

BLM 7 – *What is Ratio?*

Ratio is a way of comparing amounts of something. It shows how much bigger one thing is than another. A ratio can be used to describe the number of parts to a mix. For example, a 2-stroke boat motor uses mixed fuel in which the specified mix is 51 parts, with 50 parts gas and 1 part oil. The ratio of gas to oil is 50:1. This means for every 50 measures of gas there is 1 measure of oil or $50 + 1 = 51$ parts in all. No matter how much total fuel you need, the mix must remain the same. The ratio must be maintained, and the order in which this (or any) ratio is stated is important.

To maintain a constant ratio, the amounts of gas and oil need to increase in direct proportion to each other. This means you must multiply both amounts by the same value. Create a table of values to show how much gas and oil is needed for a series of amounts.

Gas (L)	Oil (L)
100	2
75	
	6

Simplifying ratios

To make ratios easier to compare and use, we can often make the numbers in ratios smaller. You do this by dividing each side of the ratio by the same number, the highest common factor. This is called **simplifying**. For example, suppose the ratio of female to male members in a class is 12:18. Both 12 and 18 can be divided by 2:

$$12 \div 2 = 6$$

$$18 \div 2 = 9$$

So, a simpler way of saying 12:18 is 6:9.

This ratio can be made simpler again, since we can divide both 6 and 9 by 3:

$$6 \div 3 = 2$$

$$9 \div 3 = 3$$

So, a simplest way of saying 12:18 is **2:3**. These are all **equivalent ratios**, they are in the same proportion. All these ratios mean that for every 2 female members in the class there are 3 males:

$$12:18 \rightarrow 6:9 \rightarrow 2:3$$

2:3 is easier to understand than 12:18!

Be careful! When working with ratios **keep both the words and the numbers in the same order** as they are given.