



Rostrum to fluke- How many students make a whale

Orca Scientists,

Killer Whales are big. But in fact they are not a whale at all, they are world's biggest dolphin. But how big are they really? We usually get a good view of their dorsal fin when they come up to breathe, but unless they breach it is often hard to appreciate how big they actually are. In the following math exercise we will see how many of us it takes to make up one of them!

Supplies: Paper and Pencil
Tape Measure (at least 30' in length)
Bathroom Scale

Preparation: Have the students hypothesize, (discuss the scientific method), how big orcas are, both in weight and length. Record their guesses on the chalkboard.

Hands on: This activity works well with large group (10 or more), especially the whole class.

Orca weight: Have each student weigh themselves and record their individual weights. Using the figures on the back, methodically add the students own weight together, one at a time, until their collective weight equals that of the whales listed below. You may find yourself going through the class roster more than once!

How many students does it take to equal a calf? a grown female? a bull?

Were their hypothesis' correct?

Orca length: This exercise works by either measuring each others height individually and adding them together like the exercise above or; Break the class into 3 even groups and using the figures below, take the long tape measure and measure out how long the orca is on the wall, floor, in the hallway, wherever you have a wide open space. Then have the students line up or lay down and see how many of them it takes to equal the length of a killer whale. If you want to compare them to other whales, use the additional figures to measure out some other cetacean species.

Additional Exploration: Discuss why whales are the sizes they are. What benefit do they derive from their size and weights? Discuss how the relative absence of gravity in the bouyant salt water allows animals to grow so large? Why in some species is the female bigger? How do they compare to us?



Rostrum to fluke- Whale Statistics

Weight*

Length*

Killer Whales

Males	11,000 lbs.	up to 30 feet
Females	8,000 lbs.	up to 25 feet
Calves	800 lbs	8-9 feet

Minke Whales

Males	12,000-20,000 lbs.	26-31 feet
Females	12,000-20,000 lbs.	27-33 feet
Calves	1,000 lbs.	10 feet

Grey Whales

Males	48,000 lbs.	40-50 feet
Females	68,000 lbs.	42-50 feet
Calves	3,000 lbs.	15 feet

Sperm Whales

Males	up to 80,000 lbs.	up to 50 feet
Females	up to 44,000 lbs.	up to 36 feet
Calves	up to 2,000 lbs.	13 feet

* all figures taken from "Whales of the World" by Lyall Watson