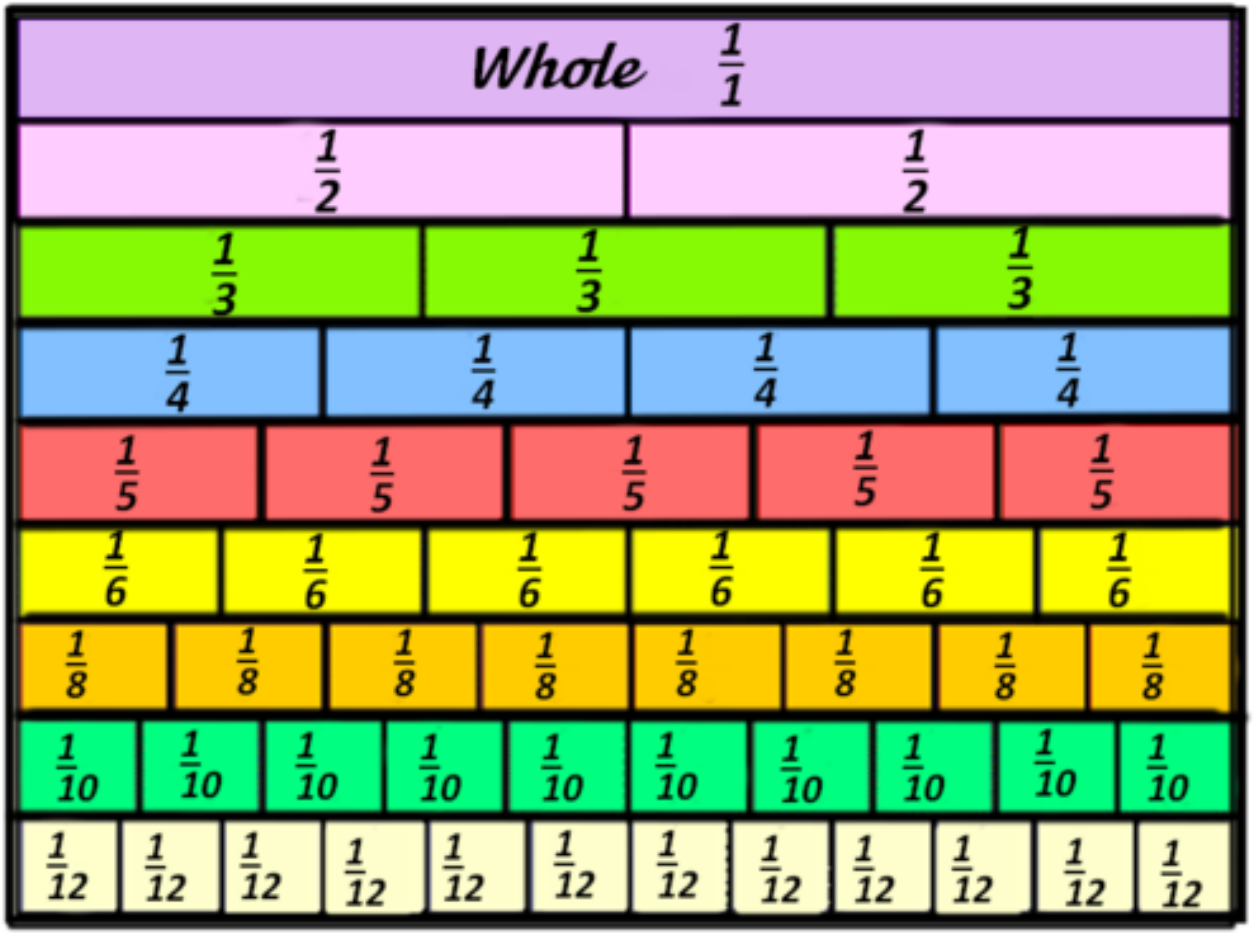
Maths

Hope you are all well. As we don’t know when we will be back at school it is important to a little in Maths every day. I’ll try to help as much as I can. Do the Power Points in order. This is Power Point 1

Fractions


Whole $\frac{1}{1}$
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Equivalent fractions

- Fractions that have the same value are called equivalent fractions.

- Example: If you look at the fraction wall you will see

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$$

Use the Fraction Wall

- Using your fraction wall write the following equivalent fractions.

- $\frac{2}{3} = \frac{\quad}{6}$ $\quad \frac{4}{5} = \frac{8}{\quad}$ $\quad \frac{\quad}{12} = \frac{3}{4}$ $\quad \frac{4}{8} = \frac{1}{\quad}$

- $\frac{3}{6} = \frac{2}{\quad}$ $\quad \frac{8}{12} = \frac{\quad}{6}$ $\quad \frac{4}{5} = \frac{8}{\quad}$ $\quad \frac{\quad}{6} = \frac{1}{3}$

To work out equivalent fractions

- You won't always be able to use a fraction wall for equivalent fractions – you also need to be able to work them out.

- If you x or ÷ the top and bottom of your fraction by the same number you will get an equivalent fraction

- **'What you do to the top you do to the bottom'**

- $\frac{4}{5} = \frac{8}{10}$ $(x\ by\ 2)$ $\frac{3}{4} = \frac{9}{12}$ $(x\ by\ 3)$

- $\frac{10}{15} = \frac{2}{3}$ $(\div\ by\ 5)$ $\frac{6}{8} = \frac{3}{4}$ $(\div\ by\ 2)$

Write the equivalent fractions in your copy

- $\frac{2}{3} = \frac{4}{\quad}$ $\frac{1}{2} = \frac{10}{\quad}$ $\frac{3}{5} = \frac{6}{\quad}$ $\frac{3}{9} = \frac{1}{\quad}$

- $\frac{5}{6} = \frac{\quad}{18}$ $\frac{5}{15} = \frac{\quad}{3}$ $\frac{8}{12} = \frac{2}{\quad}$ $\frac{4}{14} = \frac{\quad}{7}$

- $\frac{15}{20} = \frac{3}{\quad}$ $\frac{7}{10} = \frac{\quad}{20}$ $\frac{3}{8} = \frac{\quad}{16}$ $\frac{1}{5} = \frac{3}{\quad}$

- $\frac{\quad}{9} = \frac{2}{3}$ $\frac{3}{10} = \frac{6}{\quad}$ $\frac{\quad}{5} = \frac{4}{10}$ $\frac{3}{7} = \frac{6}{\quad} =$

Now check your answers

- $\frac{2}{3} = \frac{4}{6}$ $\frac{1}{2} = \frac{10}{20}$ $\frac{3}{5} = \frac{6}{10}$ $\frac{3}{9} = \frac{1}{3}$
- $\frac{5}{6} = \frac{15}{18}$ $\frac{5}{15} = \frac{1}{3}$ $\frac{8}{12} = \frac{2}{3}$ $\frac{4}{14} = \frac{2}{7}$
- $\frac{15}{20} = \frac{3}{4}$ $\frac{7}{10} = \frac{14}{20}$ $\frac{3}{8} = \frac{6}{16}$ $\frac{1}{5} = \frac{3}{15}$
- $\frac{6}{9} = \frac{2}{3}$ $\frac{3}{10} = \frac{6}{20}$ $\frac{2}{5} = \frac{4}{10}$ $\frac{3}{7} = \frac{6}{14}$

Finding a fraction of a number

To find a fraction of a number ÷ by the number on the bottom (denominator).

Multiply your answer by the number on the top. (numerator)

e.g. find $\frac{2}{3}\ of\ 24$

24 ÷ 3 = 8

8 x 2 = 16

Work out the following

- $\frac{1}{2}\ of\ 16$ $\frac{3}{4} of\ 16$ $\frac{2}{3} of\ 27$
- $\frac{1}{5}\ of\ 60$ $\frac{3}{5}\ of\ 100$ $\frac{3}{8} of\ 40$
- $\frac{5}{6}\ of\ 300$ $\frac{3}{4}\ of\ 124$ $\frac{2}{7}\ of\ 147$
- $\frac{4}{5}\ of\ 225$ $\frac{2}{11}\ of\ 220$ $\frac{3}{8}\ of\ 1{,}624$

Now check your answers

- $\frac{1}{2}\ of\ 16 = 8$ $\frac{3}{4} of\ 16 = 12$ $\frac{2}{3} of\ 27 = 18$
- $\frac{1}{5}\ of\ 60 = 12$ $\frac{3}{5}\ of\ 100 = 60$ $\frac{3}{8} of\ 40 = 15$
- $\frac{5}{6}\ of\ 300 = 250$ $\frac{3}{4}\ of\ 124 = 93$ $\frac{2}{7}\ of\ 147 = 42$
- $\frac{4}{5}\ of\ 225 = 180$ $\frac{2}{11}\ of\ 220 = 40$ $\frac{3}{8}\ of\ 1{,}624 = 609$

Improper Fractions

- Reminder - the number on top is the numerator while the number on the bottom is the denominator.
- $\frac{2}{3} = \frac{numerator}{denominator}$ (This is Proper fraction)
- $\frac{16}{9}$ (An improper fraction – the numerator is bigger)
- $1\frac{7}{9}$ (A mixed number – a whole number and a fraction)

More improper fractions

- Write as a mixed number $\frac{7}{4}$
- $\frac{7}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
- Every group of $\frac{4}{4}$ makes a whole
- $\frac{7}{4} = 1\frac{3}{4}$

Write these as mixed numbers

- $\frac{3}{2} =$ $\frac{7}{4} =$ $\frac{10}{3} =$ $\frac{5}{2} =$
- $\frac{11}{5} =$ $\frac{14}{6} =$ $\frac{9}{7} =$ $\frac{9}{6} =$
- $\frac{22}{10} =$ $\frac{20}{8} =$ $\frac{24}{11} =$ $\frac{15}{9} =$
- $\frac{21}{9} =$ $\frac{25}{6} =$ $\frac{28}{12} =$ $\frac{15}{9} =$

Now check your answers

- $\frac{3}{2} = 1\frac{1}{2}$ $\frac{7}{4} = 1\frac{3}{4}$ $\frac{10}{3} = 3\frac{1}{3}$ $\frac{5}{2} = 2\frac{1}{2}$
- $\frac{11}{5} = 2\frac{1}{5}$ $\frac{14}{6} = 2\frac{2}{6}$ $\frac{9}{7} = 1\frac{2}{7}$ $\frac{9}{6} = 1\frac{3}{6}$
- $\frac{22}{10} = 2\frac{2}{10}$ $\frac{20}{8} = 2\frac{4}{8}$ $\frac{24}{11} = 2\frac{2}{11}$ $\frac{15}{9} = 1\frac{6}{9}$
- $\frac{21}{9} = 2\frac{3}{9}$ $\frac{25}{6} = 4\frac{1}{6}$ $\frac{28}{12} = 2\frac{4}{12}$ $\frac{15}{7} = 2\frac{1}{7}$

Write as improper fractions

- $1\frac{1}{2} =$ $2\frac{1}{3} =$ $3\frac{1}{4} =$ $1\frac{6}{7} =$
- $3\frac{3}{8} =$ $2\frac{4}{9} =$ $2\frac{4}{11} =$ $3\frac{3}{10} =$
- $4\frac{4}{12} =$ $3\frac{5}{6} =$ $2\frac{2}{5} =$ $2\frac{4}{9} =$
- $4\frac{7}{12} =$ $6\frac{2}{3} =$ $1\frac{3}{4} =$ $4\frac{5}{6} =$

Now check your answers

- $1\frac{1}{2} = \frac{3}{2}$ $2\frac{1}{3} = \frac{7}{3}$ $3\frac{1}{4} = \frac{13}{4}$ $1\frac{6}{7} = \frac{13}{7}$
- $3\frac{3}{8} = \frac{27}{8}$ $2\frac{4}{9} = \frac{22}{9}$ $2\frac{4}{11} = \frac{26}{11}$ $3\frac{3}{10} = \frac{33}{10}$
- $4\frac{4}{12} = \frac{52}{12}$ $3\frac{5}{6} = \frac{23}{6}$ $2\frac{2}{5} = \frac{12}{5}$ $2\frac{4}{9} = \frac{22}{9}$
- $4\frac{7}{12} = \frac{55}{12}$ $6\frac{2}{3} = \frac{20}{3}$ $1\frac{3}{4} = \frac{7}{3}$ $4\frac{5}{6} = \frac{29}{6}$

Tidying fractions

- Look back at the fraction wall in the beginning
- You will see that $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$
- All of these are equivalent fractions but $\frac{1}{2}$ is the tidiest fraction or 'lowest term'
- We tidy fractions by ÷ top and bottom by the same number.
- $\frac{8}{12}$ $(\div by\ 4)$ = $\frac{2}{3}$ $\qquad$ $\frac{15}{20} \div by\ 5 = \frac{3}{4}$
- You might need to ÷ more than once to get the lowest term

Tidy the following fractions

- $\frac{10}{12} =$ $\frac{6}{8} =$ $\frac{3}{9} =$ $\frac{10}{15} =$
- $\frac{12}{18} =$ $\frac{4}{12} =$ $\frac{8}{16} =$ $\frac{7}{21} =$
- $\frac{20}{30} =$ $\frac{15}{25} =$ $\frac{25}{30} =$ $\frac{12}{16} =$
- $\frac{18}{27} =$ $\frac{9}{18} =$ $\frac{14}{18} =$ $\frac{16}{24} =$

Now check your answers

- $\frac{10}{12} = \frac{5}{6}$ $\frac{6}{8} = \frac{3}{4}$ $\frac{3}{9} = \frac{1}{3}$ $\frac{10}{15} = \frac{2}{3}$
- $\frac{12}{18} = \frac{2}{3}$ $\frac{4}{12} = \frac{1}{3}$ $\frac{8}{16} = \frac{1}{2}$ $\frac{7}{21} = \frac{1}{3}$
- $\frac{20}{30} = \frac{2}{3}$ $\frac{15}{25} = \frac{3}{5}$ $\frac{25}{30} = \frac{5}{6}$ $\frac{12}{16} = \frac{3}{4}$
- $\frac{18}{27} = \frac{2}{3}$ $\frac{9}{18} = \frac{1}{2}$ $\frac{14}{18} = \frac{7}{9}$ $\frac{16}{24} = \frac{2}{3}$

- Great work
- Don’t forget you can go over this a few times to be sure that you understand this part of fractions