

3rd grade Lesson Plan

Turn a Cow into a Whale

Standards:

Animals on the planet resemble each other and have a common ancestor (California State Science Standard 3e)

Plants and animals have structures that serve different functions (California State Science Standard 3a)

Suggested Time allotment: 40 minutes

Pressed for Time: 30 minutes

Introduce adaptation

Complete the turn a cow into a whale poster as a class

Anticipatory Set (Engage):

Are there animals on the planet today that haven't always been here? Are there animals that used to be here and are now gone? (Dinosaurs) If we don't have dinosaurs, do you think we have dinosaur relatives? Lizards are relatives of dinosaurs, right? They have some things in common. Well, today we are going to talk about two other relatives: a cow and a whale.

Objective:

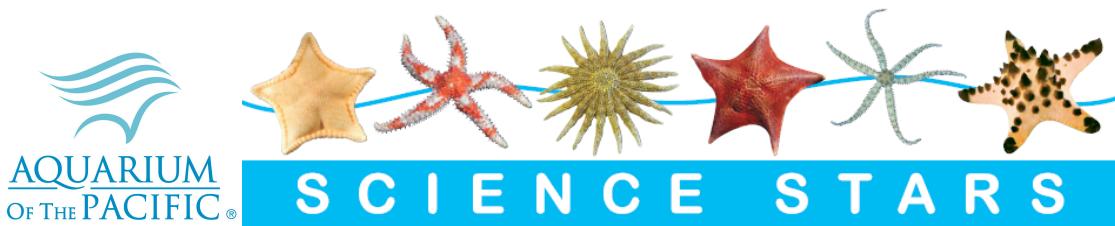
Identify the adaptations whales have that allow them to live in water. Introduce the idea that whales are distant relative of cows. Create an animal able to survive in the ocean.

Background:

Whales were thought to have evolved from a group of land animals whose closest living relatives today are the even toed ungulates or cows and their relatives. Whales today have many adaptations that help them to survive in the ocean. To survive in the ocean whales must be able to swim, survive cold water, hold their breath, and obtain food.

The attributes that a whale has that help it to survive are called its adaptations. Whales are in general fusiform or football shaped. This is the most efficient body shape for moving through water. Whales also have tail flukes for swimming, pectoral flippers for steering and most have a dorsal fin that helps them stay upright.

Another adaptation a whale has is blubber. Blubber is a thick layer of fat that stores energy and helps to keep a whale warm. Many whales spend their summers in cold Arctic or Antarctic waters.



A whale's nose is on top of its body. Whales do not breathe through their mouths, they only breathe through their nose or blowhole. Some whales have two blowholes (baleen whales) and some have only one (toothed whales). Most whales can hold their breath for a long time. A sperm whale can hold its breath for almost 2 hours. Whales do not hold oxygen in their lungs. They instead store oxygen in their blood, and muscles.

There are two types of whales, baleen whales and toothed whales. Baleen whales have no teeth. Instead they have rows of hairy plates called baleen. Typically baleen whales take huge mouthfuls of water into their mouths and strain out minute plankton with their baleen. Toothed whales have teeth and typically eat fish or squid. To locate food toothed whales typically use echo location. Frequently groups of toothed whales will work together to gather food. A group of toothed whales is called a pod.

Vocabulary:

- Mammal
- Blubber
- Adaptation

Modeling:

1. Introduce the 5 characteristics of mammals.
(Live birth, drink milk, have hair, breathe air, warm-blooded)
2. Brainstorm a list of mammals on the board.
3. Discuss what the animals on the board have in common.
4. If necessary, review the term adaptation, and identify mammal adaptations.
5. What if we wanted to take a land mammal and put it in an ocean habitat?
6. Place the cow on the overhead projector, and have students think of what adaptations could be added to the cow to have it live in the ocean.

Guided Practice:

1. Divide the students into groups of 4 to 5 students.
2. Pass out one cow poster to each group. (or use the Cow into a Whale worksheet for each student.)
3. Encourage your students to be as creative as possible and to add adaptations to the cow in order to help it survive in an ocean environment; further encourage students to think outside the box and be outrageous with their cow.

Check for understanding: Have students present their cows to the class. Encourage the students to highlight the adaptations that allow the cow to live in an ocean environment. How will it breathe? How will it move? How will it see? How will it stay warm?

Independent Practice (*Learning extension*):

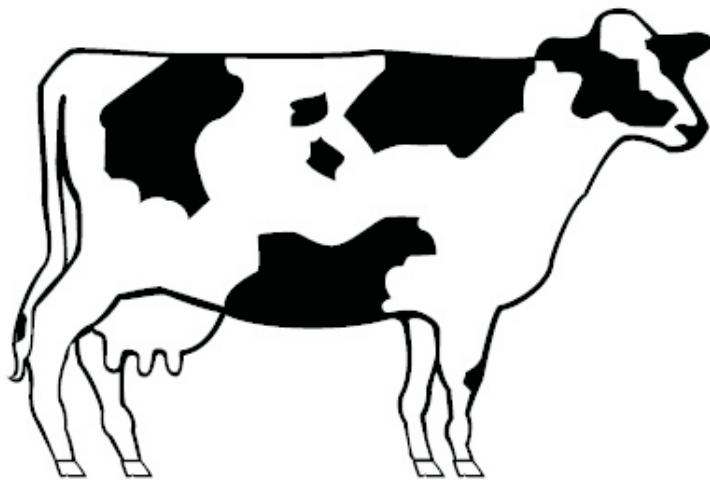
- Complete the double bubble worksheets comparing whales and cows.
- Complete the Cow into a Whale crossword puzzle.

ADAPTATIONS: TURNING COWS INTO WHALES



WORKSHEET

Directions: Now you can transform your own cow! What adaptations will you give this cow so that it can survive in the ocean?

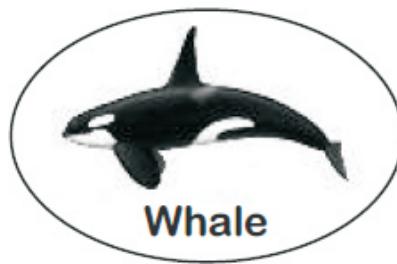
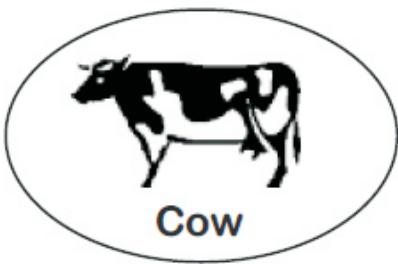


Directions: Describe the adaptations you gave your cow. Explain how your adaptations helped your animal survive in the ocean.

ADAPTATIONS: **TURNING COWS INTO WHALES**

Adaptations help an animal survive where it lives.

Directions: List adaptations that belong specifically to each animal and the adaptations that they share.



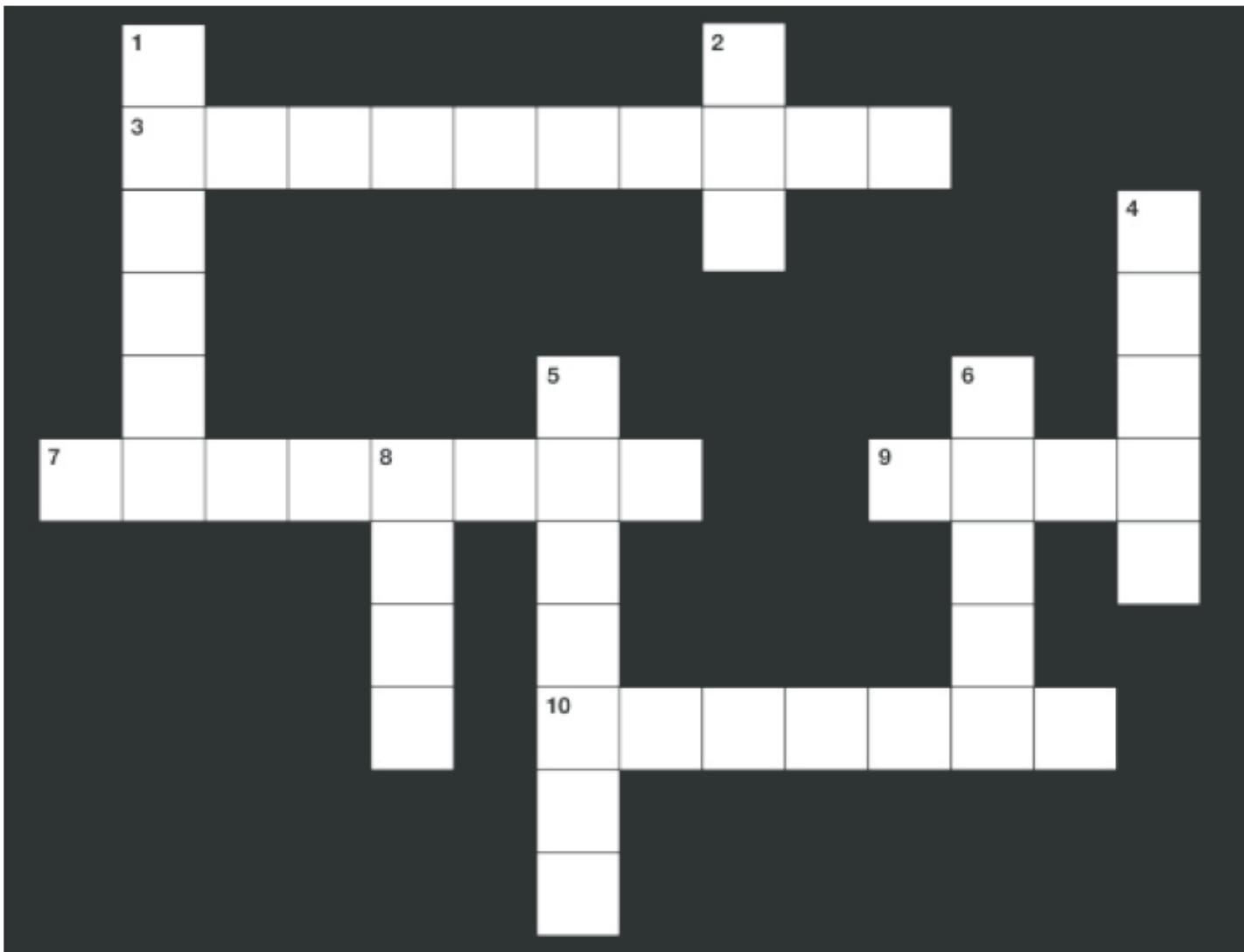
ADAPTATIONS: TURNING COWS INTO WHALES



CROSSWORD PUZZLE

Directions: Use the words below to answer the questions and fill in the crossword puzzle.

MAMMAL FLUKE BIRTH HAIR MILK AIR
ADAPTATION BLOWHOLE BLUBBER BREATHE



ACROSS:

3. Something an animal has or does that helps it survive in its environment.
7. A dolphin or whale breathes out of this.
9. All baby mammals drink this.
10. Mammals do this with their lungs. Fish do this with their gills.

DOWN:

1. This group of animals all drink milk when they are babies, have hair, and

breathe air.

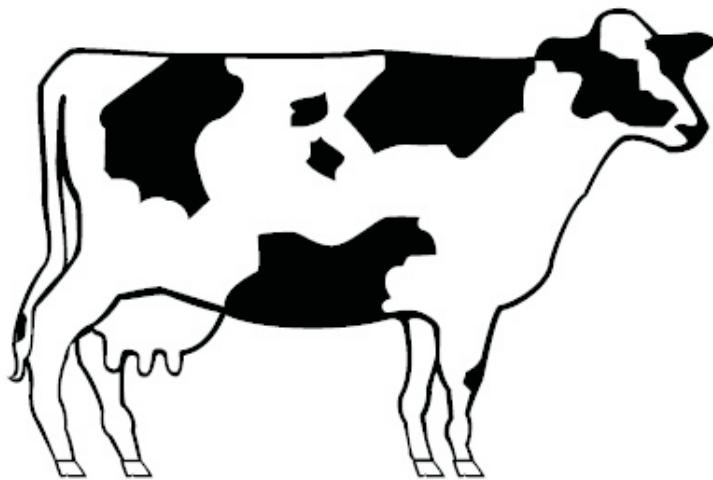
2. All mammals breathe this.
4. This is another name for the back tail of a whale or dolphin.
5. Most marine animals have a layer of this to keep warm.
6. Except for the platypus and the spiny ant eater, mammals don't lay eggs. Instead, mammals have live _____.
8. Even whales have this at some point in their lives.

ADAPTATIONS: TURNING COWS INTO WHALES



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Answers will vary. Some common students responses include

A snorkel to breathe

A scarf or jacket to stay warm

An engine or flippers to swim

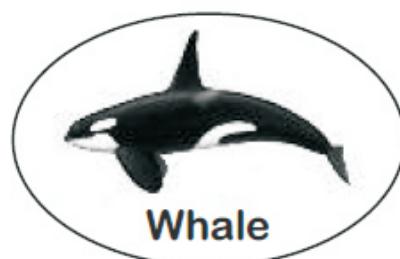
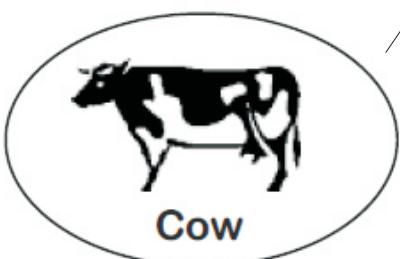
Some way to defend itself (spines, horns, lasers)

ADAPTATIONS: TURNING COWS INTO WHALES

Adaptations help an animal survive where it lives.

Directions: List adaptations that belong specifically to each animal and the adaptations that they share.

Mammal
Warm Blooded
Breathe Air
Similar Ancestors



Eat grass
Walk on legs
Nose
Hair

Eat fish
Swims with fins
Blowhole
Blubber

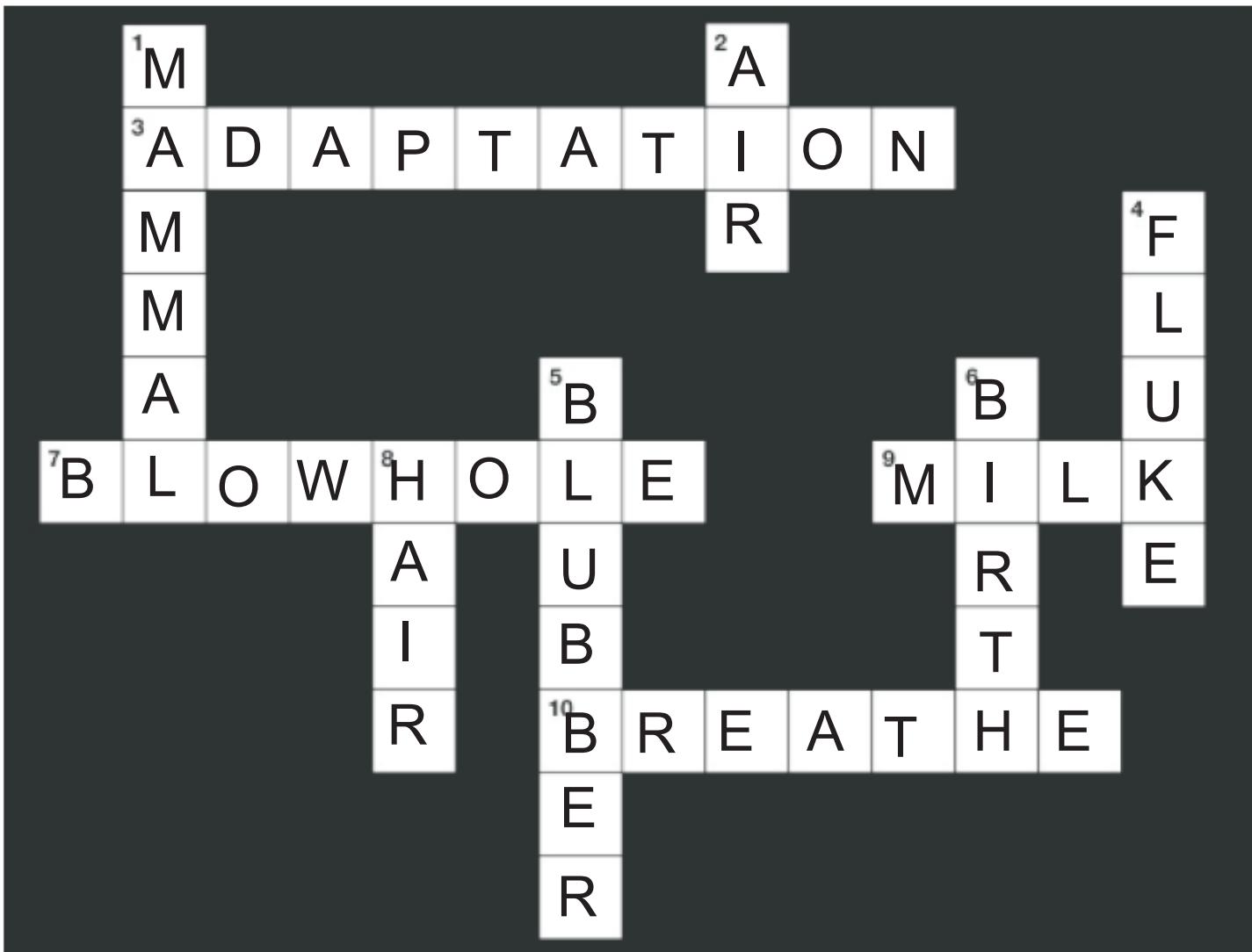
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