

Lesson: The Plankton Challenge

Phase of learning

Years 5 - 6, Years 7 - 8, Years 9 - 10

WA Curriculum

K-10 Science

Region

North Coast, Gascoyne Coast, West Coast, South Coast, Indian Ocean Territories

Summary

Students will attempt to build a plankton model that has neutral buoyancy.

Outcomes

- Students will demonstrate a basic understanding of plankton form and function.
- Students will evaluate a range of materials and designs to achieve neutral buoyancy.

Duration

60 minutes

Preparation

Background information about plankton can be found in the Fact Sheet: [Plankton](#).

This lesson requires you to source materials suitable for students to attempt to build a plankton model. The following list may be a good starting point:

- blu-tac
- foam
- plastic wrap
- styrofoam cups and/or 3D shapes
- toothpicks
- small balloons
- plasticine
- plastic straws
- popsticks

You may also like to provide students with glue and scissors however this activity can be

completed without these items.

A useful pre-activity is to ask your students to brainstorm ideas for materials to achieve neutral buoyancy. These materials could be tested and categorised into 2 groups – sinking or floating.

To test students plankton models, you will require a large clear container filled with water (such that each student can fit their model into it without hitting any of the sides or touching the bottom). Clear is preferable as then students can see if their model is sitting neutrally buoyant in the water.

Students may design their model and document their reflections on their model using Student Worksheet: [The plankton challenge](#).

Steps

1. Discuss the term neutral buoyancy. What is the importance of neutral buoyancy for plankton? Why do plankton need to be present at the surface of water.
2. Review Student Worksheet: [The Plankton Challenge](#) and ask students to begin planning a design and compiling a list of materials for use in their model.
3. Allow students time to construct their model.
4. Fill a small aquarium or clear container with water.
5. Engage students in a discussion about which models they think will be successful.
6. Allow students to test their plankton models. You may wish to use a stopwatch to record how long it takes for each model to sink or float.
7. Discuss the advantages and disadvantages of each of the models.
8. Allow students plan, document and make modifications to their designs and trial again.

The activity can be concluded at this point or students can take their models home to continue refining their design.

Related resources

[Fact Sheet: Plankton](#)

[Student Worksheet: The plankton challenge](#)

[Video: The Plankton Challenge](#)

Keywords

buoyancy, neutral buoyancy, photic zone, photosynthesis, phytoplankton, zooplankton, surface area