



INVESTIGATION



Three Make One

$$\frac{1}{2} = \frac{3}{20} + \frac{5}{20} + \frac{2}{20}$$

MathSphere

Three Make One

Here is a puzzle for you:

Can you find three fractions that add up to $\frac{1}{4}$?

Would you like a clue?

I thought you might!

Okay. Think about equivalent fractions.

Write down some equivalent fractions to $\frac{1}{4}$

Now can you find three fractions that add up to a quarter?

Other ideas:

When you have cracked the problem above, you could try some of these:

1. Find two or four or five fractions that add up to a quarter.
2. Find fractions that add up to another fraction such as one seventh or three tenths.
3. Change the fractions to decimals and use a calculator to solve the problem. Then you could try more difficult fractions such as $\frac{7}{32}$.
4. Can you draw diagrams to show your results?

Answer Guide

This is the simpler of two investigations about dividing fractions into component fractions. The harder (entitled 'Many Make One') includes an element of algebra.

In order to make progress with this investigation, children need to know how to manipulate equivalent fractions and, later on, how to convert fractions to decimals (by dividing the numerator by the denominator).

They may need some guidance in how best to choose the number by which they should multiply the numerator and denominator (finding) so that the fraction can be split as desired.