

# **Plankton Investigation Concepts Related to the California State Science Standards**

## **Standards for the Life Sciences**

Grade 4 -

Science Standard #2. All organisms need energy and matter to live and grow. As a basis for understanding this concept: b. Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.

Grade 6 –

Science Standard #5. Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept: a. Students know energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs. c. Students know populations of organisms can be categorized by the functions they serve in an ecosystem.

Grade 8 -

Science Standard #8. Density and Buoyancy: All objects experience a buoyant force when immersed in a fluid. As a basis for understanding this concept: d. Students know how to predict whether an object will float or sink.

## **Standards for Investigation and Experimentation**

Grade 4 –

Science Standard #6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will: f. Follow a set of written instructions for a scientific investigation.

Grade 5 –

Science Standard #6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will: a. Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.

Grade 6-

Science Standard #7. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will: b. select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Grade 7-

Science Standard #7. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will: e. Communicate the steps and results from an investigation in written reports and oral presentations.

Grades 9 – 12

Science Standard #1. Analyze situations and solve problems that require combining and applying concepts from more than one area of science.

ref: <http://www.cde.ca.gov/standards/science/>