Sea otters often swim on their backs on the water's surface.

The average length of a sea otter is 4 feet. The length and width of a pool for just 1 sea otter must be at least 3 times the sea otter's length. The pool must be at least 3 feet (about 1 m) deep. To fill this pool, 3,231 gallons (12,230 L) of water is needed. How was this amount calculated?

LET'S EXPLORE MATH

Draw a rectangular prism to represent a tank to hold 1 sea otter. Now use the information you read above about sea otters to do the following:

a. Label the height (depth) of the tank.

b. Use the length of the sea otter to figure out the tank's length and width.

c. Figure out the volume of the tank.

How Much Water Is That?

An Olympic size swimming pool holds over 640,000 gallons (2.4 million L) of water.

The sea otter enclosure at the Monterey Bay Aquarium in California holds 55,000 gallons (208,198 L) of water. There are 4 otters living there. All the sea otters were rescued from the wild. Visitors learn about how sea otters live in the wild by watching them at the aquarium.

A sea otter enclosure

Both the width and length of a pool for just 1 seal must be at least 9 feet (2.7 m). That's about 1½ times the length of an average adult seal. The depth of the pool must be at least 3 feet (about 1 m).

The volume of a pool this size is 243 cubic feet (6.8 m^3). It will take 1,818 gallons (6,882 L) of water to fill this pool.

A harbor seal enjoying the warm sun

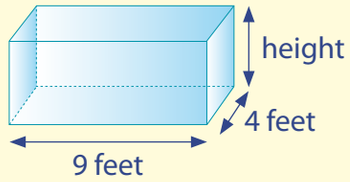
An aquarium worker with a beluga whale at Vancouver Aquarium

The Vancouver Aquarium in Canada has 166 displays. These displays hold a total of 2.5 million gallons (9.5 million L) of water. The aquarium is home to 4 beluga whales.

LET'S EXPLORE MATH

When you know the volume, the length, and the width of a tank, you can figure out its height. The formula to use is: Volume ÷ (length x width) = height.

The volume of the tank below is 72 $ft.^3$ Figure out the height (depth) of the tank using the formula below and information in the diagram. *Hint*: Solve the part of the equation in the parentheses first.



$$\underset{\text{Volume}}{\_\_\_\_} \div (\underset{\text{length}}{\_\_\_\_} \times \underset{\text{width}}{\_\_\_\_}) = \underset{\text{height}}{\_\_\_\_}$$