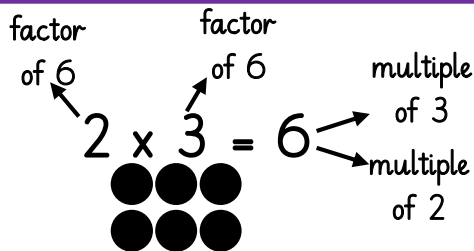


Y5- Multiplication and Division



short multiplication

	4	3	5	7
x				6
2	6	1	4	2
	2	3	4	



Common factors of 12 and 30 are 1, 2, 3 and 6.

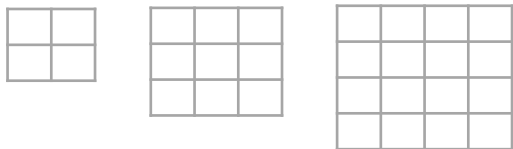
The highest common factor (HCF) is 6

12	30
① x 12	① x 30
② x ⑥	② x 15
③ x 4	③ x 10
	5 x ⑥

square numbers

A square number is the product of multiplying a number by itself.

$$2^2 = 4 \quad 3^2 = 9 \quad 4^2 = 16$$



cube numbers

A cube number is the product of multiplying a number by itself, then by itself again.

$$2^3 = 8$$

$$3^3 = 27$$

$$1^3 = 1 \times 1 \times 1 = 1$$

$$2^3 = 2 \times 2 \times 2 = 8$$

$$3^3 = 3 \times 3 \times 3 = 27$$

$$4^3 = 4 \times 4 \times 4 = 64$$

$$5^3 = 5 \times 5 \times 5 = 125$$

multiplying by 10, 100 and 1000

TT	Th	H	T	O	t	h
			1	2	4	5
		1	2	4	5	
	1	2	4	5		
1	2	4	5	0		

dividing by 10, 100 and 1000

TT	Th	H	T	O	t	h
		4	2	0		
			4	2		
				4	2	
				0	4	2

A **multiple** is a number that can be divided by another without a remainder.

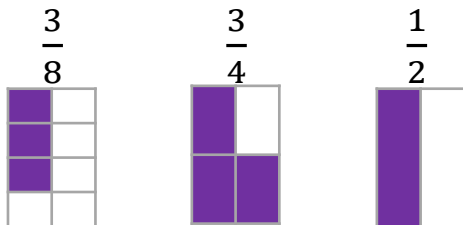
Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, 27

Multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32

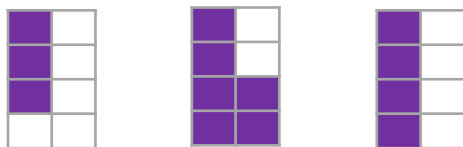
A **prime number** is a whole number greater than one that only has two factors - one and itself. It can't be divided by another positive integer without leaving a remainder. 2 is the only even prime number. Non-prime numbers are called **composite**.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

comparing and ordering fractions



$$\frac{3}{8} \quad \frac{6}{8} \quad \frac{4}{8}$$



$$\frac{3}{8} < \frac{1}{2} < \frac{3}{4}$$

mixed numbers and improper fractions



mixed number

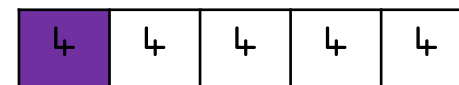
$$4\frac{2}{5}$$

improper fraction

$$\frac{22}{5}$$

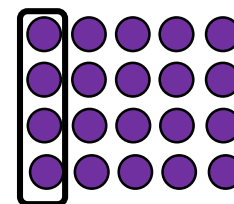
fractions of numbers

$$\frac{1}{5} \text{ of } 20$$

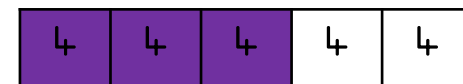


$$20 \div 5 = 4$$

$$\frac{1}{5} \text{ of } 20 = 4$$



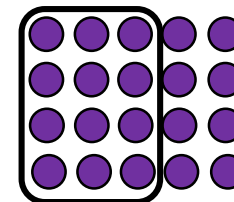
$$\frac{3}{5} \text{ of } 20$$



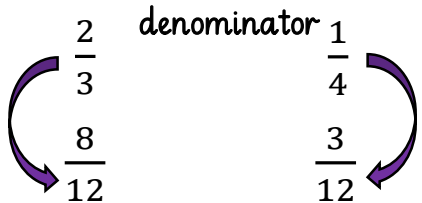
$$20 \div 5 = 4$$

$$4 \times 3 = 12$$

$$\frac{3}{5} \text{ of } 20 = 12$$

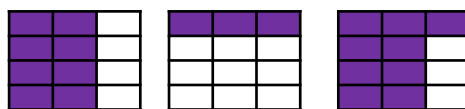


expressing fractions in the same denominator



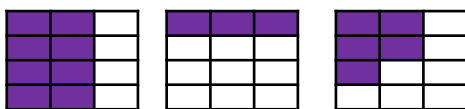
adding fractions with the same denominators

$$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$



subtracting fractions with the same denominators

$$\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$$

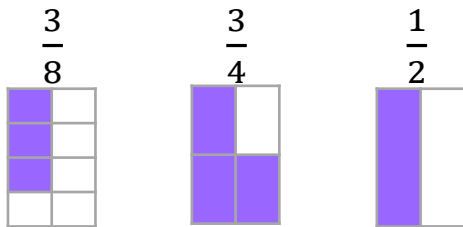


tenths are found by dividing a number by 10

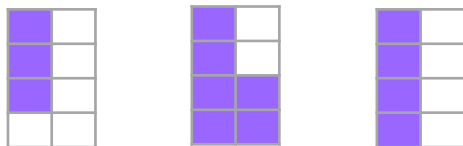
H	T	O	$\frac{1}{10}$
		2	
		0	2

2 divided by 10 is equal to $\frac{2}{10}$

comparing and ordering fractions



$$\frac{3}{8} \quad \frac{6}{8} \quad \frac{4}{8}$$

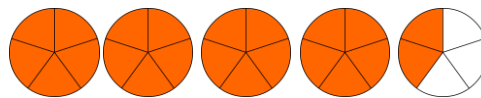


$$\frac{3}{8} < \frac{1}{2} < \frac{3}{4}$$

expressing fractions in the same denominator



mixed numbers and improper fractions



mixed number

$$4\frac{4}{5}$$

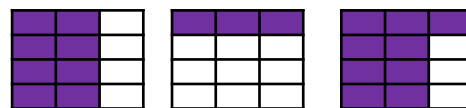
improper fraction

$$\frac{22}{5}$$

adding fractions with different denominators

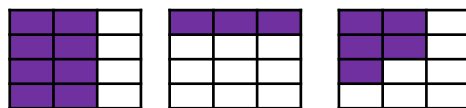
First express the fractions as the same denominator

$$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$



subtracting fractions with different denominators

$$\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$$

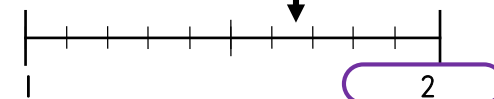


O	t	h	th
3	5	7	2

1			
0	5		
0	0	7	
0	0	0	2

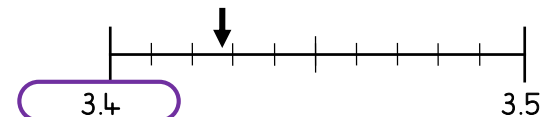
Round to the nearest whole number

1.673



Round to the nearest tenth

3.429



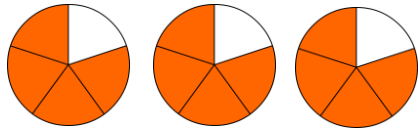
order and compare decimals

O	t	h	th
1	3	0	0
1	0	0	3
1	3	4	0

1.3 1.003 1.34

$$1.34 > 1.3 > 1.003$$

multiply fractions by whole numbers



$$\frac{4}{5} \times 3 = \frac{12}{5} = 2\frac{2}{5}$$

multiply mixed numbers by whole numbers



$$3\frac{2}{5} \times 2 = 6\frac{4}{5}$$

method one:

$$3 \times 2 = 6$$

$$\frac{2}{5} \times \frac{2}{1} = \frac{4}{5}$$

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

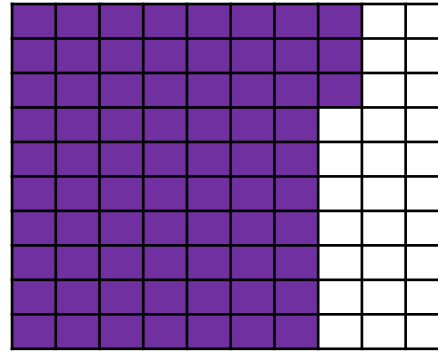
method two:

$$\frac{17}{5} \times \frac{2}{1} = \frac{34}{5}$$

$$\frac{34}{5} = 6\frac{4}{5}$$

- 1) Multiply the whole numbers
 - 2) Multiply the fraction by the whole number
 - 3) Add the two answers together
-
- 1) Convert the mixed number to an improper fraction
 - 2) Multiply the improper fraction by the whole number
 - 3) Convert the answer to a mixed number

read and write decimal numbers as fractions



$$\frac{73}{100} = 0.73$$

$$\frac{3}{4} \begin{matrix} \xrightarrow{\times 25} \\ \xrightarrow{\times 25} \end{matrix} = \frac{75}{100} = 0.75 \qquad 0.25 = \frac{25}{100} \begin{matrix} \xrightarrow{\div 25} \\ \xrightarrow{\div 25} \end{matrix} = \frac{1}{4}$$

fraction, decimal and percentage equivalences

$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%
$\frac{2}{5}$	0.4	40%
$\frac{3}{5}$	0.6	60%
$\frac{4}{5}$	0.8	80%
$\frac{3}{10}$	0.3	30%
$\frac{7}{10}$	0.7	70%

decimal addition and subtraction

Line up number in the correct place value columns and include the decimal point. Use place holders to fill in the empty spaces.

$$23.4 - 1.23 =$$

T	O	t	h
2	3	3	10
	1	2	3
2	2	1	7

$$4 - 1.09 =$$

T	O	t	h
	3	1	10
	1	0	9
	2	9	1