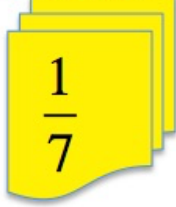# DIVIDE DIVIDE

Fractions, decimals and percentages are three different ways of writing the same number and it is important that we can convert one form into another.

Divide 2 by 11 to get the decimal fraction equivalent to the common fraction two elevenths $\frac{2}{11}$. Carry on dividing until you see a pattern.

Will this pattern continue? Why or why not?

Now use the same method of dividing the numerator by the denominator to find the recurring decimals for all the fractions with 11 as denominator $\frac{1}{11}$, $\frac{3}{11}$, $\frac{4}{11}$, $\frac{5}{11}$, $\frac{6}{11}$, $\frac{7}{11}$, $\frac{8}{11}$, $\frac{9}{11}$ and $\frac{10}{11}$.

Do you see a pattern? Can you explain why this pattern occurs?

Divide 1 by 4, then divide 2 by 4 and then divide 3 by 4 to get the decimal fractions involving quarters.

Then divide 1 by 5, then divide 2 by 5, then divide 3 by 5 and then divide 4 by 5 to get the decimal fractions involving fifths.

What is the different about these decimals from the decimals involving elevenths?

Divide 1 by 7 to get the decimal fraction equivalent to the common fraction $\frac{1}{7}$.

Carry on dividing until you get 8 places of decimals.

Do you see a pattern? Will this pattern continue? Why or why not?

Now do the same to find the recurring decimals for $\frac{2}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{5}{7}$ and $\frac{6}{7}$.

Do you see a pattern? Can you explain why this pattern occurs?

HELP

Think about sharing something with two friends so you get equal shares. You must divide by 3.

The decimal fraction for one third $\frac{1}{3}$ is 0.33333333…

What do you notice about this decimal fraction?

Before starting to divide by 11 and by 7 learners you could write out the multiples of 11:
11, 22, 33, 44, 55, 66, 77, 88, 99 … and the multiples of 7:
7, 14, 21, 28, 35, 42, 49, 56, 63, 70,…
Refer to these lists of multiples as you do the divisions.

NEXT

Investigate the decimal for $\frac{4}{33}$

What is 0.7777… as a fraction?
See https://aiminghigh.aimssec.ac.za/years-7-10-repetition/