MEI®
Mathematics Education Innovation

Half Way There!

CALCULATOR CRUNCH

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Choose four numbers from 1 to 9:

1 2 3 4 5 6 7 8 9

Place them in the boxes to make a fraction.

Which arrangement of your four numbers gives a value closest to a half?

The four numbers I chose were:
This arrangement is closest to a half:

To get close to a half you need to:

Aim of the game
You are trying to make fractions which are as close to a half as possible.

How to play
Divide a sheet of paper into nine pieces and write the digits 1 to 9 on the pieces. (You could use ace to 9 from a pack of playing cards)

Choose 4 of the cards.

Use the 4 cards to make two 2-digit numbers.

Make a fraction using one number as the numerator (top number) and the other one as the denominator (bottom number).

You could put them in the fraction template

How will you know if the fraction is close to a half?

Top Tip
In all fractions equal to a half, the numerator (top number) is half the value of the denominator (bottom number) e.g. $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{15}{30}$ etc.

How can you use a calculator to check that the fraction is close to a half?

Fractions are divisions so if you divide the numerator (top number) by the denominator (bottom number), the answer will be that fraction as a decimal.

Try it with $\frac{1}{2} = 1 \div 2 = 0.5$

0.5 is a half as a decimal so you are trying to get as close to 0.5 as the answer to your division.

For example, with the cards 1, 4, 7 and 9 you could make $\frac{47}{91}$ and $\frac{19}{47}$.

$47 \div 91 = 0.516$ and $\frac{19}{47}$ and $19 \div 47 = 0.404$ (the decimals are rounded to three decimal places).

We can either subtract 0.5 or take a smaller amount away from 0.5 to work out how close the fraction is to half.

$0.516 – 0.5 = 0.016$ and $0.5 – 0.404 = 0.096$ away from 0.5 so $\frac{47}{91}$ is closer to a half.

What else could you do?

You could try making fractions close to $\frac{1}{4}$ or $\frac{1}{10}$

How close can you get to a fraction which equals 1 whole?