

OIMB GK12 CURRICULUM

2nd Grade

45 minutes

ALGAL WRACK

Oregon Science Content Standards:

- 2.1 Structure and Function: Living and non-living things vary throughout the natural world.
- 2.1L.1 Compare and contrast characteristics and behaviors of plants and animals and the environments where they live.
- 2.2 Interaction and Change: Living and non-living things change.
- 2.2L.1 Describe life cycles of living things.
- 2.3 Scientific Inquiry: Scientific inquiry is a process used to explore the natural world using evidence from observations.
- 2.3S.1 Observe, measure, and record properties of objects and substances using simple tools to gather data and extend the senses.
- 2.3S.2 Make predictions about living and non-living things and events in the environment based on observed patterns.

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.

Goals:

- Students learn the three groups of algae
- Students learn the importance of algae to the beach ecosystem and to humans

Concepts:

- Scientists categorize plants and animals based on different characteristics.
- Algae are divided into 3 groups: red, green, brown.
- Algae make up an important part of the beach ecosystem.
- Algae provide habitat, food and oxygen.
- Humans eat algae, use algae as a thickener, and breathe oxygen produced by algae.

Materials:

- PowerPoint - Algae: Red, Green or Brown
- Various algae samples (green, red, brown) in bucket of sea water
- Trays
- Toothpaste

OIMB GK12 CURRICULUM

- Dried packaged algae
- Pudding that list algin, agar or carrageenan as an ingredient
- Spoons – one per student

Lesson Plan:

1. Introduce the lesson by having the students tell you examples of things that commonly wash up on the sandy beach. Highlight algae. Explain that storms can rip algae off rocks and wash it up onto beaches. Introduce the term “algal wrack” as algae washed up on the beach, left behind at the high tide mark.
2. Discuss the concept of a category and explain that scientists group things based on common features. Algae are categorized by color: red, green, brown.
3. Show the PowerPoint, Algae: Red, Green or Brown
4. Divide the students into groups and give each group a tray of mixed algae.
5. Have the students divide the algae into these three categories. Confirm that sometimes it is hard to tell the color. Scientists also look at other features, but today the class will do its best using color.
6. Do the students see anything other than algae? Crusty things growing on some algae are likely bryozoans, small colonial animals. The students might find other small animals amongst the algae, such as isopods.
7. Brainstorm what roles algae serve in the ocean:
 - Home for animals, or place to hide
 - Food
 - Create oxygen (photosynthesis)
8. Ask if the students think algae can still provide shelter and food after being washed up on the beach. YES! Ask if any students have ever lifted up algae washed up on the beach and seen lots of tiny things jump. Many small invertebrates, such as beach hoppers hide in and feed on algae washed up on the beach.
9. Ask if any of the students themselves eat algae. YES! If they don't eat sushi, they might not think they eat algae. Hold up a tube of toothpaste and ask if any of them brushed their teeth this morning. Explain that most toothpaste has algae in it! Algae are used as a thickener in many things including puddings and ice cream.
10. Optional: Offer the students a chance to eat some algae. Offer packaged dried seaweed and small tubs of pudding that list algin, agar or carrageenan.

Assessment: Have the students list the 3 categories of algae (red, green, brown) and 3 important roles of algae (habitat/home, food, oxygen). Have them tell you how they themselves eat algae!

GK12 Fellows: Alix Laferriere and Paul Dunn