

## Mixing Lemonade

•	<u>A</u>	<u>B</u>
	L 200	L 100
	W 300	W 200
	<u>T 500</u>	<u>T 300</u>

$$A - B = \frac{200}{500} - \frac{100}{300} = \frac{2}{5} - \frac{1}{3} = \frac{6}{15} - \frac{5}{15} = \frac{1}{15}$$

$\frac{1}{15} > 0$  Therefore A is the stronger tasting lemonade.

## Interactivity

Beaker A      Beaker B

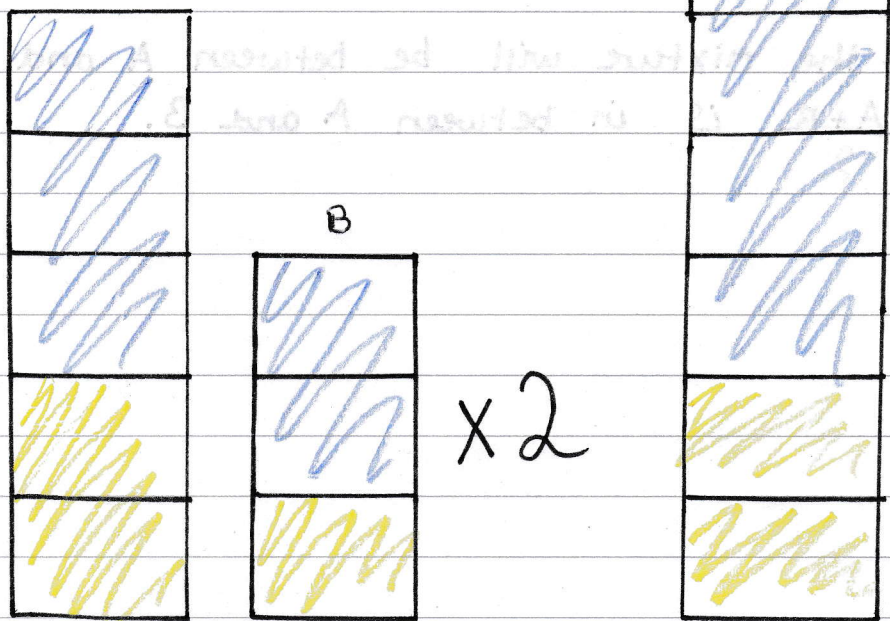
L 10	L 10
W 150	W 100
T 160	T 110

$$A - B = \frac{10}{160} - \frac{10}{110} = \frac{110}{1760} - \frac{160}{1760} = \frac{-50}{1760}$$

$\frac{-5}{176} < 0$  Therefore Beaker B is the stronger tasting lemonade.

• Subtract lemonade ratio B from lemonade ratio A. If the result is greater than (0), A is the stronger tasting lemonade.

● Using Graphical Approach



● ~~Subtract~~ Multiply B by 2. Then A and B will have the same amount of lemon. But B has more amount of water. Therefore, A is the stronger tasting lemonade.

● But it's not always easy to use graphical approach as it is hard to always equate either lemon or water ratios by using graphics. For simple ratios, it is meaningful to use graphics. But fraction method can be used for all ratios.

● Mixing

$$C = A + B \rightarrow \begin{array}{l} L = 300 \\ W = 500 \\ T = 800 \end{array} \quad F \frac{L}{T} = \frac{300}{800} \quad A > C > B$$

$$F = D + E \rightarrow \begin{array}{l} L = 20 \\ W = 250 \\ T = 270 \end{array} \quad F = \frac{L}{T} = \frac{20}{270} \quad D < F < E$$

The lemon ratio of the mixture will be between A and B.  
 If  $A > B$  then,  $\frac{A+B}{2}$  is in between A and B.

$$C = A+B \rightarrow \begin{matrix} L = 300 \\ W = 200 \\ T = 800 \end{matrix} \quad F = \frac{L}{T} = \frac{300}{800} \quad A \times C \times B$$

$$E = D+E \rightarrow \begin{matrix} L = 300 \\ W = 800 \\ T = 800 \end{matrix} \quad F = \frac{L}{T} = \frac{300}{800} \quad D \times E \times F$$