

GUIDING READERS THROUGH NON-FICTION

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Compare and Contrast Animals: A Lesson plan

Lesson Objective

To turn an ordinary animal research project into a higher-level thinking project by using a compare and contrast approach.

Introduction

Many students have conducted research on animals and facts related to subjects such as appearance and habitat. Take students a step further in their thinking by having them do research on two animals and then compare and contrast their research findings. This project has students reading the content in a different manner.

Use the article on bats and whales (below) as a guided reading lesson and activating activity prior to students doing their own comparing-contrasting article.

For more lessons on non-fiction approaches to reading refer to *Guiding Readers Through Non-fiction (Portage & Main Press)*, by Tom Rossi & Dave Leochko.

BATS AND WHALES: COMPARE AND CONTRAST

Almost everyone instantly recognizes bats and whales and can explain how they are different from each other. However, if you were to do a more careful study, you would find that they are more alike than you first realized. Let's explore the two animals in a bit more detail.

Comparing

Both bats and whales are vertebrates. Both are mammals, and both are warm blooded. Like all mammals, they breathe air into their lungs, feed milk to their young, and have some hair (although whales have very little).

Sonar

Both bats and whales emit high-pitched sounds that bounce off objects. The animals listen to the echoes, also known as *sonar*, to locate prey, family members, and other objects. This process is called *echolocation*.

Migration

Many whales, especially baleen whales, migrate long distances from their cold-water feeding grounds to warm-water breeding grounds each year. They travel alone or in groups, or pods, on their annual migrations. Bats migrate to warmer areas in the winter or hibernate. Bats often roost in large groups. Their babies hang together to stay warm. They are very picky about their homes. They must roost high enough off the ground to avoid predators. They must also live in the right temperature to stay warm but not too hot. And they have to have food and water near by.

Did You Know?

- Bats are very clean animals and groom themselves almost all the time.
- Over 1000 species of bats are known. Most are so tiny that they could fit into the palm of your hand.
- Bats are sometimes called "flying rodents", "flying rats," or even mistaken for insects and birds.
- Bats help in pollination and food dispersal.
- Bats are not blind. Most have very good eyesight.
- Bats are the only mammals that can fly.
- Bats rest during the day. They can be found in some isolated place, hanging head down, sleeping or even quarreling. As night approaches, they fly about inside caves. At dark, they fly out of the caves in search of food.
- Different species of bats eat different kinds of food. Some bats consume moths, gnats, beetles, and crickets. Others eat pollen, nectar, and petals. Some species even eat small frogs, lizards, birds, and fish.

LifeCycle

Mother bats usually have only one offspring per year, and they are **viviparous** [*viv-vip-a-russ*] — they bear living young rather than eggs. A baby bat is referred to as a *pup*. The whale is also *viviparous*. Mother whales usually have one offspring each year, which is called a *calf*.

Lifespan

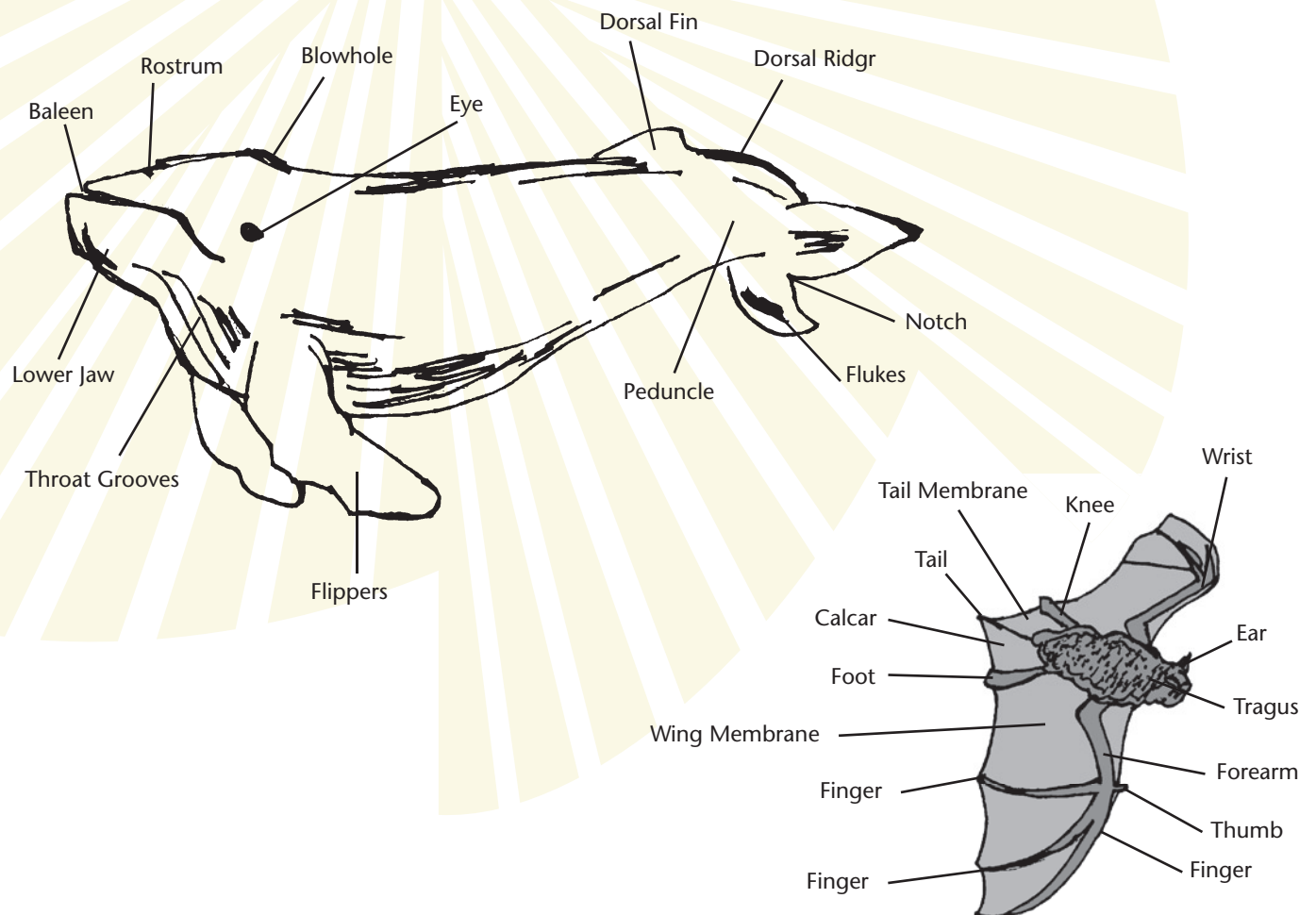
Most bats live longer than most mammals of their size. The longest known lifespan of a bat in the wild is 30 years for a little brown bat. Generally, whales live 20-40 years, but they have been known to live up to 80 years. It varies by species.

Threats

Whaling, the hunting of whales, is one of the biggest threats to whales. By the middle of the 20th century, whaling had left many populations severely depleted. The greatest threat to bats is people. Habitat destruction and fear of bats by humans are a lethal combination for bats. In some areas, people have even been known to set fires in caves, killing thousands of roosting bats.

The Weighty Whale!

The Blue Whale is the largest animal ever to have lived on the earth. At up to 90.7 tonnes, it easily out-weighs the heaviest dinosaurs that ever lived. Even an “ordinary” sized whale is a vast and impressive creature. The heart of a medium-sized baleen whale weighs 700 kilograms, the tongue about 2.72 tonnes, the fatty liver 0.9 tonnes and the 3 metres long stomach around 500 kilograms. A blue whale eats 5 tonnes of food daily.



COMPARE AND CONTRAST

When you compare two things you are explaining how they are similar. When you contrast two things you are explaining how they are different.

When you are reading to find out some comparisons and contrasts, certain words can help you locate the information. Here are lists of some compare and contrast words.

Compare Words

like
same as
similar
likewise
also
too
as does
both
each either/neither

Contrast Words

unlike
different from
less
more
whereas
but
instead
on the other hand
“er” words such as drier, hotter

COMPARE AND CONTRAST

Use the graphic organizer below to record details about your two subjects. Where the circles overlap, write how the subjects are the same. The outer parts of the circle are used to record differences.

Subject: _____

Subject: _____

