

FORMAL ASSESSMENT

Planet Plankton

Each activity in the Estuaries 101 Middle School Curriculum is designed around specific performance tasks. A generalized set of scoring rubrics is provided to judge student progress against these performance tasks. Use the performance assessment indicators in the table below along with the suggested answers in the Teacher Guide to arrive at a score for each performance task.

In addition, you can use the attached Student Assessment handout to conduct a formal assessment at the conclusion of the activity. Use the suggested answers and performance assessment indicators to rate each student's progress.

Performance Tasks	Performance Assessment Indicators		
	Low - Basic	Medium - Proficient	High- Advanced
Students can define plankton as floating or drifting plants or animals that live in the water and observe that there is an enormous diversity of plankton.	The response is partially correct. There is also evidence of inaccurate, incomplete, or inappropriate skills or knowledge.	The response is correct, and demonstrates accurate understanding of concepts. Minor inaccuracies may appear but there is no evidence of misconceptions.	Evidence of higher-level thinking and the application of the appropriate skills and prior knowledge. The response is correct and complete, and contains elaboration and extension. There is no evidence of misconceptions. Minor inaccuracies should not necessarily lower the score.
Students can explore ways in which plankton have adaptations that help them avoid sinking below the sunlit photic zone.			
Students can determine that plankton have developed a variety of adaptations to aid in survival.			

Questions and Answers

1. Which organism is phytoplankton, A or B?

Organism B is phytoplankton.

2. Which organism is zooplankton, A or B?

Organism A is zooplankton.

3. How do you know which plankton is phytoplankton and which plankton is zooplankton?

Zooplankton may have appendages such as legs, antennae, claws, etc. Phytoplankton have many different shapes but does not have appendages.

4. Plankton are necessary for survival in the estuaries because:

b) Plankton are necessary to survival in the estuaries because they are the base of the food chain.

Reflection Question

Why is plankton important in the estuary?

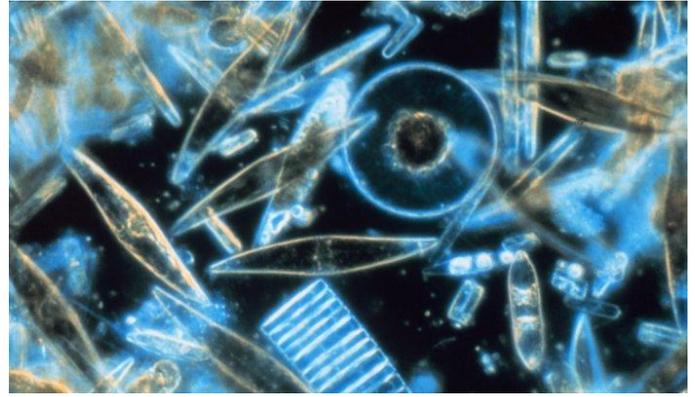
Plankton is the base of the food chain, supplying food energy to higher organisms. Phytoplankton carry on photosynthesis and take carbon dioxide out of the atmosphere.

STUDENT ASSESSMENT**Planet Plankton**

Almost all living things in the estuary depend directly or indirectly on plankton. What is plankton and why are they important in the estuary?

**A**

Credit: Investigating the Charleston Bump Expedition: NOAA Office of Ocean Exploration.

**B**

Credit: Prof. Gordon T. Taylor, Stony Brook University NSF Polar Programs

1. Which organism is phytoplankton, A or B?
2. Which organism is zooplankton, A or B?
3. How do you know which plankton is phytoplankton and which plankton is zooplankton?
4. Plankton are necessary for survival in the estuaries because:
 - a) They add nutrients to the water.
 - b) They are the base of the food chain.
 - c) They help with decomposition.
 - d) All of the above.

Reflection Question

Why are zooplankton and phytoplankton important in the estuary?