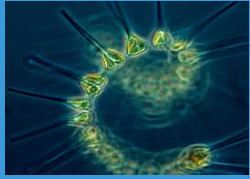


# Great Plankton Sink Off

## Distance Learning Activity



### Introduction:

Explore the wonderful and diverse world of plankton and get creative by making your very own plankton. Learn about how these (mostly) microscopic organisms survive in the big blue ocean and the vital role they play in the ocean's food web. This activity is great for all ages.

**Make sure to check out the guided activity [video!](#)**

### Materials:

- Large container of water (something with depth like a bucket, storage bin, etc.)
- Stopwatch/ timer
- Modeling clay or play dough broken up into quarter sized balls
- Materials to build plankton (pipe cleaners, popsicle sticks, paper clips, beads, misc. craft supplies)
- Paper/ white board for recording times

### Background:

Plankton are a group of marine and freshwater organisms that drift through the water. Many of these plankton can swim but they are too small to move against a current. The word plankton comes from the Greek word "planktos" which means wandering.

There are two types of plankton, phytoplankton and zooplankton. Phytoplankton are the plant like plankton. Like plants they photosynthesize to create food and oxygen. About 50% of the oxygen in our atmosphere is produced by phytoplankton. Phytoplankton is eaten zooplankton. Zooplankton are animal plankton and most ocean animals, including fish, crustaceans and mollusks, begin their lives with a planktonic stage. These tiny plants and animals are the base of the food web in the ocean. Plankton are eaten by many animals including crustaceans, fish, and even baleen whales.

Phytoplankton	Zooplankton
<ul style="list-style-type: none"> <li>• Plant like</li> <li>• Photosynthesize to create food</li> <li>• Single celled organism</li> </ul>	<ul style="list-style-type: none"> <li>• Animal like</li> <li>• Eat other organisms</li> <li>• Single celled or multi-celled</li> </ul>

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Phytoplankton lives near the top of the ocean in an area called the photic zone to photosynthesize. The photic zone is the surface layer of the ocean where sunlight shines through the water, it reaches to about 260 feet into the ocean. Zooplankton also lives in the photic zone so they can eat phytoplankton and other zooplankton. Staying in the photic zone is a challenge when you cannot swim against a current. Plankton have evolved many clever ways to stay towards the top of the water column without floating on top of the water. Added spikes and flat shapes increase surface area and producing extra oil increases buoyance.

## Instructions:

The goal of this activity is to create a plankton design you think will sink *slowly* in the water. You want the plankton to sink and not just float on the top of the water, since real plankton would not be able to survive if they floated on the top of the water.

You can use any variety of material to make your plankton, however you must use all the clay you are given (quarter size amount). Try experimenting with creating flat designs, a design with lots of spikes, or a design with air bubbles trapped in the clay.

## Testing Plankton:

After you have designed your first plankton prototype it's time to test it!

Place the plankton into the water and start the timer. When the plankton hits the bottom of the container stop the timer and record the time. After the first test you can make changes to your design, you must still use all of the clay. After tweaking your design, test the plankton again and record the time. You can repeat the tweak and test process as many times as you want. After all the testing is done it is time to decide who the winner is and award "prizes". You can make as many awards as you like: longest time to sink, most creative, used the most or least extra materials.

## Wrap-up:

- Talk about what worked and what didn't work? And why?
- How challenging was it to use all of the clay?
- How does this relate to real plankton? (Plankton cannot swim against a current but must live in the photic zone. They have adapted their body shapes, size and oil production to increase buoyancy. Making a flat plankton, creating spikes to spread out weight of clay and trapping air bubbles in the clay are equivalent to how real plankton survive in the ocean.)

## Resources:

Webpages: [Ocean Conservancy Blog](#)  
[Britannica Kids](#)

Videos: [The Secret Life of Plankton](#)  
[Plankton Distance Learning Module](#)

[Plankton matching activity](#)

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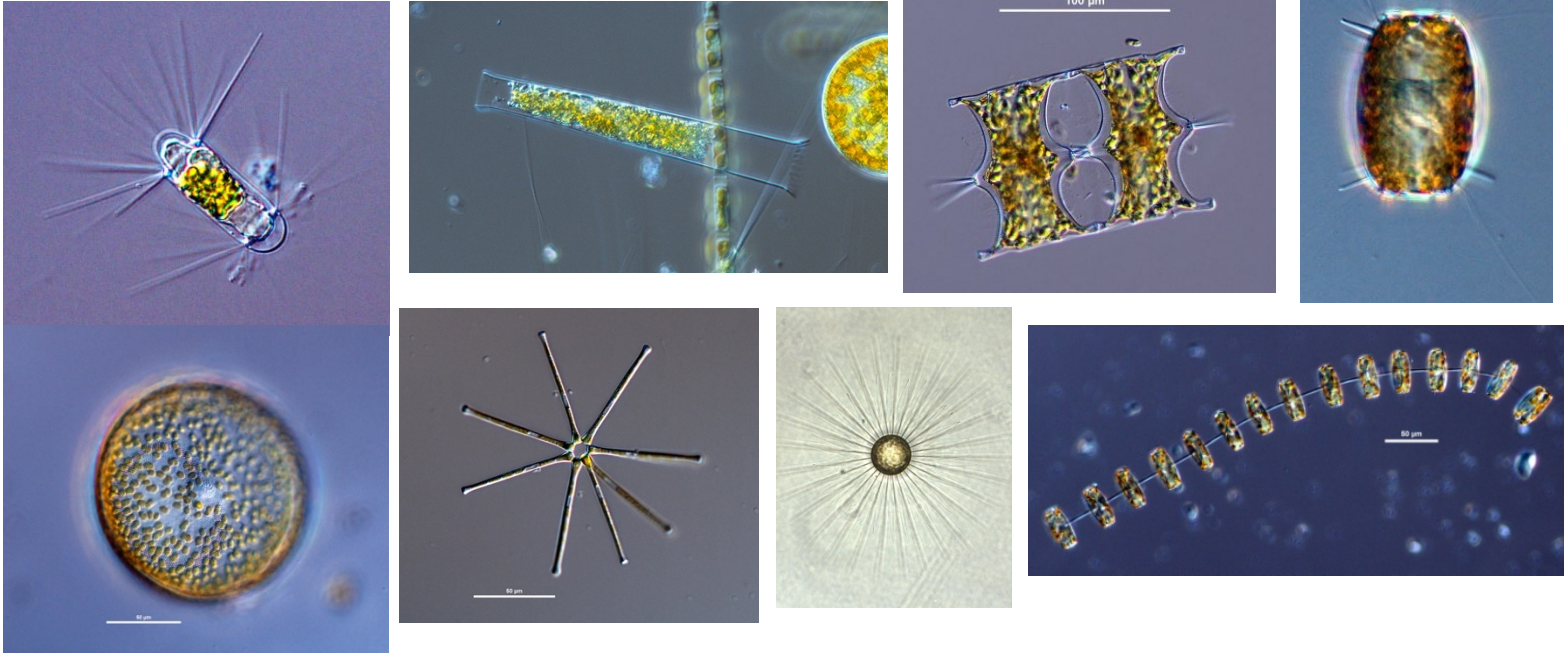
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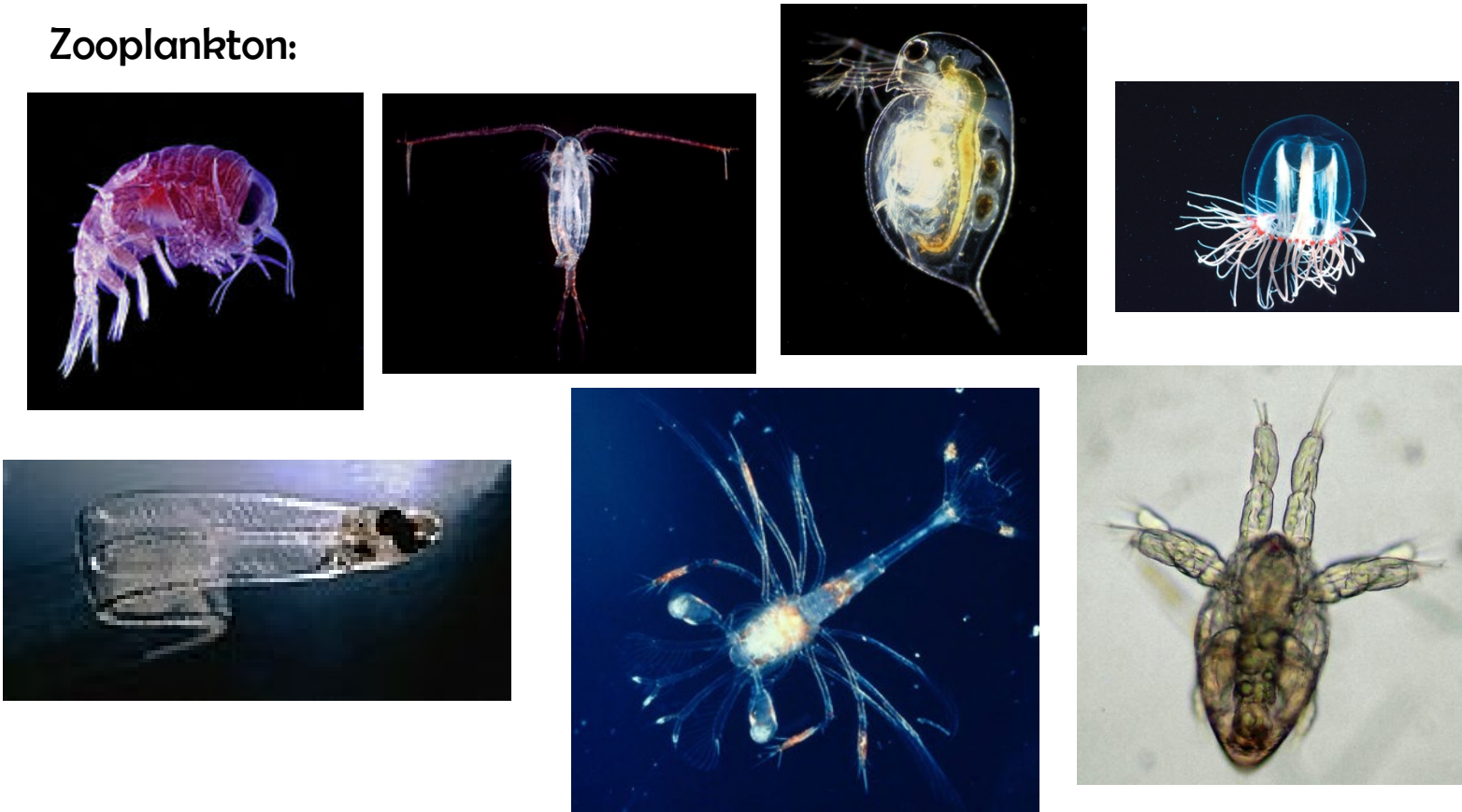
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# Plankton Design Inspirations:

## Phytoplankton:



## Zooplankton:



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