

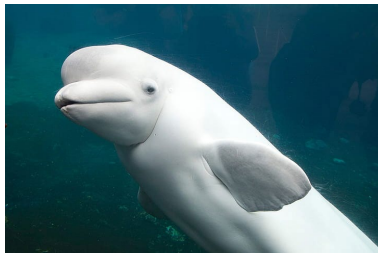


The Marine Mammal Center.

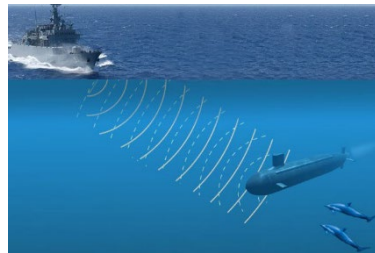
The Marine Mammal Center advances global ocean conservation through marine mammal rescue and rehabilitation, scientific research, and education.

Whale-y Cool Inventions - KEY

Beluga Whale



Sonar



Ships and submarines use sonar to navigate and communicate in the water by sending a sound wave out and seeing how long it takes to return. The sonar system is a human invention that is an imitation of something in nature. In nature, the idea of sonar system is known as echolocation. Beluga whales are one example of a marine mammal that uses echolocation!

Humpback Whale



Wind Turbine Blades



Humpback whales hold the record for longest pectoral fins which can grow up to 16 feet long! Their fins have bumps called tubercles that help the whale move through the water smoothly. Scientists used this as inspiration when creating modern wind turbine blades. The three-dimensional bumps on the edges of the blade helps cut through the air, improving its efficiency.

Sea Otter



Wetsuit



Even though sea otters lack blubber like we see in seals and sea lions, they are still able to thrive in cold water. The secret is in their fur, where warm air is trapped among the hairs in their thick pelts, keeping them warm. Researchers, inspired by this evolutionary strategy, have created synthetic pelts modeled after the mechanism through which sea otters warm themselves. They hope that the technology can be used to create wetsuits to keep humans warm in colder temperatures than ever before possible!



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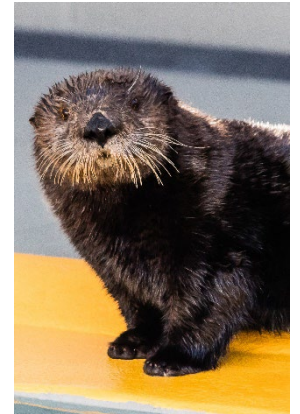
Activity Questions:

1. Pick one animal shown above. What is one adaptation you think they have?

Humpback Whale – bumps on pectoral fins

Beluga Whale – echolocation

Sea Otter – thick fur



2. Why might they need this adaptation?

Bumps on pectoral fins help humpback whales move through the water

Echolocation is used by beluga whales to navigate and hunt in dark waters

Thick fur keeps sea otters warm in cold waters

3. Can you think of any other human invention that might be inspired from adaptations in nature?

There is no right answer, but some examples include :

- **Air Crafts (inspired by birds)**
- **Velcro (inspired by burrs sticking to animal fur)**
- **Camouflage (inspired by many different animals in their natural habitats)**
- **Bird collision-proof windows (inspired by Orb spider webs)**