Grade 1 **45 minutes**

MEROPLANKTON MATCH-UP

Oregon Science Content Standards:
1.1 Structure and Function: Living and non-living things have characteristics and properties.
1.1L.1 Compare and contrast characteristics among individuals within one plant or animal group.
1.2 Interaction and Change: Living and non-living things interact.
1.2L.1 Describe the basic needs of living things.
1.3 Scientific Inquiry: Science explores the natural world using evidence from observations.
1.3S.1 Identify and use tools to make careful observations and answer questions about the natural world.

Ocean Literacy Principles:
4. The ocean makes Earth habitable.
5. The ocean supports a great diversity of life and ecosystems.
6. The ocean and humans are inextricably interconnected.
7. The ocean is largely unexplored.

Goal: To introduce students to plankton

Concepts:
- Plankton can be plants (phytoplankton) or animals (zooplankton).
- Plankton is very important in marine ecosystem food webs.
- Many marine species have planktonic larvae, and these "babies" (larvae) often look VERY different than the adult.
- Larvae have different adaptations for living in a different habitat than the adults (e.g. in the water column as larvae, while often benthic or settled on a rock as an adult)

Materials:
- Meroplankton Match-Up worksheet and answer key
- PowerPoint
- If including live plankton:
    - Freshly caught plankton (can use pantyhose dragged through water off docks). Collect the morning of the lesson, or night before if plankton is stored in a large container such as a bucket with cool seawater and a bubbler.
    - Brock scopes
    - Small dishes, slides, etc: something that will hold the water sample with plankton and that will fit under the brock scope lens
- Optional: internet video clips of plankton (arkive.org)

Lesson Plan:

1. Optional Prep: collect live plankton and set up plankton stations with brock scopes.
2. Introduce students to plankton**.** Plankton comes from the Greek word for "drifter". Plankton refers to organisms that drift in the water. They are not strong enough to swim against a current, so drift with the water movement. Most plankton are very small, but anything that is a weak drifter is plankton, no matter what the size (e.g. jellies).
3. Show the PowerPoint to introduce plant and animal plankton (phytoplankton and zooplankton). Point out that phytoplankton produce half of the planet's oxygen; oxygen we breathe!
4. Point out that there are two different kinds of animal plankton (zooplankton). Some zooplankton spend their whole lives as plankton (holoplankton), and the adults are usually small. Jellies cannot swim against a current, so are considered plankton even though some are large. Other animals are only plankton as babies, or larvae, and are not plankton as adults (meroplankton).
5. The PowerPoint also introduces the idea that meroplankton larvae often look very different than their adults and go through a dramatic change.
6. Talk about how planktonic larvae and their adults often live in very different zones or habitats (great opportunity to review habitat). The larvae are in the water column and the adults are often benthic (on the bottom).
7. Discuss why larvae might look different than the adults
    - They have different habitats, and need different adaptations for these habitats
    - They might eat very different things, etc.
8. If time and materials permit, have a live plankton station where kids take turns looking at live plankton samples with brock scopes. Point out that plankton are so small, and drifting in such a large ocean—there is a lot we do not know about plankton!
9. If live plankton is not available, video clips can be shown.
10. Work through the Meroplankton Match-Up worksheet

Assessment: worksheet and overall discussion

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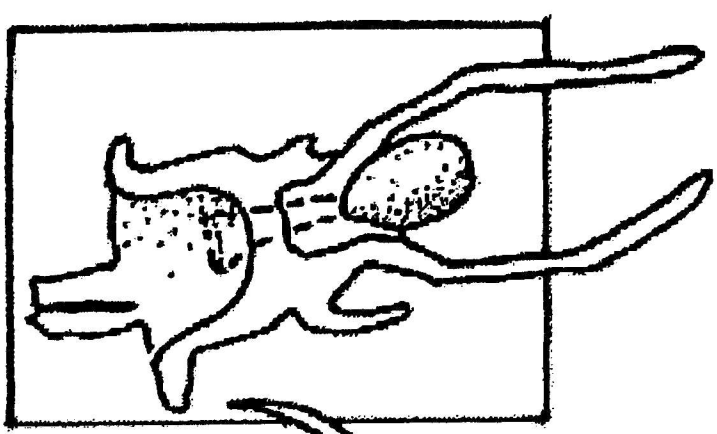
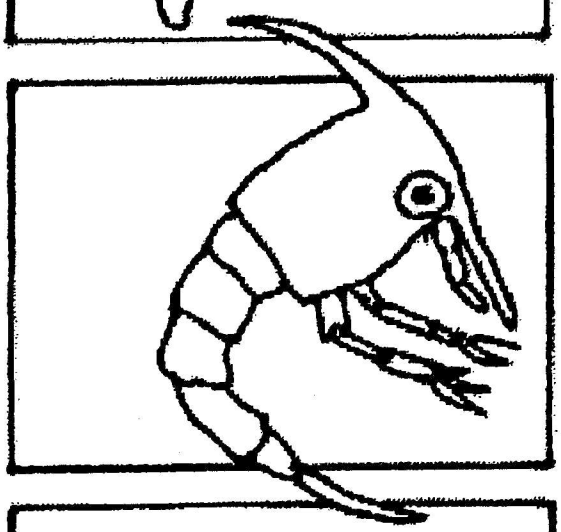
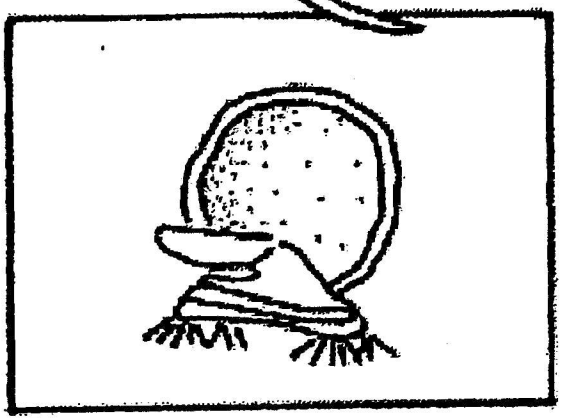
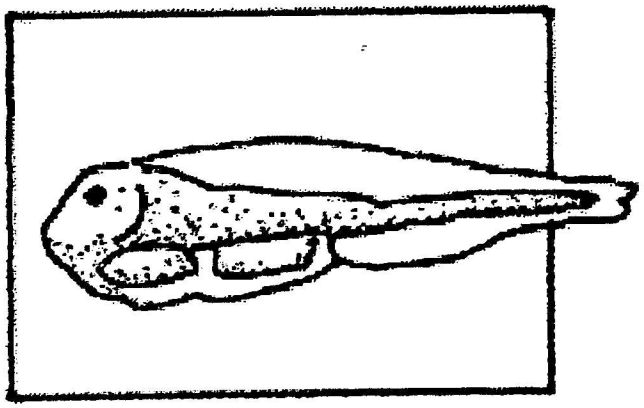
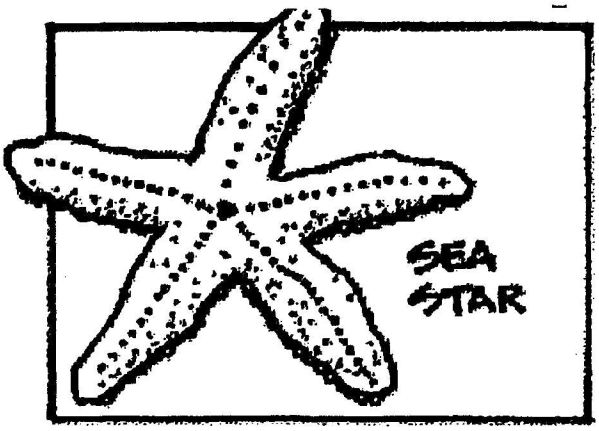


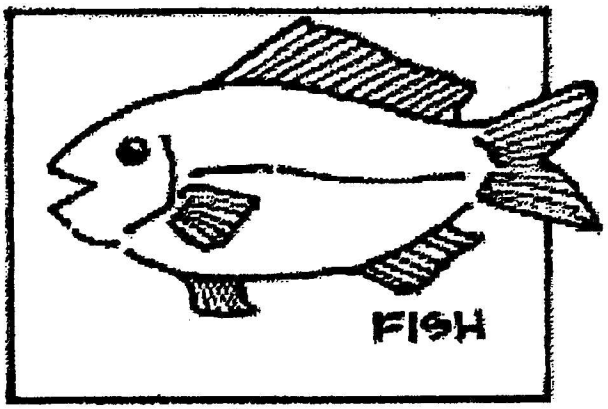


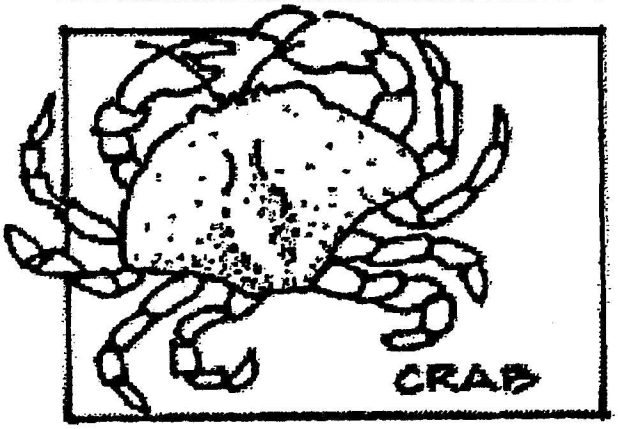


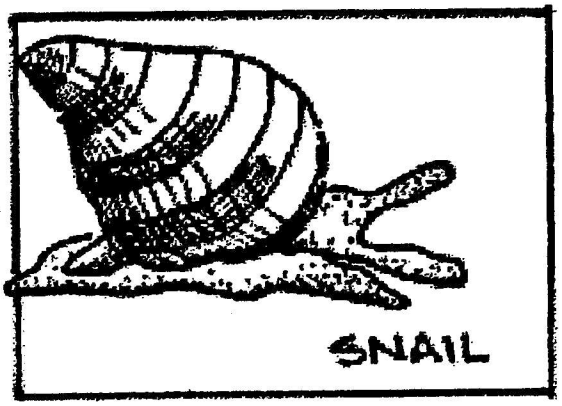


PLANKTON

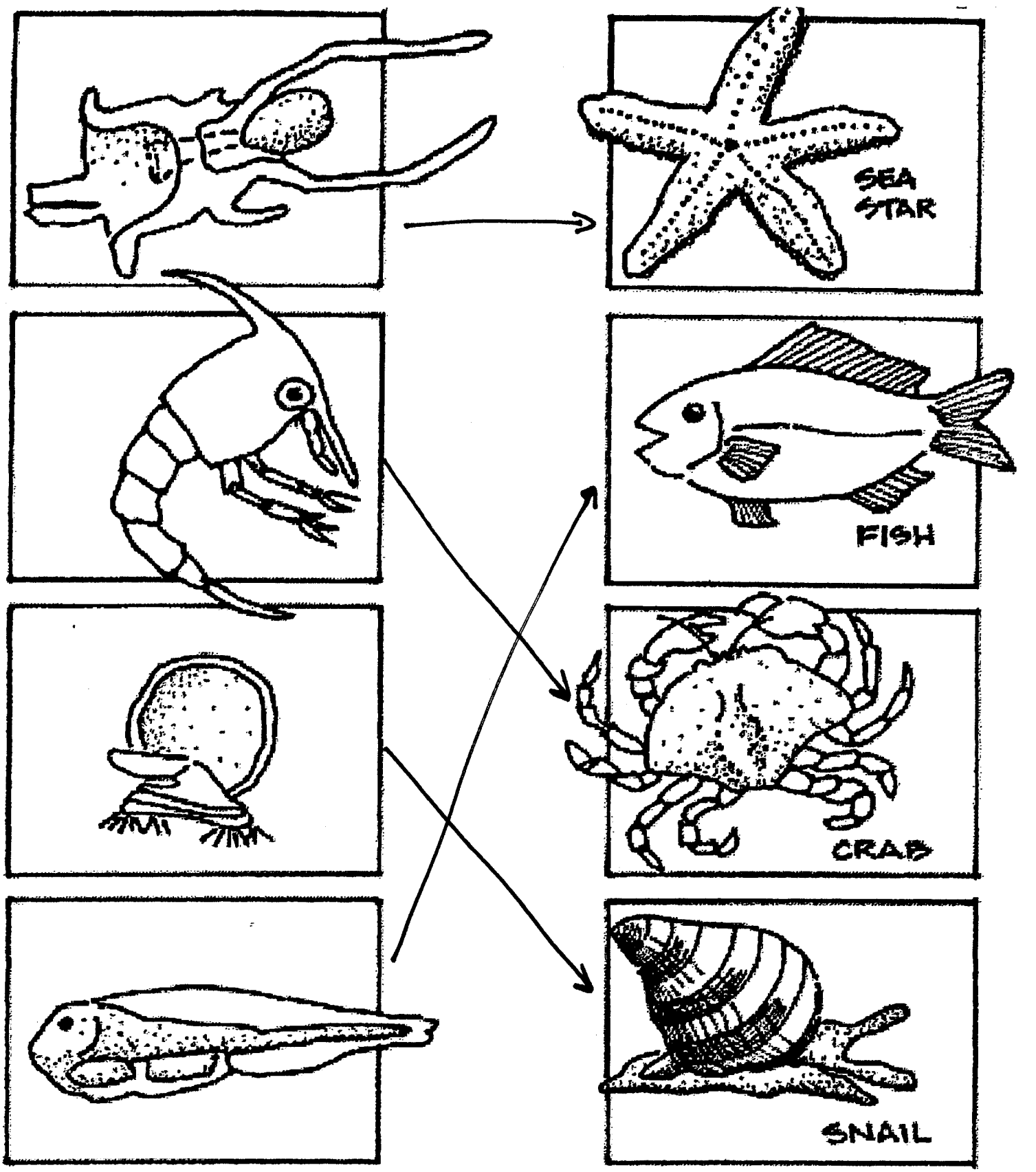








ADULT


SEA STAR
FISH
CRAB
SNAIL
PLANKTON
ADULT