

Human Impact Lab: Amazing Adaptations

Loggerhead Marineline Center

Loggerhead Marineline Center is an ocean conservation organization and sea turtle hospital located adjacent to one of the most important sea turtle nesting beaches in the world. The Center features an on-site campus hospital, research laboratory, educational exhibits and aquariums, and also operates the Juno Beach Pier, which hosts world-class angling and sightseeing. The Center's conservation team works with 76 local and international organizations across six continents to form partnerships and share conservation initiatives and best practices that are core to its mission of ocean conservation. The Center is expanding and has launched its Waves of Progress capital expansion campaign, designed to accelerate and amplify LMC's conservation and education impact.

Our mission is to promote conservation of ocean ecosystems with a special focus on threatened and endangered sea turtles. Our vision is to be recognized locally and internationally as the leading authority in sea turtle education, research and rehabilitation.



Lesson Objectives


- I can define adaptation and distinguish between a behavioral and physical adaptation
- I can describe how animals adapt to their environment through natural selection
- I can describe animal adaptations for life in the ocean
- I can discuss environmental threats to organisms living in the ocean

Vocabulary:

- *Adaptation: a heritable physical or behavioral trait that serves a specific function and improves an organism's ability to survive*
- *Habitat: the place or environment where a plant or animal naturally or normally lives and grows*
- *Prey: an animal taken by another animal as food*
- *Predator: an animal that eats other animals for food*

Resources:

- <https://www.fisheries.noaa.gov/species/kemps-ridley-turtle>
- <https://marinelife.org/learn/classroom-resources/>



























Visit [Marinelife.org](https://www.marinelife.org) to learn more about Loggerhead Marineline Center!

Adaptation Card Activity (Grades 3-8)

Directions: Students participate in an interactive matching card game. There are 24 cards total in the resource packet: 12 species cards and 12 corresponding adaptation cards. Give each student one card and direct them to find their match. After each student is matched, have each pair of matching cards show their species card to the rest of the class and explain what the adaptation is and why it's important.

 <p>NOAA Fisheries</p> <p>Loggerhead Sea Turtle</p> 	<p>Adaptation:</p> <p>This species of marine reptile has a very large head, giving it its name. Females of this species lay more than 100 eggs in each nest so that there is a greater chance that more hatchlings will live to become adults.</p> 
 <p>Hawksbill Sea Turtle</p> 	<p>Adaptation:</p> <p>This species of marine reptile has a mouth shaped like a bird beak, giving it its name. This shape allows them to reach into crevices in order to find their preferred food item, sea sponges.</p> 
 <p>NOA Shark Smart</p> <p>Bull Shark</p> 	<p>Adaptation:</p> <p>This fish species has a way of regulating its salt tolerance in order to survive in both fresh and salt water. This allows them to feed and reproduce in ecosystems that other species of its kind cannot inhabit.</p> 
 <p>North Atlantic Right Whale</p> 	<p>Adaptation:</p> <p>This species of large marine mammal can lower its heart rate while diving. This allows it to conserve oxygen levels while diving to great depths.</p> 

 <p>Common Bottlenose Dolphin</p> 	<p>Adaptation:</p> <p>This species of marine mammal can be seen “porpoising” or breaching the surface of the water. This style of swimming allows them to use less energy while traveling great distances.</p> 
 <p>Scalloped Hammerhead</p> 	<p>Adaptation:</p> <p>This fish species is a top predator of the sea. They have a wide, flattened head called a cephalofoil, which is covered in electroreceptors that help them detect prey.</p> 
 <p>Giant Manta Ray</p> 	<p>Adaptation:</p> <p>This species is a filter feeder, meaning that it feeds by straining tiny particles from the water. They have two appendages, called cephalic lobes, which help guide the water into their mouth as they swim.</p> 
 <p>Atlantic Common Thresher Shark</p> 	<p>Adaptation:</p> <p>This fish species has a very long extended tail fin. In order to feed, this species will whip their tail through schools of fish, stunning the prey and allowing for a quick meal.</p> 

 <p>Smalltooth Sawfish</p> 	<p>Adaptation:</p> <p>This fish species has a long, toothy nose which is called a rostrum. They use this rostrum to stun prey by swiping it through schools of fish.</p> 
 <p>Kemp's Ridley Sea Turtle</p> 	<p>Adaptation:</p> <p>This species of marine reptile has a unique mass nesting behavior, called an arribada. During an arribada, thousands of individuals will nest at once, resulting in depositing more eggs in the sand than a predator can eat.</p> 
 <p>Leatherback Sea Turtle</p> 	<p>Adaptation:</p> <p>This species is the largest marine reptile that nests on Florida's beaches. It has a black, leathery shell that can expand and contract as it swims to great depths to find its preferred food, the jellyfish.</p> 
 <p>Mahimahi</p> 	<p>Adaptation:</p> <p>This species of fish reproduces 3 times per year by spawning, or releasing their eggs into the water. Each time they spawn, they release 800,000-1,000,000 eggs in order to have a better chance that more will survive to adulthood.</p> 

Imagination Adaptations (Grades 3-8)

Directions: Imagine we are living in the year 3000. Due to climate change, the Antarctic ice sheets have melted, the oceans have increased in temperature, and sea level has risen about 13 feet. The underwater habitats are different and the animals have adapted to live in their new environments. Design your own NEW marine species that would be adapted to live in the year 3000.

Species Name:

Habitat:

Predators:

Prey:

Adaptations (including color, size, and specialized features and how these are adaptations for the year 3000 climate):

Draw your species below! Include labels in your drawing.

Each individual can make a difference in the future of our planet. Something as simple as reducing your waste, can have a big impact on the health of our planet. What changes can you make in your daily life that will lead to a healthier planet by the Year 3000?

If every person in the world made one life change to lower their impact on the environment. What might the environment look like in the Year 3000?

Create Your Own Sea Turtle (Grades 3-8)

Name:

Dorsal View

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Ventral View

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Species Profile

Species name	
Common name	
Status	
Adult length	
Adult weight	
Range	
Habitat	
Nesting season	
Nesting location	
Number of eggs per nest	
Life span	
Predators	
Prey	
Maximum dive depth	
Maximum breath hold	
Adaptations	

Create Your Own Sea Turtle (Grades K-2)

Name: _____

Turtle's Name: _____

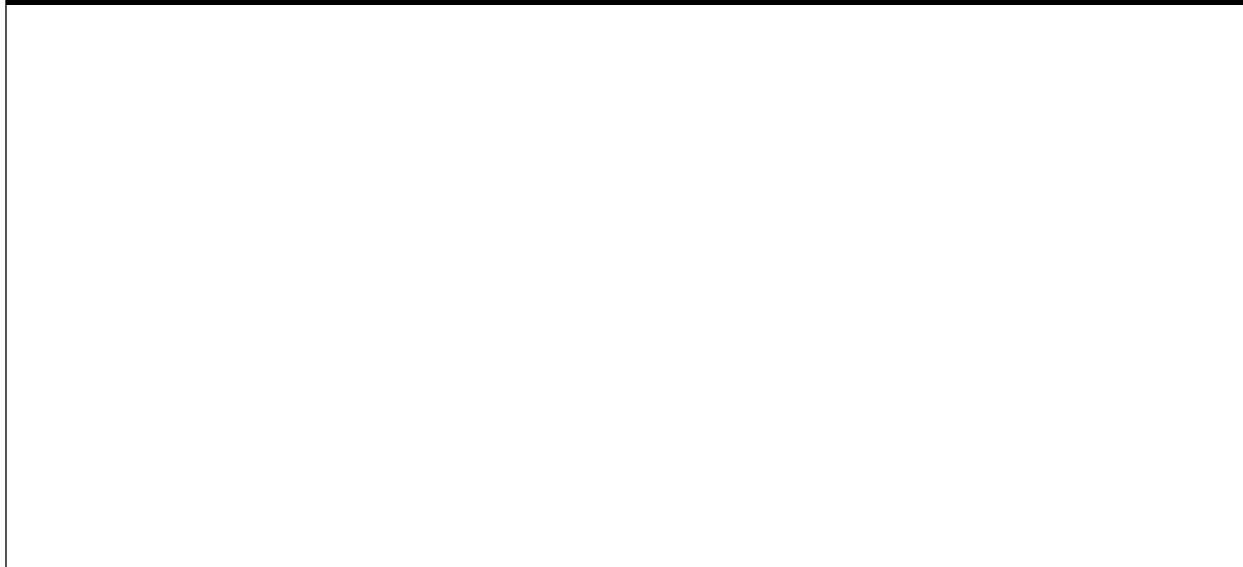
Draw your turtle.



Draw your turtle's home.



Draw your turtle's food.



Draw your turtle's predators.

