Plankton Identification Activity

Credit: Erin B. Gordon, Stoneham High School. Prepared for the New Bedford Oceanarium's WOW Mobile Curriculum in 2006

Objectives
Students will be able to:
- Explain the various types of plankton
- Identify various types of plankton using a dissecting microscope

Grade Level: PreK – 5, 6 – 8 and 9 – 10

Enduring Understanding
- Reflection on how we know what we believe will help our understanding.

Essential Question
- What is plankton and how do we classify it?

State Content Standards:
Science and Technology: Grades PreK – 5, 6 – 8 and 9 - 10
Physical Science:
PreK – 2
- Recognize that animals (including humans) and plants are living things that grow, reproduce, and need food, air, and water.

3 – 5
- 2.1 Classify plants and animals according to the physical characteristics that they share.

6 – 8
- 2.10 Give examples of ways in which genetic variation and environmental factors are causes of evolution and the diversity of organisms.

9 – 10
- 2.2.3 Distinguish between plant and animal cells.

Overview
- The class will begin with a discussion of plankton and the following key terms; plankton, phytoplankton, zooplankton, holoplankton, and meroplankton. Students will then observe plankton samples and identify the various organisms within the samples using the COSEE identification of marine plankton handout.

Materials
- Preserved or living plankton samples
- Dissection Microscope
- Petri Dishes
- Student Handout
- COSEE Identification of marine plankton handout or plankton identification books

Evaluation
- Class discussion
- Plankton identification worksheet

Activity
Class Discussion
What is Plankton? Plankton are marine organisms that are such weak swimmers that they can only drift where tides and currents take them.
Phytoplankton are all the plant plankton such as diatoms and dinoflagellates.
Zooplankton are all the animal plankton such as krill, copepods, and jellyfish. There are two types of zooplankton. Meroplankton are zooplankton that are born as plankton, then develop into non-plankton later in life (many fish, lobster, etc.). Holoplankton spend their whole lives as plankton (jellyfish, copepods etc.).
Activity
Students will then observe plankton samples and identify the various organisms within the samples using the COSEE identification of marine plankton handout. The activity handout provides room for definition of terms discussed during the class discussion. The following instructions are provided on the student handout.
- Observe plankton samples using a dissecting microscope
- Draw each organism found in the plankton sample below
- Using the COSEE common marine plankton identification key, identify each organism in the sample. Record your results below.
- Determine whether organism is a phytoplankton or zooplankton in the table below. If the organism is a zooplankton, determine if it is a holoplankton or a merplankton

Notes to Teachers
It is suggested that the Petri dishes are prepared prior to the time of lesson.
Prepare copies of Handouts 1 and 2 for each student

Identification of Common Marine Plankton

Key
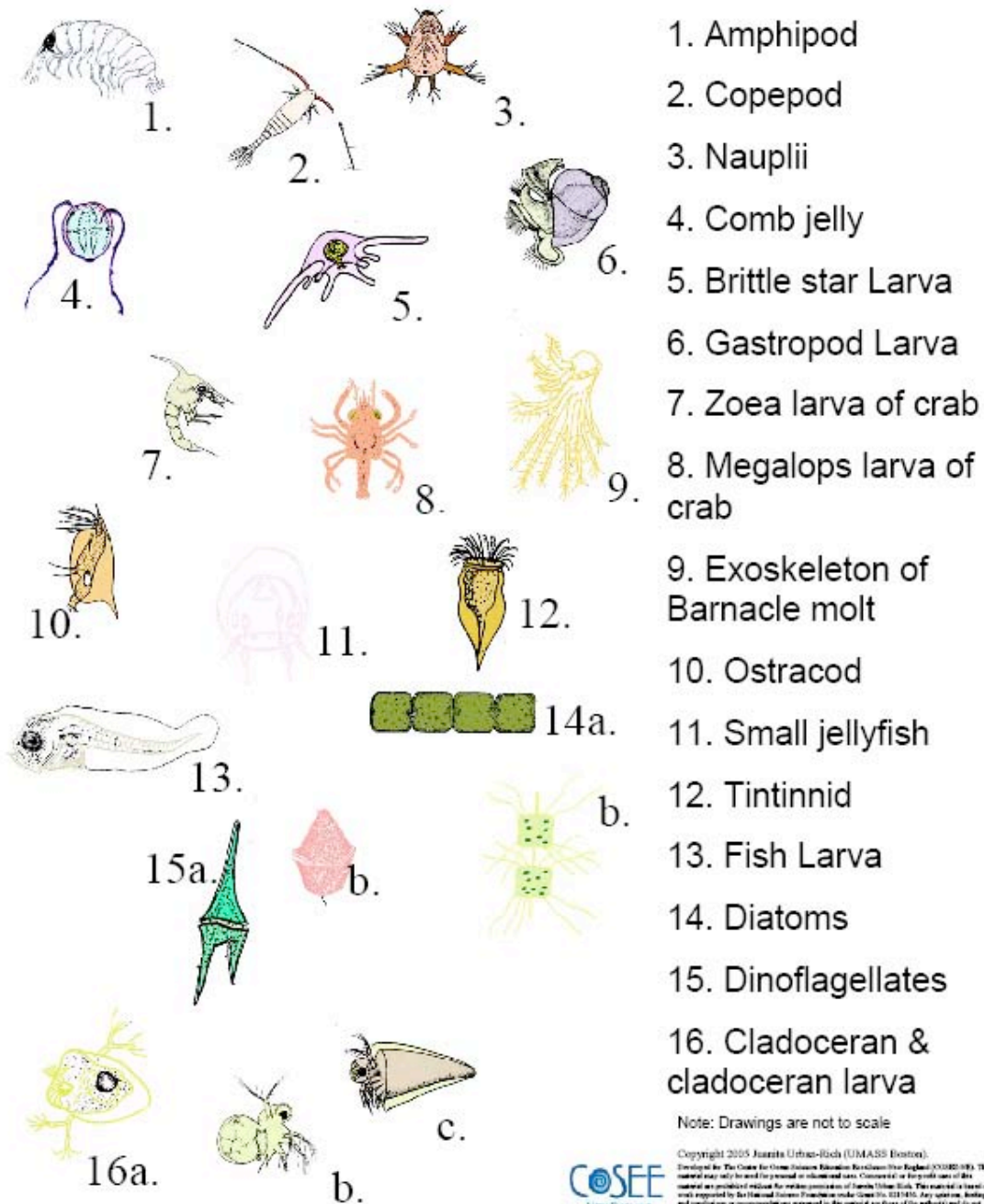
1. Amphipod
2. Copepod
3. Nauplii
4. Comb jelly
5. Brittle star Larva
6. Gastropod Larva
7. Zoea larva of crab
8. Megalops larva of crab
9. Exoskeleton of Barnacle molt
10. Ostracod
11. Small jellyfish
12. Tintinnid
13. Fish Larva
14. Diatoms
15. Dinoflagellates
16. Cladoceran & cladoceran larva

Note: Drawings are not to scale

Plankton Identification Activity

Name: _____Date: _____

Define the following terms

Plankton:

Phytoplankton:

Zooplankton:

Holoplankton:

Meroplankton:

Activity
- Observe plankton samples using a dissecting microscope
- Draw each organism found in the plankton sample on the ID Table
- Using the COSEE common marine plankton identification key, identify each organism in the sample. Record your results on the table
- Determine whether organism is a phytoplankton or zooplankton in the table below. If the organism is a zooplankton, determine if it is a holoplankton or a merplankton.

Plankton Identification Table

Drawing	Plankton Identity	Zooplankton or Phytoplankton	Holoplankton or Meroplankton