Energy from the Sun Activity Sheet

Name: _____ **Date:** _____

Instructions:

1. Gather your materials to build a food web!
    a. Clothes hanger, creature cards (included in this worksheet), single hole puncher, scissors, string or yarn, blank paper, glue stick, coloring utensils, optional: construction paper and index cards
2. Before building an ocean food web, think about what you ate today and make a list.
3. Pick two food items that you or someone you know ate and trace back the origin of it's energy. (*Hint: If you are unsure of the ingredients of some of your food items, find a food label and explore some of the ingredients.*)
    a. Think of a meat item, what did it eat?

    b. What about a plant, where did it get it's energy?

Build a Food Web Mobile:

4. Draw and color a large sun or create it out of construction paper.
5. Tie the sun to the center of the hanger to start off the web.
6. Print out the last five pages in your worksheet packet (creature card images and descriptions in student worksheet). Color in the organism images if you want!
7. Cut out the pictures and descriptions.
8. Lay out all of the images where you think they fit in the food web.
9. Match the descriptions to the organism images, confirm the placement in the web, and glue the descriptions to the back of the matching organism.
10. Hole punch all of the cards in the top middle
11. Attach everything to the hanger. Start with the primary producer level:
    a. Fold the paper in half and glue the two sides together.
    b. Hole punch the top corners.
    c. Thread some string through the holes and tie them to the bottom of the hanger.

12. Optional: If you want to add different organisms than provided, write your own creature card and attach it to your mobile.

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Life-sized Food Web:

1. Now that you've explored your own food and a food web in the ocean, create a large web with your classmates!
2. Stand in a circle with your group or class.
3. Choose one person to start with the ball of yarn - they represent the sun!
4. Have the sun hold on tightly to the end of the string, and toss to ball to another person in the circle.
5. Whoever catches the yarn ball represents the next level of the food web, and calls out an organism that uses energy from the sun.
6. That person then clasps the string with one hand and tosses the rest of the ball of yarn on to another student in the circle.
7. The next person then calls out a name of an organism that eats the one before it.
8. Continue until all students in the circle are connected with the ball of string at least once.
9. Take a look at and discuss the web you have created!

    a. How does the web look?

    b. Can you see where all the parts of the string go?

10. Draw the food web that you just created with the yarn or draw a new food web of a different ecosystem. Remember, all food webs start with an energy source like the sun!

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Activity Questions:

1. What did you learn about where your food comes from?

2. Can you trace your food back to the sun?

3. In your food web, who are the:
    a. primary producers?

    b. Primary consumers (herbivores)?

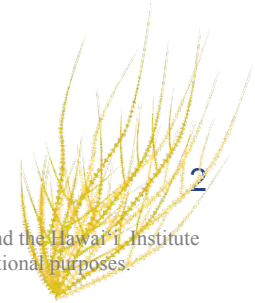
    c. Secondary consumers (carnivores)?

    d. Decomposers?

4. What do you notice about the size of of prey items of the largest predator, the humpback whale (koholā)?

5. Which organism is the top predator in your food web? *hint: which organism eats at every trophic level.*

6. Think of an organism that you would like to add to your food web (or that you did add in #12!). How does this new organism interact with the food web?



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1. Lives in shallow areas where it can get plenty of sunlight.
2. Tiny (microscopic) one-celled algae.
3. A primary producer (plant) that uses energy from the sun.
4. Part of the first level of the marine food web.
5. Eaten by small organisms like shrimp and krill

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Phytoplankton (‘Ōulaula ka‘ama‘ai)

1. **Lives in shallow areas where it can get plenty of sunlight.**
2. **A primary producer that uses energy from the sun to grow through a process called photosynthesis.**
3. **Eaten by turtles, urchins, and even parrotfish.**
4. **Some specie are used by humans for medicine, cosmetics, and food.**

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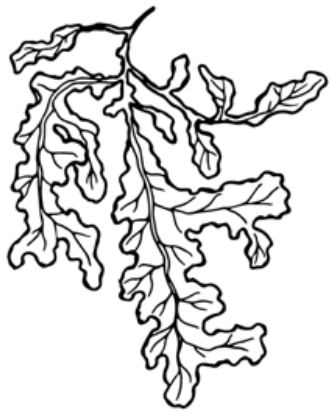
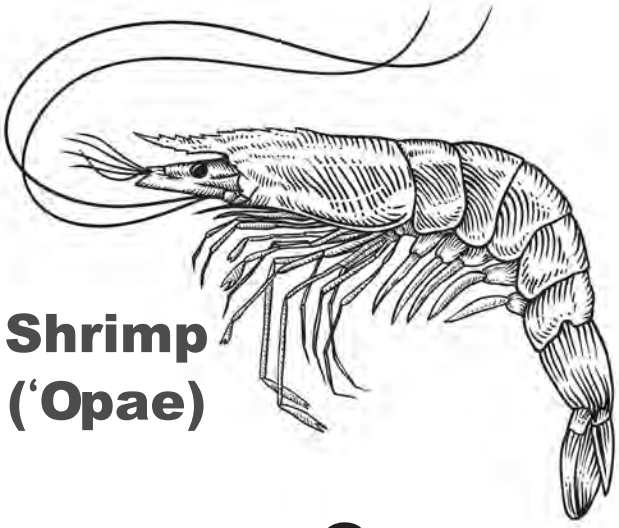
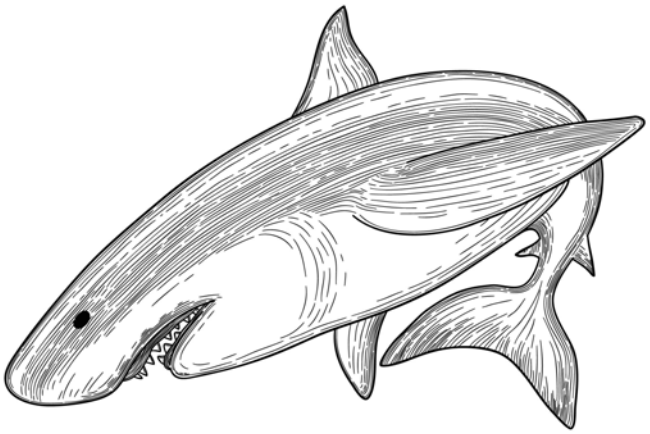


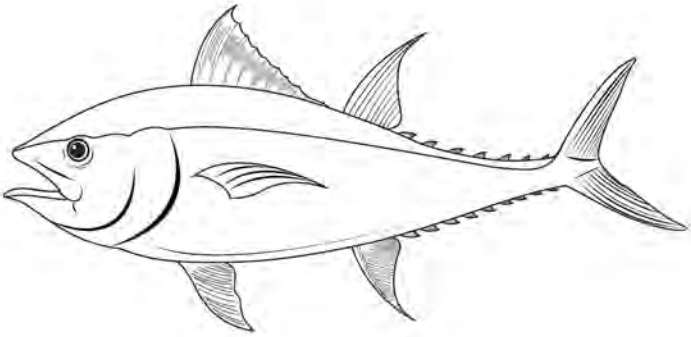
Algae (Limu)



Shrimp (ʻOpae)

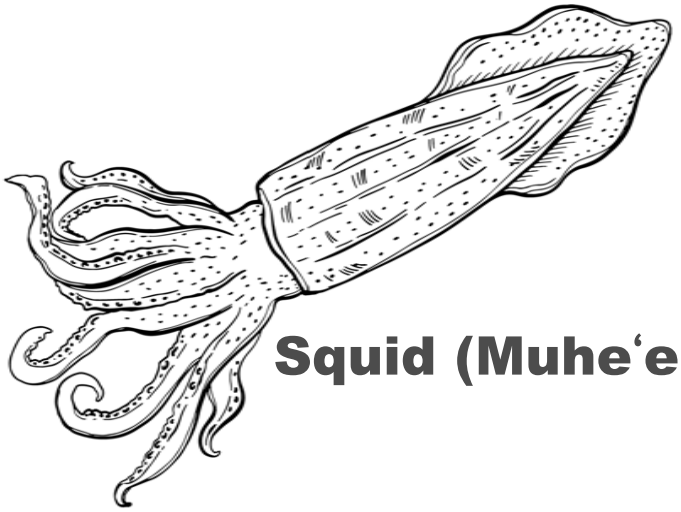


Tiger Shark (Niuhi)

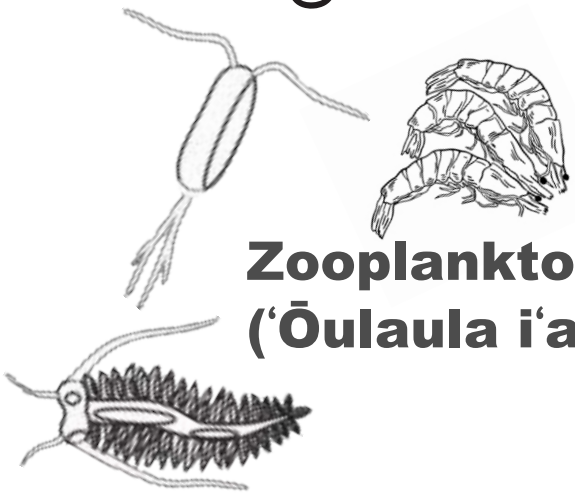


Yellow Fin Tuna (ʻAhi)

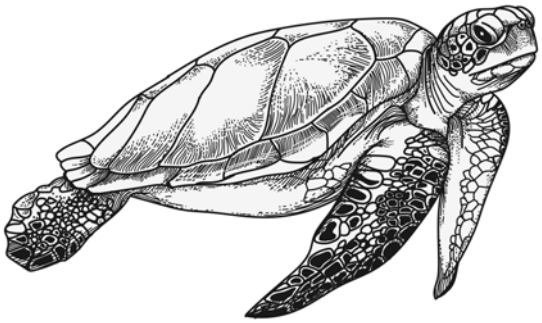
Coral (Koʻa)



Squid (Muheʻe)

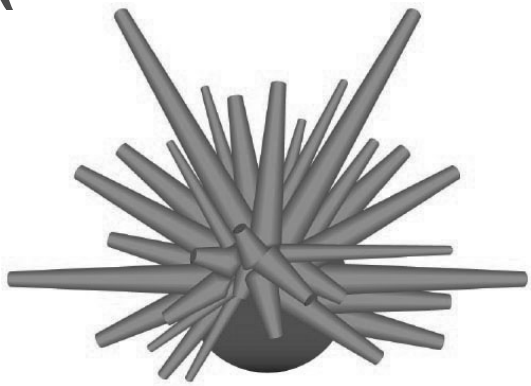


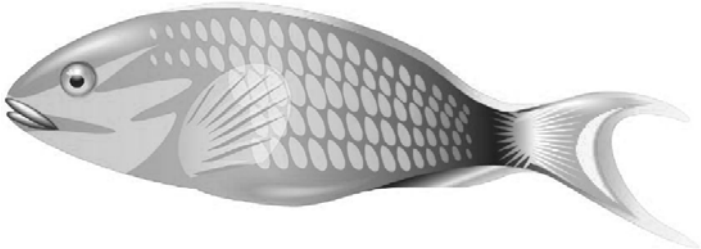
Zooplankton (ʻŌulaula iʻa)



Sea Turtle (Honu)

Pencil Urchin (Hāʻukeʻuke ʻulaʻula)





Parrotfish (Uhu)

Humpback Whale (Koholā)

Draw your own!

Human (Kanaka)

Albatross (Moli)

1. **Bacteria and fungi, that break down the dead material through a biochemical reaction.**
2. **By breaking down dead things, returns nutrients to the environment to help plants grow.**
3. **Necessary part of a food web as they help to keep material and matter cycling.**
4. **non-microbial decomposers, such as worms and some invertebrates and insects, eat dead plants and animals.**

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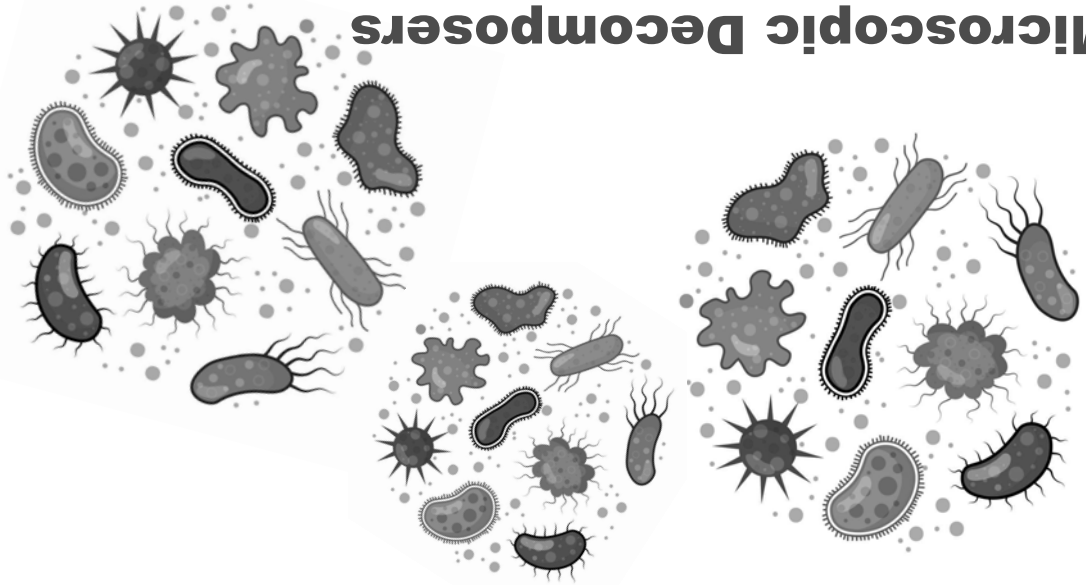

Microscopic Decomposers

1. Small, often microscopic animals that drift and/or swim throughout the ocean.
2. Many of them eat phytoplankton.
3. Krill, a type of them, are shrimp-like “see-through” animals that swim together in groups called swarms.
4. Some of the largest organisms on earth, like humpback whales, eat these tiny creatures.
5. Corals eat these animals by filtering them from the water.

1. Live in warm seas, and tend to swim near the surface.
2. They rely on a keen sense of smell to find their prey.
3. Can swim really fast to catch their prey.
4. They have distinct striped markings on the body.
5. They will eat almost any marine animal, including seals, turtles, seabirds, and a variety of fish using their sharp serrated teeth.

1. They are mammals, warm-blooded, and must come to the surface to breathe air.
2. Has “bristles” instead of teeth, to capture krill (tiny shrimp), and other zooplankton.
3. Moves from one place to another every year.
4. Eats in cold waters in the summer, and travels to warm waters in the winter to give birth.

1. Large flippers for quick moving and swimming.
2. Eats algae (herbivore) and sometimes jellyfish.
3. Brownish to black on top and yellowish underneath, to blend into open ocean waters.
4. Hard shell protects them from predators.
5. They can swim up to 35 mph.
6. Nest on sandy beaches.

1. Metallic blue/black on top and silvery white down to the belly for blending into ocean waters.
2. Torpedo shaped body for fast swimming and long yellow pectoral (side fins) for sharp turning.
3. Eats on the surface but can go down to the deeper waters to find food.
4. Swims in schools with other fish of similar size for safety.
5. Eats smaller fish and squid.

1. Sometimes found in schools, they live in open ocean areas from deep to shallow.
2. Move by using jet-propulsion, by squirting water through the siphon.
3. When in danger, they squirt a cloud of dark ink to confuse their attacker and allow them to escape.
4. Eat shrimp and some fish.
5. Many animals eat them, including many sharks and tuna, some whales, and people.

1. Lives in coastal areas feeding on algae and sometimes corals.
2. Their hard beak-like jaws may crunch up pieces of coral skeleton or rock, pooping it out later to create white sand.
3. Their brightly colored bodies may look different depending on their age.
4. They are food to larger fish, sharks, and humans.

1. These animals live in groups called colonies and are often confused as rocks.
2. Algae live in their tissues, which contribute to their color and provide some food through photosynthesis.
3. Eat zooplankton that drift or swim by in the water.
4. Some fish, like parrotfish, may eat them.

1. Small organisms that live in the shallow areas of the ocean.
2. Many animals, like squid and tuna, eat them.
3. Feed on different things at different life stages. Will eat phytoplankton and some algae.
4. Some live in fresh water areas and others live in salty water like the ocean.
5. They have ten pairs of legs and move by flicking their tails.

1. These animals live on land, but a large number of them eat from the sea.
2. They have a very large brain and walk upright on two legs.
3. Because of their ability to cook, they can eat a wide variety of plants and animals and have the most varied diet known to scientists.
4. Their global distribution, use of tools, and efficient hunting has resulted in the extinction or near extinction of many species.

1. These animals fly long distances to capture prey out at sea before returning to land where they nest.
2. Can have a wingspan greater than 10 feet (3.3 m).
3. They eat squid, fish, and krill mostly by scavenging or hunting at the surface but some species have been found to dive 15 feet or more.
4. They may have trouble feeding their chicks due to plastics in the ocean where they forage.

1. Lives in shallow, coastal regions and are often found in between rocks
2. Feeds by moving slowly along surfaces grazing on algae.
3. Uses hard spines for protection against predators.
4. Can regrow body parts, such as the spines.
5. Octopus, fish, and humans eat them.