

Design a Fish Tank

Your school wants to install several fish tanks in the office area. Your class has been asked to design the fish tanks and choose which fish to buy.

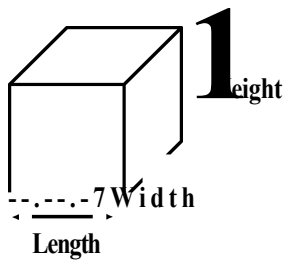
1 One tank the office considered purchasing held a total of 8 cubic feet of water.

a What would be the dimensions of the tank be if the shape was a cube?

b What other dimensions could the tank be if it didn't have to be a cube?

c How many cubic inches would that tank hold?

2 The table that follows represents the dimensions and area of a fish tank for just one fish (without rocks and plants). If each fish needs 1 cubic unit with the dimensions of $\frac{1}{2}$ of a foot for the length, width and height of water to live in, what is the total volume in feet? Inches?



| Number of Fish | Volume of Water | Total Volume |
|----------------|---|------------------------|
| 1 | $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ | _____ ft. ³ |
| 1 | -- X -- X -- X | _____ in. ³ |

3 If one small fish needs $\frac{1}{2}$ cubic feet of water to live in, what is the maximum number of small fish that would fit in 1 cubic foot of water? How do you know?