

Chalk it up to Gray Whales

ACTIVITY: Draw a life size gray whale and calf



GRADE LEVEL(S): K-12th



varies (45-60+ minutes average)

OVERVIEW: A lifesize mother and calf helps 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 gray whale
- Compare and contrast sizes
- Recognize standard and/or metric measurements of length
- Practice measuring skills
- 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 adaptations

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 gray whale is huge, but having one on your playground or in your cafeteria helps kids see just how large!

Background: A large female gray whale is 45 feet (13.7 m) long and can weigh up to 70,000 pounds (32,000 kg). A male is slightly smaller, about 40 feet (12 m). A gray whale is 10 times longer than a 5th grader. It's tail is 9 to 10 feet wide, that's more than twice as wide as a 5th grader's arm-span!

Teacher Prep:

With some classes, it might be easier to pre-draw the whale. 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? First, determine where the head will be located. Mark that spot. Then with a tape measure (or pre-measured rope) measure out 45 feet to the tail. Mark that spot. Then fill in the rest either freehand or based on measurements provided in the "Gray Whale Measurement Key."

How to use your life size whale: 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 lifesize whale.

Who is longer? It is always fun to compare sizes of students and the whale. 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. 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 gray 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.

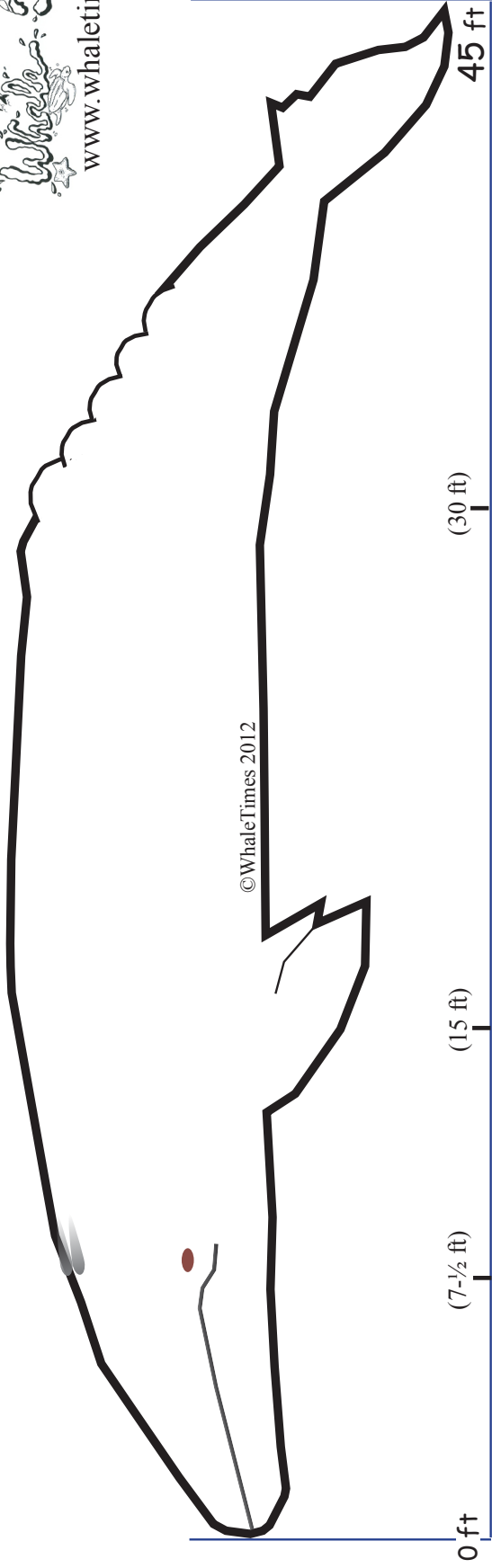
1. Have student groups choose a nontraditional measuring tool (paper clip, book, toy car...etc.)
2. Have each group estimate how many of that tool it would take to equal the length of a gray whale. Be sure and have them write down their guesstimates.
3. Have students measure the whale with their chosen 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.

Questions you might ask students to start activity: *How big is a gray whale? Would it fit in this room? In the cafeteria? On a school bus? How many of you would it take to be as long as a gray whale? Are you longer or shorter than its flipper?*

Chalk it Up to Whales

Gray Whale Measurement Key



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

Eyes	6 to 8 feet (1.8 to 2.4 m) or 1/6 of the way back on the body. Eyes are located on either side of head. They are brown and about the size of an orange or baseball.
Blowholes	6 to 8 feet (1.8 to 2.4 m) or 1/6 of the way back on the body. The two side-by-side blowholes (nostrils) are on top of the head. They're about 8 inches (20 centimeters) long.
Flippers	8 to 10 feet (2.4 to 3 m) or almost 1/4 of the way back on the body. The paddle shaped flippers are about four to five feet (1.2 to 1.5 m) long.
Dorsal hump & Knuckles	About 30 ft (9 m) or 2/3 of the way back on the body. The dorsal hump is followed by 6-12 knuckles along the dorsal ridge that extend to the fluke (tail)
Tail	9 to 12 ft wide (from tip to tip).
OTHER ADAPTATIONS	
Blow	The gray whale blow (exhaled breath) is 6 to 10 feet high and is heart-shaped (if seen when the whale is directly facing you.)
Baleen	Plates are about 2-10 inch long. (130-180 plates). Baleen hangs inside the mouth from either side of the upper jaw.
Throat Grooves	A gray whale has 2 to 5 throat (or ventral) grooves. Grooves are 5 feet (1.5 m) in length.