New England Aquarium

Protecting the blue planet

Blue Impact: Whales

Answer Key

DIRECTIONS

Answer the following questions while watching the New England Aquarium's **Blue Impact *Whales: Roadwork Ahead*** video. It is a good idea to read all the questions before you start the video. You may also need to pause or replay sections to help you answer the questions.

QUESTIONS

For question #1, pause the video at minute 1:30. Answer the question, then continue the movie.

1. One of the researchers spots a female whale from the plane. What are some possible reasons why the researchers observe the blood in the water, and the rolling and thrashing? Write your hypotheses below:

   Answers will vary. Some examples may be:

   - ***whale is injured***
   - ***whale is having a baby***
   - ***whale is eating***
   - ***whale is being eaten***

2. Right whales eat a very specific species of zooplankton called _____***b.***_____ .

   a. fish

   b. copepods

   c. calluses

   d. clams

3. This species of zooplankton is smaller than _____***a grain of rice***_____ .

4. How many times smaller is the zooplankton compared to the right whale?

   a. 50 times

   b. 50 million times

   c. 50 billion times

   d. 500 million times

5. Right whales eat a lot of copepods to give them energy for _____e._____ .

a. long migration

b. having a baby

c. swimming, eating and breathing

d. finding a mate

e. all of the above

6. Review your answers from question #1. Was one of your hypotheses correct?

Answers will vary.

7. What was happening to the whale?

The whale was giving birth to a calf. It was the first time anyone has recorded a right whale birth on camera.

8. How are ocean currents created?

a. wave motion

b. differences in water temperature

c. global winds

d. movement of animals

9. Use the bold words to complete the sentence below:

north **more dense** **warmer** **south** **conveyor**

Cold, salty water from the _____north_____ is _____more dense_____ and

glides under the _____warmer_____ water from the _____south_____ .

It's called the great ocean _____conveyor_____ .

10. Explain how a change in ocean temperature could disrupt the ocean conveyor.
Use words, pictures or both.

Water temperature differences actually create ocean currents. Cold, salty water from the north is more dense and glides under the warmer water from the south. The resulting motion is called the great ocean conveyor. A thicker "blanket" (more CO_2) in the atmosphere causes ocean water to warm. As a result, the cold water below also becomes warmer. Without the difference in temperature and density, the water does not move the same as it used to and thereby disrupts the ocean conveyor.

11. Why are whales not finding their food where they normally do?

A warmer ocean disrupts the conveyor and that means that copepods are no longer clustering where the whales expect to find them. The whales have to spend more time looking for food and eating less food.

12. What are some ways that we can help whales and the ocean conveyor?

Answers will vary. Look for explanations of reducing our carbon footprint (reducing the blanket will help prevent the oceans and atmosphere from warming). Have the students watch Blue Impact* Introduction *and* Thermal Expansion videos *for more details.