

Be A Whale Researcher

Humpback whales have been studied intensively for over 25 years, yet surprisingly little is known about them. For example, a birth has never been witnessed, so we are not sure exactly where calves are born. The reason little is known about them is due to the difficulty in studying huge free-ranging animals who live in the ocean. Humpback whales are too large to be held in captivity and therefore cannot be studied for long periods at close range. Researchers must study humpbacks by observing them from shore or going out in boats. But observation is confined to daylight hours and the times when they are at or near the surface.

Researchers develop theories or hypotheses when attempting to interpret whale behaviors and then record observations to test their theories. For example, if a researcher theorized that male humpbacks were singing to attract females, then the researcher might try to find singing males and observe how females reacted. If in every observation, females approached singing males, this would serve as evidence in proof of the theory that singing attracts females.

Following are several questions about humpback whales and facts that may help to understand the answers. Researchers do not yet know the answers to these questions, but have offered theories about them. Divide your class into small groups and each group consider one of the questions. Develop as many theories to answer the question and design an experiment to test your theory.

1) Humpback whales migrate vast distances each year, for example from Alaska to Hawaii and back. How do they find their way from feeding waters to winter breeding and calving waters?

Additional Facts:

- a) Humpbacks have excellent hearing and can see both above and below water.
- b) Humpbacks are probably sensitive to water and temperature currents in the ocean.
- c) All humpbacks do not leave the feeding and breeding waters together.

2) How do humpback whales locate food?

Additional Facts:

- a) Generally the visibility of feeding waters is poor.
- b) Humpbacks have excellent hearing and can see both above and below water.
- c) Humpbacks can make sounds to communicate with other humpbacks.

3) What is the purpose of the song of the male humpback whale?

Additional Facts:

- a) Singing takes place only in the breeding season.
- b) Singers tend to spread out in the breeding waters.
- c) Females of other species often choose a mate with the best physical characteristics.
- d) All singers sing the same song.

Suggestions for theories to above questions (for teacher only):

1) (a) They use celestial navigation (sun, moon, and stars) (b) They use natural sounds coming from their destination (for example, the sound of seismic activity coming from the volcanoes of the Hawaiian chain.) (c) They are able to "map" their way by knowing ocean currents and temperature changes. (d) They follow the topography of the ocean floor.

2) (a) Prey makes sounds that humpbacks are able to hear. (b) They may be able to smell the prey. (c) Other humpbacks may communicate with them and let them know where food is. (d) At close range, they may be able to see the food.

3) (a) To attract females to males by the quality of their song compared to other singers. (b) To establish territories. (c) To scare away other males. (d) Singing allows males to display their physical capabilities, for example their ability to hold their breath.