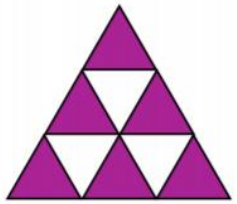
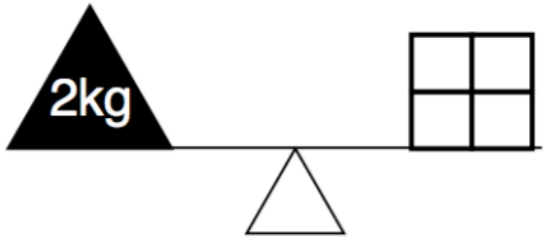
Starter

The speed limit is 70mph

How many miles per hour below the speed limit is the car travelling?



What fraction of the shape is shaded?



Four identical blocks weigh 2kg in total. Find the weight of one block.

Fractions

Learning Objectives:

- Read, write, order and compare common fractions and mixed numbers
- Find fractions of a whole

Recap

Write 1.72 million in full using digits.

What number multiplied by itself gives 49 ?

Writing Fractions

1/2	ONE-HALF	1/10	ONE-TENTH
1/3	ONE-THIRD	1/12	ONE-TWELFTH
1/4	ONE-FOURTH OR A QUARTER	1/100	ONE-HUNDREDTH
1/5	ONE-FIFTH	1/1000	ONE-THOUSANDTH

When writing a fraction, the denominator tells how many parts there are all together. The numerator tells how many parts are counted.

$\frac{1}{2}$ ← numerator

denominator → 2

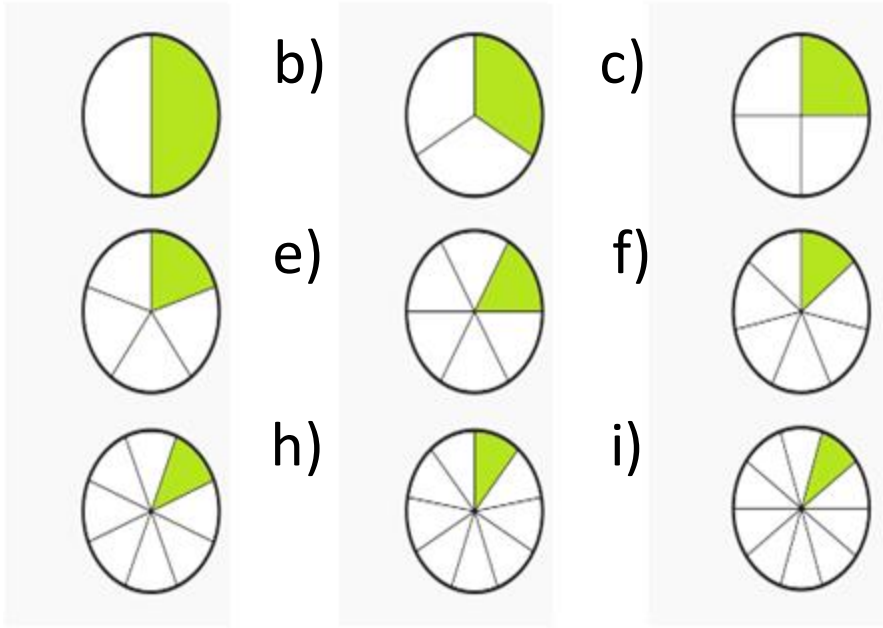
Practice:

Write each fraction shown in numbers

a) b) c)

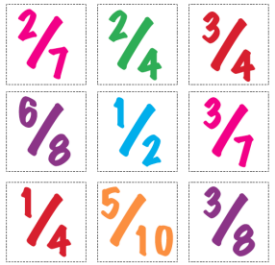
d) e) f)

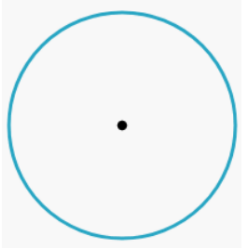
g) h) i)



Practice – Writing Fractions

Represent each fraction in different ways





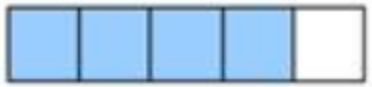
..as slices of a circle

..as parts along a length

..as a value between zero and 1 whole on a number line

..in words

Practice – writing in different formats

1) In words 

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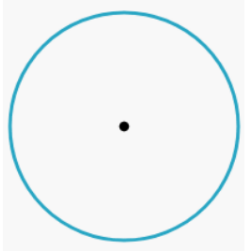
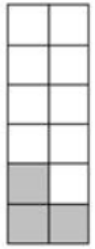
2) 3/4 on line 

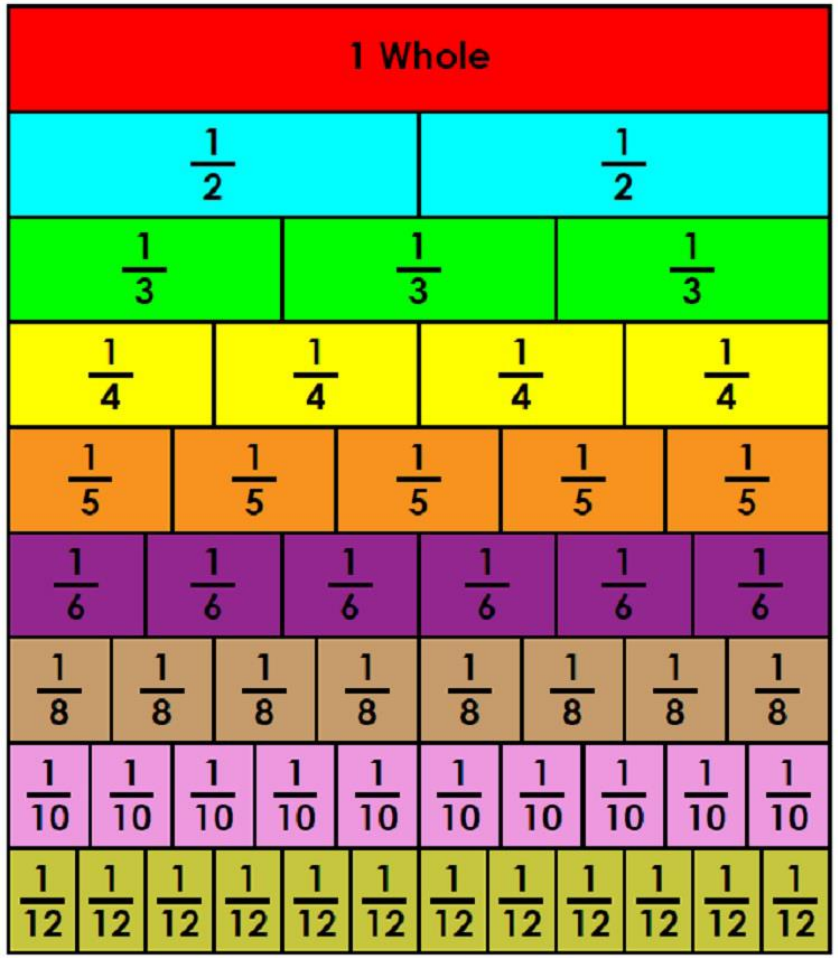
3) 7/8 as parts of a circle 

4)  in numbers

Practice – Writing Fractions Questions

- 1) Write seven out of thirteen as a fraction using digits
- 2) Write 15/21 in words
- 3) Write 18/50 in words
- 4) You have 6m of wood left from a plank that was 20m long. Write what you have left as a fraction of the original
- 5) Write seventeen eighteenths as a fraction in numbers
- 6) Write 30/100 in words

Comparing Fractions



$\frac{1}{4} < \frac{3}{8}$

$\frac{4}{6} \bigcirc \frac{2}{3}$

$\frac{2}{3} \bigcirc \frac{1}{5}$

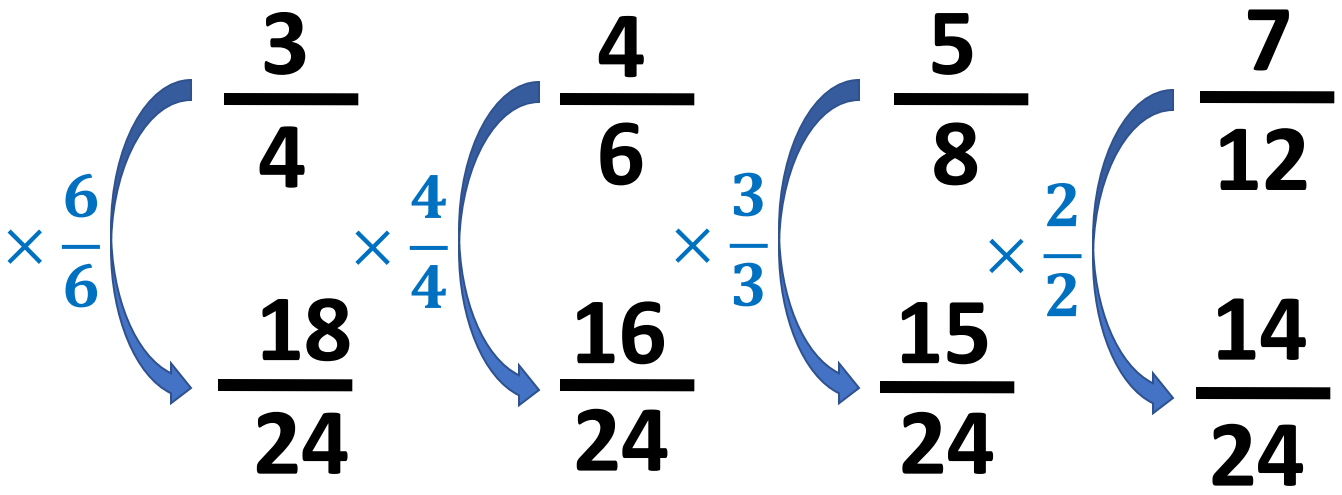
$\frac{3}{4} \bigcirc \frac{7}{8}$

$\frac{5}{8} \bigcirc \frac{1}{2}$

$\frac{2}{3} \bigcirc \frac{4}{6}$

Ordering Fractions

Put the following fractions in ascending order:



- The common denominator is 24.
- Each fraction needs to then be converted so that all the denominators are the same.
- The numerators can then be compared.

$$\frac{7}{12}, \quad \frac{5}{8}, \quad \frac{4}{6}, \quad \frac{3}{4}$$

Ordering Fractions

Put each of the sets of fractions in order, smallest to largest.

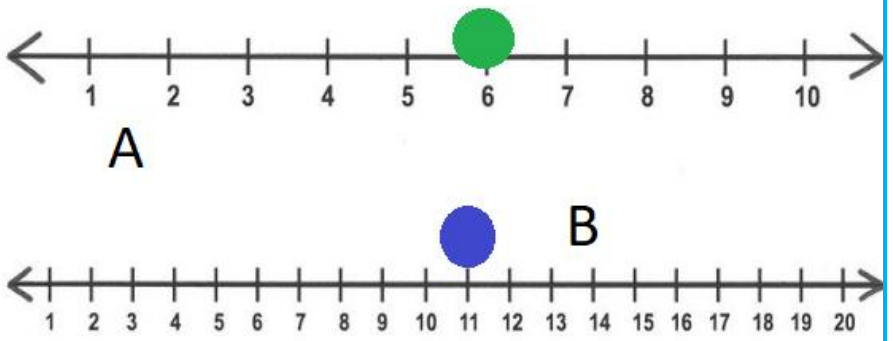
a) $\frac{1}{2}, \frac{5}{8}, \frac{7}{16}$ **b)** $\frac{2}{5}, \frac{3}{10}, \frac{7}{20}$ **c)** $\frac{3}{4}, \frac{7}{12}, \frac{5}{8}$ **d)** $\frac{5}{6}, \frac{11}{12}, \frac{19}{24}$

Put each of the sets of fractions in order, largest to smallest.

a) $\frac{4}{9}, \frac{5}{12}, \frac{2}{3}$ **b)** $\frac{9}{10}, \frac{11}{12}, \frac{4}{5}$ **c)** $\frac{1}{4}, \frac{3}{11}, \frac{5}{22}$ **d)** $\frac{7}{9}, \frac{4}{5}, \frac{13}{15}$

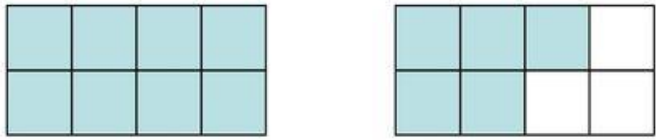
Practice – Comparing and Ordering Fractions

- 1) Show which is bigger 2/3 or 9/12
- 2) Which is the lower 1/4 or 12/40
- 3) Put in order of size, lowest first … 6/8 9/10 3/4
- 4) Change 10/12 to sixths
- 5) Show which journey you have completed more of A or B



- 6) Order the fractions, highest first 9/10 7/8 8/9

Mixed Fractions



$\frac{8}{8}$ + $\frac{5}{8}$ = $\frac{13}{8}$ = 1 and 5/8

Exercise 1:

Show the following improper fractions in diagrams like the one above:

1) $\frac{3}{2}$

2) $\frac{5}{3}$

3) $\frac{11}{6}$

4) $\frac{17}{10}$

5) Five halves

6) Eight thirds

7) Eleven fifths

8) Forty twelfths

Practice – Converting Improper Fractions to Mixed Numbers

Convert these improper fractions into mixed numbers. Your answers should be in simplest form.

1) $\frac{15}{4} =$

2) $\frac{17}{6} =$

3) $\frac{13}{2} =$

4) $\frac{19}{5} =$

5) $\frac{24}{6} =$

6) $\frac{26}{5} =$

7) $\frac{33}{7} =$

8) $\frac{28}{8} =$

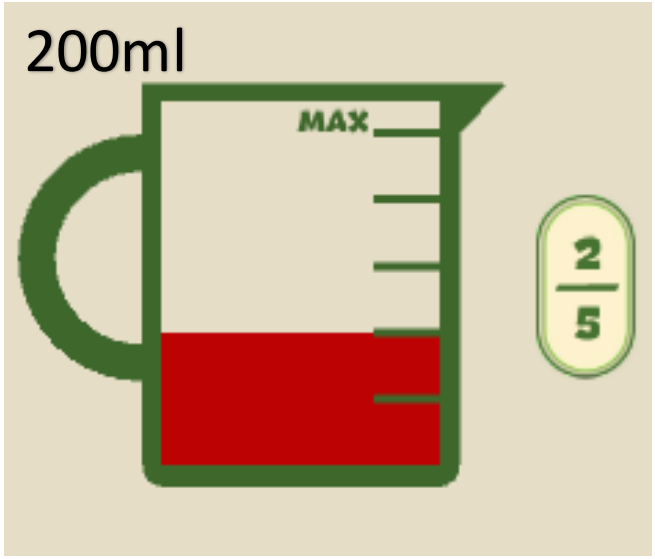
9) $\frac{26}{4} =$

10) $\frac{34}{9} =$

11) $\frac{39}{10} =$

12) $\frac{38}{3} =$

Fractions of a Whole Amount



Step 1) 200ml divided by 5 parts = 200/5 = 40ml

Step 2) 40m x 2 parts = 40 x 2 = 80ml

So 2/5 of 200ml is 80ml

$\frac{1}{3}$ of 30

$\frac{1}{4}$ of 20

$\frac{1}{5}$ of 35

$\frac{1}{6}$ of 36

$\frac{1}{10}$ of 200

$\frac{1}{8}$ of 40

$\frac{1}{7}$ of 21

$\frac{3}{4}$ of 40

$\frac{2}{9}$ of 18

$\frac{7}{8}$ of 56

$\frac{4}{9}$ of 27

$\frac{5}{6}$ of 66

$\frac{7}{10}$ of 200

$\frac{4}{5}$ of 20

$\frac{2}{7}$ of 91

$\frac{7}{8}$ of 1600

$\frac{4}{9}$ of 20

$\frac{8}{9}$ of 360

$\frac{7}{10}$ of 2000

$\frac{3}{7}$ of 105

$\frac{2}{9}$ of 144

Practice Exam Style Questions

1)

(a) Work out 2/5 of £60

(1)

Practice Exam Style Questions

2)

b) Larna has these test results

German 14 / 20 Science 20 / 30 English 11 / 15

Geograph 16 / 25

Her teacher wants to compare her results

List the subjects in order from her best result to her worst result.
Show why you think this. (3)

Practice Exam Style Questions

3)

Sarah has a snack at work each day.

She has this information about the snacks she had last week.

day	Mon	Tue	Wed	Thu	Fri
snack	banana	chocolate	biscuit	cake	crisps
number of calories	105	260	49	257	234

Sarah thinks the chocolate is over a quarter of all the weekly calories.

Is she correct?
Show why you think this.

(3)

Practice Exam Style Questions

4)

There is a lucky dip for children at the cafe on Monday.

Each child who has a go on the lucky dip wins a prize.

There are a total of 40 prizes.
The prizes are

- 20 red lollipops
- 10 green lollipops
- 5 yellow lollipops
- 5 blue lollipops.

Bradley is the first child to have a go on the lucky dip.

Show what fraction of the lollipops are blue

(1)

Practice Exam Style Questions

5)

Kay buys 3 packets of seeds.
There are 50 seeds in each packet.

She plants 6/10 of the seeds in her vegetable patch.

Kay plants the seeds in rows.
She plants 15 seeds in each row.

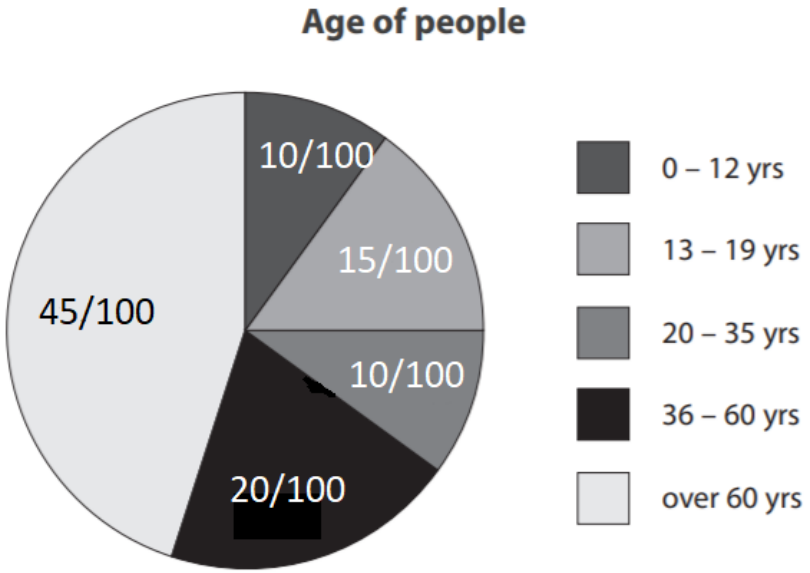
(a) How many rows of seeds does Kay plant?

(4)

Practice Exam Style Questions

6)

Carrie has this information about the age of people who used the eye care centre.



Carrie says

> The pie chart shows that a quarter of the people using the eye care centre were 36 to 60 years old.

(b) Is Carrie correct?
Show why you think this. (2)