

## Unit 2: Plankton

### Big Idea:

- Plankton, representing many kingdoms of life drives aquatic food webs as well as a major factor in nutrient and trophic cycling.

### Essential Questions

- What is plankton?
- How are phytoplankton and zooplankton characterized?
- What are food webs and how does available energy change at each level?
- How does biomagnification relate to plankton?
- What are examples of local plankton?
- How is salinity tested and how does it relate to buoyancy of organisms

Vocabulary: Plankton, phytoplankton, zooplankton, photosynthesis, respiration, trophic levels, metabolism, nutrient cycling, classification, dichotomous key, salinity

### NGSS Priority Standards

**HS-LS1-5** Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

**HS-LS1-6** Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

**HS-LS1-7** Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.

**HS-LS2-4** Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

**HS-LS2-5** Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

**HS-ESS2-4** Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate

### Common Core Math and ELA

**RST.11-12.1** Cite specific textual evidence support analysis science/technical texts...

**WHST.9-12.2** Write informative/explanatory texts...

**WHST.9-12.9** Draw evidence from info texts support analysis/reflection/research

**SL.11-12.5** Make strategic use of digital media in presentations...

**HSN.Q.A.2** Define appropriate quantities for the purpose

**HSN.Q.A.3** Choose a level of accuracy appropriate to limits on measurement when reporting of descriptive modeling.

