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 CO₂) 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.