankton.
3. Start designing your plankton - be creative! You can look at photos of real plankton for inspiration.
4. Once you think your plankton is ready to test, drop it in the water and observe. Use a timer to record how long it takes for your plankton to reach the bottom of the container.
5. Change your design to see if you can get it to sink even slower!

Optional Explorations:

- Record your planktons' sink times in a table. Use collected data to make a bar graph.
- Draw a photo of your plankton and write its backstory: what kind of plankton is it? What type of water does it live in?
- Share a photo of your plankton with us by tagging #OMSI on Instagram or Facebook!

Discussion questions:

- What changes did you make to your plankton design to ensure success?
- Which materials worked the best? Which were the least helpful?
- Why do you think it would be helpful for a plankton to be neutrally buoyant?

Additional Resources:

Inside the Gorgeous and Mysterious World of Plankton
www.wired.com/2015/06/plankton-wonders-of-the-drifting-world/

The Secret Life of Plankton
www.youtube.com/watch?v=xFQ_fO2D7fO