


ACTIVITY: Draw two life size deep-sea animals, a sperm whale and giant squid



GRADE LEVEL(s): K-12th

 varies (45-60+ minutes average)

OVERVIEW: Life-size drawings help students discover size, practice measuring skills, compare and contrast sizes, and, determine location of body parts based on fractions or measuring.

DISCIPLINES: Science, math, visual arts

OBJECTIVES: Students will be able to:

- draw a life-size sperm whale and giant squid
- compare and contrast sizes
- practice measuring skills using standard and/or metric measurements
- use math or hands-on techniques to convert traditional or nontraditional measurements
- create their own measuring tool to determine lengths and location of adaptations
- identify and discuss whale and giant squid adaptations and behaviors
- recognize that sperm whales are an important part of the Gulf of Mexico food web
- explain that sperm whales eat giant squid

LOCATION: Location: large sidewalk, playground, black top area, or large indoor space

MATERIALS: • Measuring tool(s) of your choice: measuring tape, rulers (other kids, paper clips...etc.)
• Sidewalk chalk or *painter's tape if indoors
(Optional) pencil, paper, graph paper, calculators

(*Check with custodian to be sure tape won't damage flooring.)

WHAT TO DO:

It's easy to say a giant squid is huge and a sperm whale enormous, but having them in your park, playground or cafeteria helps kids see just how large!

Preparation:

With some classes, it might be easier to pre-draw the animals. This can be done freehand with concern mostly of the body length and basic body parts. With older students, you might prefer to have them help measure and draw the whale.

How do you draw a whale or squid? First, determine where the head will be located. Mark that spot. Then with a tape measure (or pre-measured rope) measure out the length of the animal from head to tail (or top of mantle to tip of feeding tentacles). Mark that spot. Then fill in the rest either freehand or based on measurements provided in the "Measurement Keys."

How to use your life size whale and squid: There are many ways to use or expand on this activity. Kids can practice estimation, measuring skills, fractions, even graphing. Below are just a few ways to use your life-size ocean animals.

Who is longer? Of course comparing and contrasting the whale to the squid is an obvious beginning. Then you can compare sizes of students and the whale and squid. Have students carefully lie down head to feet and count how many kid it takes to equal one whale.

How many steps? Have students walk from head to tail counting the number of steps it takes.

Measure the whale or squid. Depending on the age, students can suggest size based on standard and/or metric units of length. Write down estimates. Then as a class, learning groups, or individuals, have students measure the whale's length. Discuss discoveries.

Measure the whale using nontraditional measuring tools. Have students compare and contrast a whale's length to everyday objects or even to the students. In addition to length, students can also compare body arm size to flipper, eyes to eye, feet to tail...etc.

For example, you might ask, *How many shoes long is a sperm whale?* Write down all students' guesses. Then as a class find out the answer.

Expand this activity by having student groups (or as individuals) use nontraditional measuring tools.

1. Have student groups choose a nontraditional measuring tool (paper clip, book, toy car...etc.)
2. Have each group estimate how many of that tool it would take to equal the length of a sperm whale and/or giant squid. Be sure and have them write down their guesstimates.
3. Have students measure the whale with their chosen nontraditional item. Depending on the age of the students, they can do this by physically moving the object and/or mathematically.
4. Have students share discoveries with the rest of the class.

Don't forget the language skills aspect of the activity. Encourage students to talk about measurements, size, think of multiple words for "large" or "long." Have students create and share a story about this whale and squid.

Recommended Videos:

"How the Colossal Squid Feeds" Museum of New Zealand Te Papa Tongarewa

In this animated video, watch a colossal squid hunt, move through the sea, and avoid being eaten by a sperm whale. (The colossal and giant squid feed in a similar fashion, so this will work for the activity.)

<http://squid.tepapa.govt.nz/anatomy/article/how-the-colossal-squid-feeds>

"(The perils of being a) Giant Squid Expert" Smithsonian National Museum of Natural History

In this short funny animated video Clyde Roper answers the question "What do giant squid like to eat?" Excellent for kids!

http://invertebrates.si.edu/giant_squid/page3.html

"How We Found the Giant Squid" Ted Talks: Edith Widder

Dr. Widder discusses and shows the footage) of how she and a science team captured the first ever footage of a free-swimming giant squid. (NOTE: One minor expletive within first minute or so. For kids, start video after that -- the talk and footage are well worth it.)

www.ted.com/talks/edith_widder_how_we_found_the_giant_squid?language=en

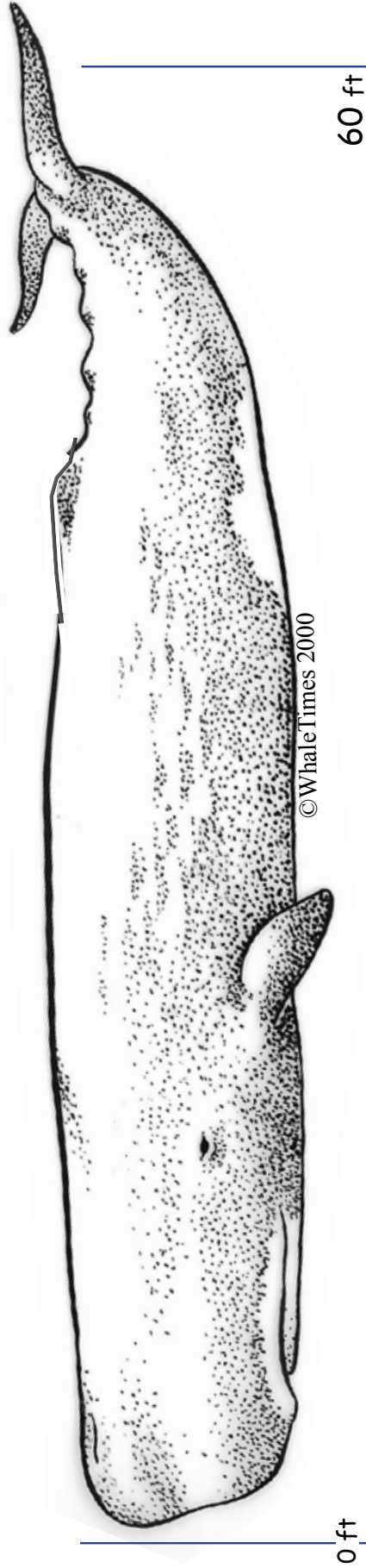
"Rare Sperm Whale Encounter with ROV"

A sperm whale checks out ROV in the Gulf of Mexico. Incredible footage!

<http://nautiluslive.org/video/2015/04/15/rare-sperm-whale-encounter-rov>

Chalk it Up to Deep-Sea Giants: Sperm Whales

Sperm Whale Measurement Key



Draw a life-sized sperm whale. Just as people vary in sizes, so do whales. This is a fun general guide to help you create a sidewalk chalk whale. We've used the "tip of mouth" ("0 ft") as the starter point to find location of adaptations.

Size	Males reach lengths up to 52 to 60 feet (16 to 18 m). Females reach lengths up to 36 (11 m). Females weigh up to 33,000 pounds (15,000 kg); males weigh up to 100,000 to 125,000 pounds (45,000 - 57,000 kg)
Head	A sperm whale's head is 25- to 30-percent of its entire length
Eyes	Eyes located on either side of head. The eye is an ellipsoid shape (sort of a flattened sphere). The dimensions are about 2.8 in. x 2.8 in. x 1.1 in. (7 cm x 7 cm x 3 cm). Each eye weighs about 1/3 of a pound (170 g)
Blowhole	Like all toothed whales, a sperm whale has one blowhole. Unlike most whales, the blowhole is off-center (to the left) and close to front tip of the whale's head. It is shaped like an the letter "S."
Flippers	Like all whales, it has two pectoral flippers. On an adult, the flipper is about 6 feet (1.8 m) long and about 3 feet (1 m) wide.
Dorsal hump	It has dorsal humps which start about two-thirds of the way back on the body (or 1/3 of the length from the tail).
Tail	13 to 16 feet (4 to 4.9 m) wide from tip to tip. Each fluke (side of the tail) is broad and flat. Some describe the fluke shape as similar to a gingko-leaf.

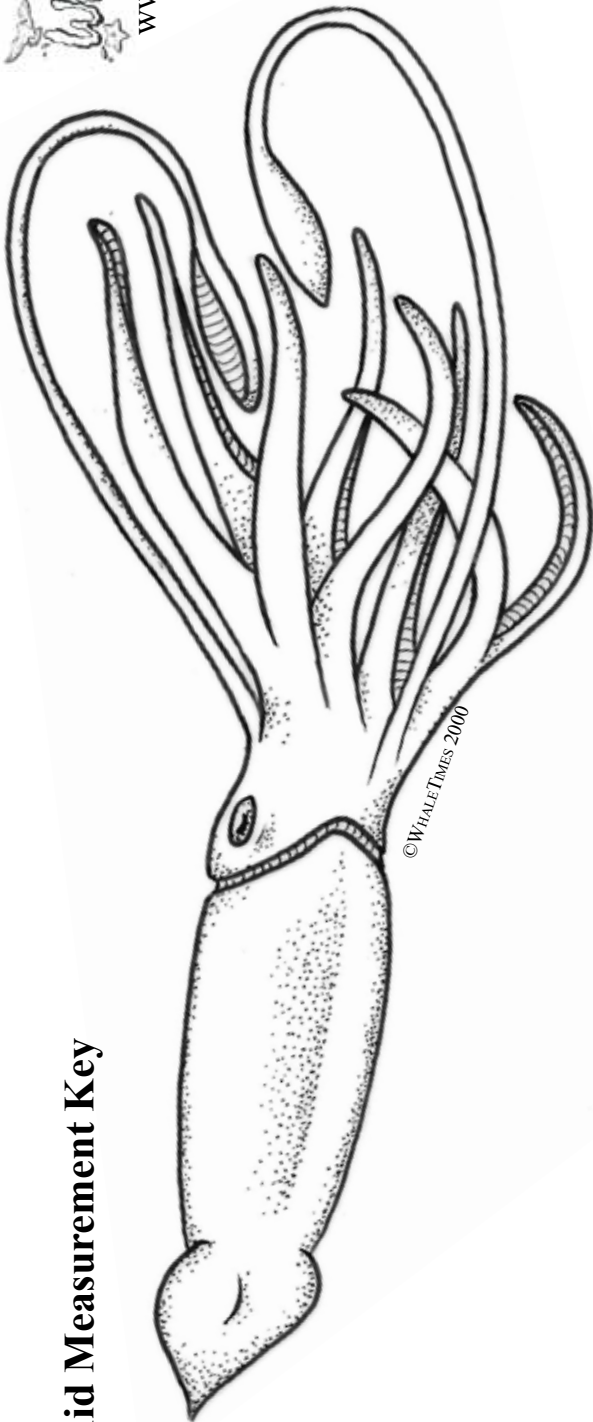
OTHER ADAPTATIONS

Blow	The blow (the "steamy" visible breath when the whale exhales air) shoots 16 feet (5 m) into the air. Since the blowhole is off-center, the blow isn't straight in the air, but off to an angle.
Teeth	18 to 26 pairs of teeth in the lower jaw. The teeth are 8 inches (20 cm) long, 4 inches (10 cm) in diameter

Creep into the DEEPEND
WhaleTimes Virtual Team Member Activity

Chalk it Up to Deep-Sea Giants: Squid

Giant Squid Measurement Key



Draw a life-sized giant squid. Just as people vary in sizes, so do giant squid. There seems to be many unconfirmed “fish tales” when it comes to the size of giant squid. Only a few hundred giant squid have been found since 1873! Another reason length is disputed is because of the “stretchy” nature of the feeding tentacles, which adds a challenge to measuring the animal. The feeding tentacles can double the length of the squid. This is a fun general guide to help you create a sidewalk chalk squid

Size	The longest squid measured was 43 feet (13 meters) in total length, mantle and feeding tentacles. Many scientists seem to indicate this is an extreme size and most giant squid are smaller -- maybe about 30 feet long. More research will reveal the true length and natural history of this fascinating squid.
Arms	A squid has 8 arms, as long as 9.8 feet (3 m)
Tentacles	A squid has 2 feeding tentacles reaching 33 to 40 feet (10-12 m) long
Suckers	A giant squid has hundreds of suckers on its arms and feeding tentacles. They range in size from 0.79-1.97 inches (2-5 cm) in diameter.
Eyes	A giant squid’s eye can be 1 foot (30 cm) in diameter. That’s as big as a basketball. It uses its giant eyes to see movement, bioluminescent prey, and maybe bioluminescence churned up by predators or prey moving through the water bumping into tiny plankton and critters causing them to flicker or glow.