Fractions

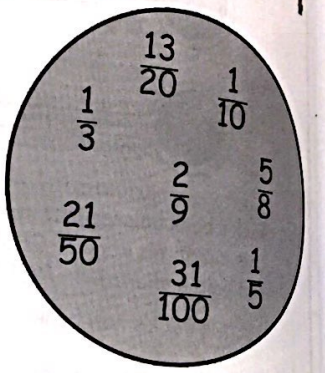
A fraction consists of 2 parts :-

$\frac{2}{3}$ ← this is called the **NUMERATOR**

$\frac{2}{3}$ ← this is called the **DENOMINATOR**

The "**denominator**" is the name (or type) of fraction you are dealing with (thirds here).

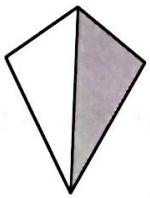
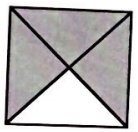
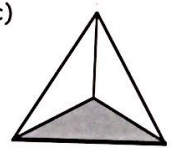
The "**numerator**" tells you the number or "how many" of the thirds (in this case 2).

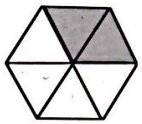
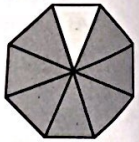


Simplifying Fractions

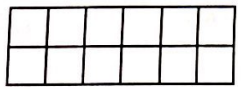
Exercise 1

1. For each of the following, say what fraction has been shaded :-

(a) 
(b) 
(c) 
(d) 
(e) 

(f) 
(g) 
(h) 
(i) 
(j) 

2. (a) Use a ruler to draw this rectangle measuring 6 boxes by 2 boxes. Shade in any $\frac{1}{4}$ of it.



(b) Draw the same box again.
This time shade or colour in $\frac{1}{6}$ of the shape.

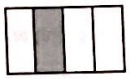
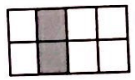
(c) Draw the same box again. This time shade or colour in $\frac{3}{4}$ of the shape.

(d) Draw the same box again. This time shade or colour in $\frac{2}{3}$ of the shape.

(e) Draw the same box again. This time shade or colour in $\frac{7}{12}$ of the shape.

3. Two fractions might look different because they have different **numerators** and different **denominators** but they might still represent the same number :-

Look at the two diagrams representing fractions.

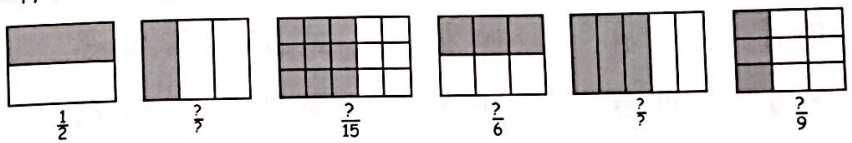
fig. 1 
fig. 2 

(a) What fraction is shaded in figure 1 ?

Can you see that the fraction shaded in figure 2 is $\frac{2}{8}$?

(b) What do the two diagrams tell you about the fractions $\frac{2}{8}$ and $\frac{1}{4}$?

4. Copy the following and write down underneath each figure what fraction is shaded.



(a) From the pictures you can see another fraction equal to $\frac{1}{2}$. ($\frac{1}{2} = \frac{?}{?}$)

(b) The second and last diagrams show that $\frac{1}{3}$ is the same as $\frac{?}{?}$.

(c) The third and the fifth diagram shows that $\frac{?}{15}$ is the same as $\frac{?}{?}$.

It is possible to find a fraction **equivalent** to $\frac{3}{4}$ by simply "multiplying the numerator and the denominator by any number" :-

=> $\frac{3}{4}$ becomes $\frac{3}{4} \times\frac{5}{5} = \frac{15}{20}$ numerator x 5, denominator x 5

5. (a) Multiply the top and the bottom of $\frac{3}{4}$ by 2 to create a new fraction. What is it ?

(b) Multiply the top and the bottom of $\frac{3}{4}$ by 3 to create a new fraction. What is it ?

(c) Find at least 4 more fractions equivalent to $\frac{3}{4}$.

6. Multiply the top and bottoms of each fraction by any simple number to create a new fraction equivalent to the one given :-

(a) $\frac{1}{3}$ (b) $\frac{3}{5}$ (c) $\frac{2}{7}$ (d) $\frac{7}{8}$ (e) $\frac{9}{10}$ (f) $\frac{17}{20}$

We can **SIMPLIFY** fractions (like $\frac{9}{12}$) by "dividing" top and bottom by a number.

=> $\frac{9}{12}$ becomes $\frac{9}{12} \div\frac{3}{3} = \frac{3}{4}$ (this is the fraction in its simplest form)

7. (a) Divide the top line and bottom line of each fraction by 3, to simplify each one :-

(i) $\frac{3}{6}$ (ii) $\frac{6}{15}$ (iii) $\frac{21}{24}$ (iv) $\frac{15}{27}$ (v) $\frac{9}{39}$ (vi) $\frac{18}{33}$

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