Maths- Fractions
This lesson will be live on teams for your class at;
9am-5L
10am-5H
11am-5M

Learning objective; To convert improper to mixed number fractions.

Warm up-Find your way through the maze! Can you travel through the maze making sure you only go through a statement which is correct.

START!

$1\frac{4}{5} = \frac{8}{5}$ | $\frac{12}{5} = 2\frac{2}{5}$ | $2\frac{2}{7} = \frac{17}{7}$ | $\frac{19}{5} = 3\frac{3}{5}$ | $4\frac{1}{2} = \frac{9}{2}$

$\frac{14}{3} = 4\frac{2}{3}$ | $5\frac{1}{4} = \frac{21}{4}$ | $\frac{19}{3} = 6\frac{2}{3}$ | $4\frac{2}{3} = \frac{14}{3}$ | $\frac{29}{5} = 5\frac{4}{5}$

$5\frac{3}{7} = \frac{38}{7}$ | $\frac{27}{4} = 6\frac{2}{4}$ | $5\frac{5}{6} = \frac{34}{6}$ | $\frac{38}{5} = 7\frac{3}{5}$ | $5\frac{7}{8} = \frac{47}{8}$

$\frac{31}{4} = 7\frac{3}{4}$ | $4\frac{5}{7} = \frac{33}{7}$ | $\frac{32}{3} = 10\frac{2}{3}$ | $7\frac{6}{11} = \frac{84}{11}$ | $\frac{57}{10} = 5\frac{7}{10}$

$5\frac{3}{4} = \frac{26}{4}$ | $\frac{44}{12} = 3\frac{7}{12}$ | $6\frac{2}{11} = \frac{68}{11}$ | $\frac{61}{9} = 6\frac{7}{9}$ | $6\frac{4}{5} = \frac{33}{5}$

FINISH!

In your books, write the correct statements in the order you travelled through.

$$1\frac{4}{5} = \frac{8}{5}$$

$$\frac{12}{5} = 2\frac{2}{5}$$

$$2\frac{2}{7} = \frac{17}{7}$$

$$\frac{19}{5} = 3\frac{3}{5}$$

$$4\frac{1}{2} = \frac{9}{2}$$

$$\frac{14}{3} = 4\frac{2}{3}$$

$$5\frac{1}{4} = \frac{21}{4}$$

$$\frac{19}{3} = 6\frac{2}{3}$$

$$4\frac{2}{3} = \frac{14}{3}$$

$$\frac{29}{5} = 5\frac{4}{5}$$

$$5\frac{3}{7} = \frac{38}{7}$$

$$\frac{27}{4} = 6\frac{2}{4}$$

$$5\frac{5}{6} = \frac{34}{6}$$

$$\frac{38}{5} = 7\frac{3}{5}$$

$$5\frac{7}{8} = \frac{47}{8}$$

$$\frac{31}{4} = 7\frac{3}{4}$$

$$4\frac{5}{7} = \frac{33}{7}$$

$$\frac{32}{3} = 10\frac{2}{3}$$

$$7\frac{6}{11} = \frac{84}{11}$$

$$\frac{57}{10} = 5\frac{7}{10}$$

$$5\frac{3}{4} = \frac{26}{4}$$

$$\frac{44}{12} = 3\frac{7}{12}$$

$$6\frac{2}{11} = \frac{68}{11}$$

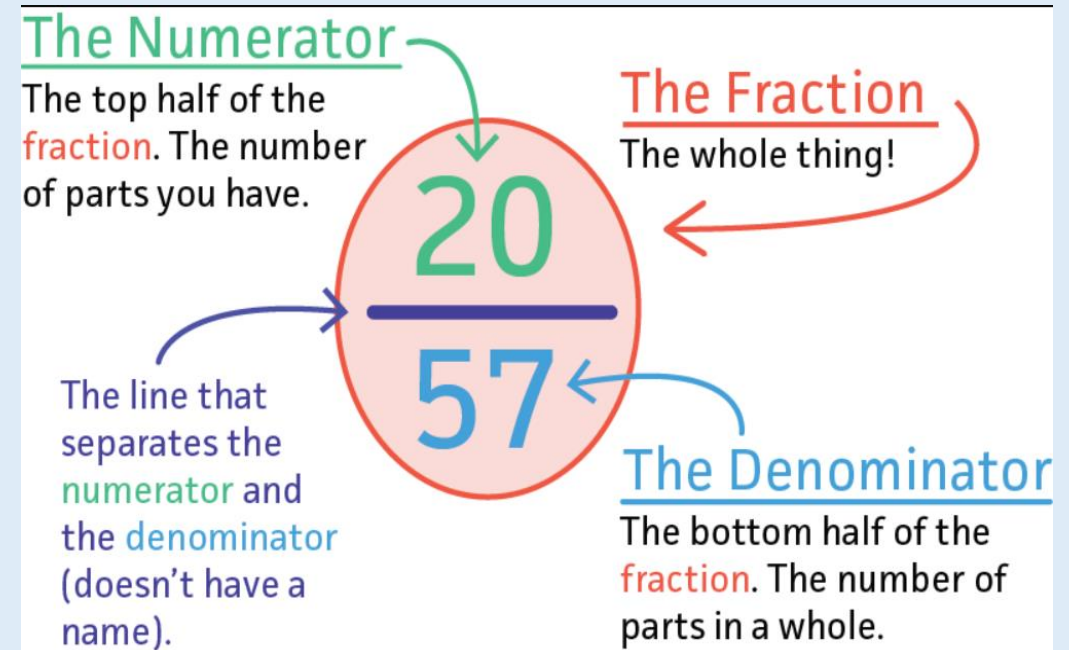$$\frac{61}{9} = 6\frac{7}{9}$$

$$6\frac{4}{5} = \frac{33}{5}$$

FINISH!

What is a fraction?

A fraction is defined as;

- Part of a **whole**.
- A figure or set of items which has been partitioned **equally.**

They have **numerators** and **denominators** to determine how the whole of something (all of it) is being split equally and how much of it is being represented (coloured/added/used).

The Numerator
The top half of the fraction. The number of parts you have.

The Fraction
The whole thing!

The line that separates the numerator and the denominator (doesn't have a name).

The Denominator
The bottom half of the fraction. The number of parts in a whole.

$$\frac{20}{57}$$

Convert from Mixed to improper

You can easily convert between mixed and improper fractions. By following 3 simple steps we can represent any mixed number with an improper fraction.

Multiply the whole number by the denominator and add the numerator.

$$4\frac{1}{3} = \frac{13}{3}$$

Then add.

Keep the same denominator.

Multiply.

1. Start by multiplying the whole number by the denominator.
2. Next, add this **product** to the original numerator.
3. Finally, place this **sum** on top of the original denominator.

$9\frac{1}{9} = \text{—}$ $3\frac{8}{9} = \text{—}$ $8\frac{7}{12} = \text{—}$ $7\frac{7}{9} = \text{—}$

$3\frac{11}{15} = \text{—}$ $3\frac{2}{5} = \text{—}$ $4\frac{2}{7} = \text{—}$ $7\frac{1}{3} = \text{—}$

Answers

$$9\frac{1}{9} = \frac{82}{9} \qquad 3\frac{8}{9} = \frac{35}{9} \qquad 8\frac{7}{12} = \frac{103}{12} \qquad 7\frac{7}{9} = \frac{70}{9}$$

$$3\frac{11}{15} = \frac{56}{15} \qquad 3\frac{2}{5} = \frac{17}{5} \qquad 4\frac{2}{7} = \frac{30}{7} \qquad 7\frac{1}{3} = \frac{22}{3}$$

Converting from improper to mixed number

Just like converting from mixed number to improper fractions, we can follow a simple method to convert improper fractions into their mixed number equivalents.

1. Divide the **numerator** by the **denominator**.
2. Write down the **whole** number result.
3. Use the remainder as the new **numerator** over the original **denominator**.

$\frac{32}{9} = -$ $\frac{67}{12} = \underline{\quad}$ $\frac{116}{15} = \underline{\quad}$ $\frac{34}{15} = \underline{\quad}$

$\frac{25}{12} = \underline{\quad}$ $\frac{41}{6} = -$ $\frac{53}{7} = -$ $\frac{25}{4} = -$

③ times & ② left

$\frac{17}{5} = 3\frac{2}{5}$

goes into

(used 5 times table)

Improper fraction $\frac{15}{7}$ — Numerator — Denominator

Step 1: Divide the numerator with the denominator

$15 \div 7 = 2 \text{ R } 1$

Step : 2 Assemble the mixed fraction

$\frac{15}{7} = 2\frac{1}{7}$

$\frac{15}{7} = 2\frac{1}{7}$ ← Mixed number

Answers

$$\frac{32}{9} = 3\frac{5}{9} \qquad\qquad \frac{67}{12} = 5\frac{7}{12} \qquad\qquad \frac{116}{15} = 7\frac{11}{15} \qquad\qquad \frac{34}{15} = 2\frac{4}{15}$$

$$\frac{25}{12} = 2\frac{1}{12} \qquad\qquad \frac{41}{6} = 6\frac{5}{6} \qquad\qquad \frac{53}{7} = 7\frac{4}{7} \qquad\qquad \frac{25}{4} = 6\frac{1}{4}$$

Fluency

You are going to do some code breaking today.

First you need to work out your cipher (the link between letters and the code)

You will need to complete this table, converting between improper and mixed number fractions.

Create the table in your book filling in the missing fractions.

	improper	mixed
A	$\frac{6}{5}$	
B		$1\frac{1}{2}$
C	$\frac{9}{7}$	
D		$1\frac{3}{4}$
E	$\frac{29}{6}$	
F		$1\frac{2}{9}$
G	$\frac{7}{2}$	
H		$3\frac{2}{7}$
I	$\frac{7}{6}$	
J		$2\frac{1}{9}$
K	$\frac{8}{7}$	
L		$4\frac{3}{4}$
M	$\frac{12}{5}$	

	improper	mixed
N		$2\frac{4}{9}$
O	$\frac{9}{4}$	
P		$3\frac{4}{5}$
Q	$\frac{5}{2}$	
R		$1\frac{5}{6}$
S	$\frac{11}{4}$	
T		$2\frac{1}{6}$
U	$\frac{31}{7}$	
V		$1\frac{1}{4}$
W	$\frac{17}{7}$	
X		$1\frac{8}{9}$
Y	$\frac{9}{2}$	
Z		$1\frac{5}{8}$

Fluency

Here is a fantastically rubbish joke, can you use your cipher to work out the joke and its punchline.

$\frac{23}{7}$	$2\frac{1}{4}$	$2\frac{3}{7}$		$\frac{7}{4}$	$2\frac{1}{4}$		$4\frac{1}{2}$	$2\frac{1}{4}$	$4\frac{3}{7}$		$2\frac{3}{7}$	$1\frac{1}{5}$	$1\frac{1}{7}$	$4\frac{5}{6}$		$1\frac{1}{5}$
$\frac{7}{4}$	$2\frac{1}{4}$	$\frac{13}{8}$	$1\frac{1}{6}$	$\frac{22}{9}$	$3\frac{1}{2}$		$\frac{19}{4}$	$1\frac{1}{5}$	$\frac{7}{4}$	$4\frac{1}{2}$		$3\frac{1}{2}$	$1\frac{1}{5}$	$3\frac{1}{2}$	$1\frac{1}{5}$	**?**
$4\frac{1}{2}$	$2\frac{1}{4}$	$4\frac{3}{7}$		$\frac{19}{5}$	$2\frac{1}{4}$	$1\frac{1}{7}$	$4\frac{5}{6}$	$\frac{11}{6}$		$\frac{11}{9}$	$1\frac{1}{5}$	$1\frac{2}{7}$	$4\frac{5}{6}$			

Plenary-Create your own

Can you use the same cipher to write your own joke?

See if any of your family members can work it out.