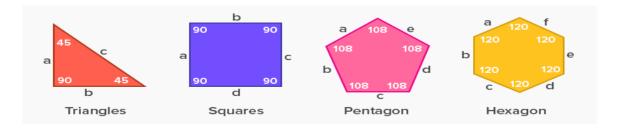


MATHS HOMEWORK SUPPORT BOOKLET FOR Parents KS 3



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Place Value and Rounding

Вос	Booklet 1: Place Value and Rounding			
1	Place value	The value of a digit depending on its place in a number.		
2	Number	A word, symbol, or figure, that represents a particular quantity.		

Place Value

Value of the Digit

The column the digit is in tells us its value.

Į	Example			
	Thousands	Hundreds	Tens	Units
	3	5	0	2

The value of the 5 is 500 because it is in the hundreds column (5 \times 100 = 500).

The value of the 3 is 3000 because it is in the thousands column (3 \times 1000 = 3000)

Example:

48	6542	80321
Is made up	Is made up of	Is made up of
of	6 thousands	8 ten
4 tens	5 hundreds	thousands
8 units	4 tens	0 thousands
	2 units	3 hundreds
		2 tens
		1 unit

Place	Place Value Table								
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Units	Tenths	Hundredths	Thousandths

Rounding whole Numbers

We have a rhyme when rounding <u>Under Line</u>, draw a line/say the rhyme 5 or more add 1 more, 4 or less let it rest

Round to nearest 10

<u>6/</u>7 **≤** say the rhyme = 70

1<u>0/</u>2 **\(\sigma \)** say the rhyme = 100

Round to nearest 100

<u>1/</u>6 **№** 7 say the rhyme = 200

<u>1/</u>3 ≤ 3 say the rhyme = 100

Rounding decimals

Rounding means making a number simpler but keeping its value close to what it was.

Examples:

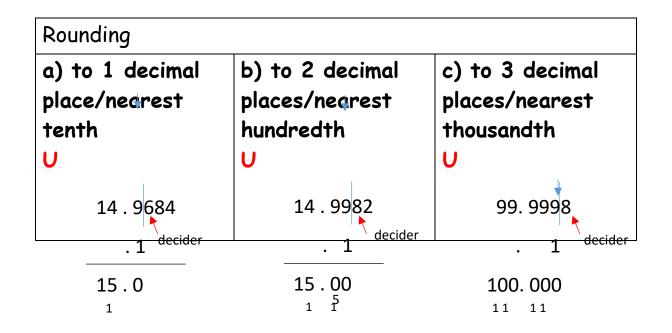
Round 59.9261 to the following place value		
a) to 1 decimal place/nearest tenth	b) to 2 decimal places/nearest hundredth	c) to 3 decimal places/neamest thousandth
5	U	5
	59 . 9261	

59 . 9261 decider	1 ecider	59 . 9261
The decider is 2, so we keep it the same.	The decider is 6, so we round up the 2 by adding 1. $59.9261 \approx 59.93$	The decider is 1, so we keep it the same.
59.9261 ≈ 59.9		59.9261 ≈ 59.926

Dealing with 9s

We have looked at rounding decimals to different place values. What we haven't looked at yet is what do you do when you have to round up a '9'? In our base ten system, '9' is the biggest single digit number there is, so when rounding a '9' up you make the '9' a '0' and carry over a '1' to the next biggest place value. The easiest way to do this is using a column addition layout. This is especially useful when there are lots of 9s!

Examples:



The decider is a '6', so we round up. The easiest way is to "add 1" using column addition.

We carry '1' to the ones. The '4' turns into a '5'.

 $14.9694 \approx 15.0$ There is one digit after the decimal point. It is rounded to 1 decimal place.

The decider is a '8', so we round up. The easiest way is to "add 1" using column addition, carrying each time.

 $14.9982 \approx 15.00$

There are two digits after the decimal point. It is rounded to 2 decimal places.

The decider is an '8', so we round up. The easiest way is to "add 1" using column addition, carrying each time.

99.9988 ≈ 100.000

There are three digits after the decimal point. It is rounded to 3 decimal places.

Factors and Multiples

Factors and Multiples

A divisibility rule is a short, easy way of determining whether an integer is divisible by a whole number, without performing the division itself. It is also a very quick way of finding a factor of a number.

	Divisibility Rules
A nu	umber is divisible by
2	If last digit is 0, 2, 4, 6, or 8
3	If the sum of the digits is divisible by 3
4	If the last two digits is divisible by 4
5	If the last digit is 0 or 5
6	If the number is divisible by 2 and 3
9	If the sum of the digits is divisible by 9
10	If the last digit is 0

If a number is divisible by 2, then the number 2 as one of its factors. The number itself is a multiple of 2.

Example

- 982 is divisible by 2.
- 2 is a factor of 982.
- 982 is a multiple of 2.

Non-Example

• 835 is not divisible by 2.

- 2 is **not** a factor of 835
- 835 is **not** a multiple of 2.

Digit Sums: Divisibility rules for 3s and 9s.

- If a number is in the 3 times table then the sum of its digits is divisible by 3.
- If a number is in the 9 times table then the sum of its digits is divisible by 9.

Divisibility rule for 6

- All numbers in the 6 times table have 3 and 2 as a factor.
- If a number is in **both** the 3 times table **and** 2 times table then the number is divisible by 6.
- You can remember this as "Test for 2 and 3... if it has two ticks then it divides by six!"

Multiples

 Multiples of a number are the numbers which are in its times table.

Multiples of a number are the 'same or more'.

Common Multiples

Common multiples are numbers which are in the times table of two or more numbers.

Lowest Common Multiple

The smallest number that is a common multiple of two or more numbers is called the **lowest common multiple (LCM)**. The LCM is very useful when adding or subtracting fractions.

Example:

What is the lowest common multiple of 3 and 4 3, 6, 9, <u>12</u>, 15, 18, 21, <u>24</u>, 27, 30, 33, <u>36</u>... 4, 8, <u>12</u>, 16, 20, <u>24</u>, 28, 32, <u>36</u> ...

12, 24 and 36 (and others not shown here) are common multiples of 3 and 4.

The lowest common multiple (LCM) is 12.

Factors

A factor pair of a number are two numbers that you multiply together that results in that given number. If the number is repeated (for example 4×4), we only list each

factor once. For this reason, we can say that numbers have either an **even** an **odd** number of **unique factors**.

Example

Write all the factor pairs for 100.

1 x 100

 2×50

4 x 25

5 x 20

10 × 10

List the factors of 100

1, 2, 4, 5, 10, 20, 25, 50, 100.

It has 9 unique factors.

Prime Factors

A prime factor is a factor of a number which is also prime. We will discover just how important these prime factors are!

Prime factors only have <u>TWO factors 1 and itself.</u>
The first 10 prime numbers: 2,3,5,7,11,13,17,19,23,29
For example, 2 is prime number which is a factor of 6.
Therefore 2 is a prime factor of 6.

Example

What are the prime

factors of 12?

1) Factor pairs of 12

<u>12</u>

12

3 4

- 2) Circle the prime numbers
- 3) Prime factors: 2 and 3





Index Form

2x2x3x3

 $= 2^2 \times 3^2$

Fractions

Booklet 2: Working with Fractions				
16	Fraction	Part of a whole		
17	Equivalent fraction	Two or more fractions with the same value	$\frac{1}{2} = \frac{3}{6}$	
18	Numerator	The top of a fraction	$rac{Numerator}{Denominator}$	
19	Denominator	The bottom of a fraction		
20	Unit Fraction	A fraction where the numerator is 1	½, 1/3, 1/6	1
21	Proper Fraction	Value is less than one. Numerator is smaller than the denominator	2/7 , 1/6, 100/365	
22	Improper Fraction	Value is larger than 1. Numerator is larger than the denominator.	8/5, 13/2, 47/1	
23	Mixed Number	A number written as an integer and a proper fraction.	$2\frac{1}{3}$, $12\frac{11}{30}$	
24	1	The numerator and denominator have no common factors larger than 1.	$\frac{3}{6}$ not in its simplest form as top and bottom ÷3 $\frac{2}{5}$ is in its simplest form.]r
25	integer	Numerator is a multiple of the denominator	$\frac{12}{6} = 2, \frac{2a}{a} = 2$	
26	Fraction is equal to 1	Numerator and denominator are equal	$\frac{6}{6} = 1, \frac{a}{a} = 1$	
27	Integers as a fraction	Write as a fraction with denominator 1.	$6 = \frac{6}{1}$	

Rep	Representing Fractions using pictures				
33	The whole	One shape in a fraction drawing.			
34	Equal parts	In a fraction drawing the whole is spli	t into equal parts.		
35	Fraction	Proper Fraction	Improper Fraction		
	diagrams	Each whole is split into five equal parts two are shaded: $\frac{2}{5}$	Each whole is split into five equal parts, six are shaded. $\frac{6}{5}$		
		Each whole is split into 10 equal parts, 6 are shaded: $\frac{6}{10}$			

Оре	erations with F	ractions	
36	Add or subtract fractions	Must have a common denominator fist. Add numerators. Denominator stays the same.	$\frac{\frac{1}{3} + \frac{2}{5}}{15} \text{ becomes}$ $\frac{\frac{5}{15} + \frac{6}{15}}{15} = \frac{11}{15}$
37	1	• divide by bottom • Multiply by top. Can also solve using multiplying with fractions ($\frac{3}{5}$) $x\frac{20}{1} = \frac{60}{5} = 12$)	Calculate 3/5 of 20 20 15 15 15 15 15
38	Multiply fractions	Does not need common denominator Top x top Bottom x bottom. Simplify result where possible.	$\frac{1}{3} \times \frac{3}{5} = \frac{3}{15} = \frac{1}{5}$
39	"of"	Means multiply.	
40	Multiply fractions by an integer	All integers can be written as fractions with 1 as the denominator. Multiply as normal.	$\frac{1}{3} \times 27$ $\frac{1}{3} \times \frac{27}{1} = \frac{27}{3} = 9$
41	Divide with fractions	Use "Keep, Flip, Change" Keep the first fraction same Flip the second fraction upside down Change the ÷ to x. Multiply as normal.	$\frac{1}{3} \div \frac{2}{5}$ $K C F$ $\frac{1}{3} \times \frac{5}{2} = \frac{5}{6}$
42	Calculations with mixed numbers	Usually best to convert to improper fractions first. (see left)	$2\frac{1}{3} + \frac{2}{3}$ $\frac{7}{3} + \frac{2}{3} = \frac{9}{3}$ simplifies to 3

In Maths, there are three major types of fractions. They are proper fractions, improper fractions and mixed fractions. Fractions are those terms which have numerator and denominator. Based on these two terms we define its types.

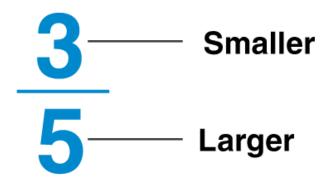
Proper Fraction

A fraction where the numerator is less than the denominator, then it is known as a proper fraction.

i.e., Numerator < Denominator

For example,





Proper Fraction

@ Byjus.con

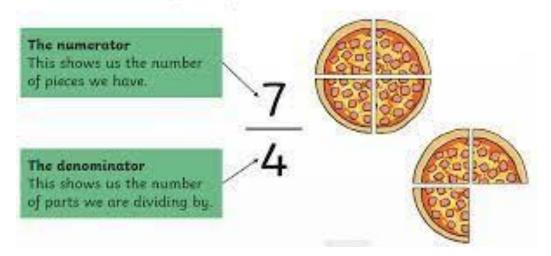
Note:

• The value of proper fraction after further simplification is always less than 1.

Improper Fraction

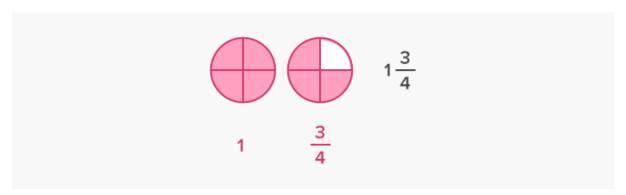
An improper fraction has a numerator greater than the denominator. For example, 3/2 is an improper fraction, but 2/3 is a proper fraction, whose denominator is greater than the numerator.

Improper Fractions



Mixed Number

A mixed number, or mixed fraction, is a number that contains both an integer (whole number) and a proper fraction (a fraction whose numerator is less than its denominator).

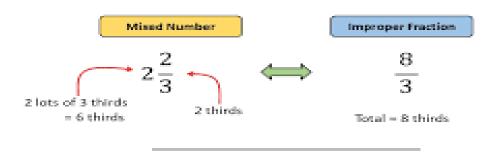


Converting Fractions

In order to convert a mixed number to an improper fraction:

- 1. Multiply the whole number by the denominator.
- 2. Add on the numerator.

3. Write the improper fraction by using the calculated value as the numerator over the original denominator.



Improper Fraction to Whole Number

To change an improper fraction to a mixed number, you must divide the numerator by the denominator. This will give you how many whole numbers the improper ...

Equivalent Fractions

When two or more fractions have the same result after simplification for which they represent the same portion of the whole, then such fractions are equal to each other and are called equivalent fractions.

For example, 1/2 and 2/4 are equivalent.

1/3 and 3/9 are equivalent.

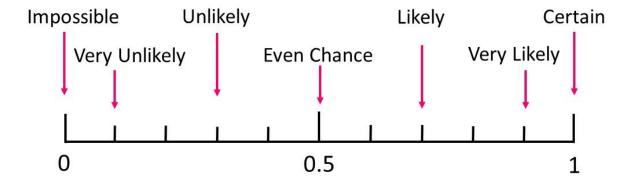
Probability

What is probability?

Probability is about estimating or calculating how likely something is to happen.

In maths, probabilities are always written as fractions, decimals or percentages with values between 0 and 1.

The Probability Scale



Ratio

Question 3: Ralph has 9 cards, each with a number on it.

1 2 3 4 5 6 7 8 9

He picks a card at random. Write down the probability that the chosen card is

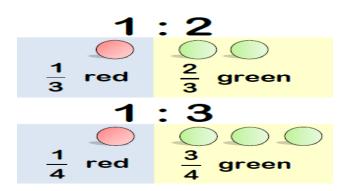
- (a) the number 8 (b) an even number (c) a number less than 7
- (d) a multiple of 4 (e) a square number (f) a prime number

A ratio shows how much of one thing there is compared to another. Ratios are usually written in the form a:b. If you are making orange squash and you mix one part orange to four parts water, then the ratio of orange to water will be 1:4 (1 to 4). The order in which a ratio is stated is important.

Ratio	The ratio of
	boys to
	girls is 2:3.
	For every 2
	boys, there
	are 3 girls.
	Boys : Girls
	2: 3
	Ratio

92	Proportion	The relationship between a part and a whole. Can be expressed as a fraction, decimal or percentage.	The ratio of boys to girls is 2:3 The proportion of the group which are boys is
93	Express ratio as a fraction	Add the parts to find the denominator.	
94	Simplify Ratio	Divide both sides by a common factor	Squares: Diamonds is 9:12 3:4.

Example





Inverse operations

In maths, every operation has an inverse. When using the balance method to solve equations, we 'balance' or 'cancel' out an operation by using its inverse. Here are the inverse operations that you need to know:

Operation	Inverse
×	÷
÷	×
+	_
_	+
2	,
(square/power	V
(square/power of 2)	

Remember in algebra that

- 3a means $3 \times a$.
- $\frac{a}{3}$ means $a \div 3$

Examples:

Solve
$$3x = 12$$
 Solve $20 = -4a$

$$20 = -4a$$

$$20 = -4a$$

$$20 = -4a$$

$$-4 = -5 = a$$

$$20 = -4a$$

$$20 = -4a$$

$$-5 = a$$

$$20 = -4a$$

$$3 = a$$

$$-4 = a$$

$$20 = -4a$$

$$3 = a$$

$$4 = a$$

$$21 = a$$

$$3 = a$$

$$4 =$$

Collecting then solving

Examples:

Solve
$$12 = 2x + 4$$
 Solve $7 = 3a - 5$
 $12 = 2x + 4$ Solve $7 = 3a - 5$
 $12 = 2x + 4$ Solve $7 = 3a - 5$
 $12 = 2x + 4$ Solve $7 = 3a - 5$
 $12 = 2x + 4$ Solve $7 = 3a - 5$
 $12 = 2x + 4$ Solve $12 = 2x + 5$
 $13 = 2x + 4$ Solve $3(4) - 5$
 $12 = 8 + 4$ Solve $3(4) - 5$
 $13 = 12 - 5$ Solve $18 = -12 + 6x$

Solve $30 = 10 + 5a$ Solve $18 = -12 + 6x$

Check $10 + 5(4)$ Solve $18 = -12 + 6(5)$
 $18 = -12 + 6(5)$
 $18 = -12 + 6(5)$
 $18 = -12 + 6(5)$
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 $18 = -12 + 6(5)$
 $18 = -12 + 6(5)$

Examples:

$$3\infty + 2\infty = 30$$

$$\frac{5}{5} = \frac{30}{5}$$

$$\infty = 6$$

Solve
$$3x + 2x = 30$$

Check
$$3(6) + 2(6) = 30$$
 \Box $18 + 12 = 30$ \Box

Given that x + 4 = 9

- a) What is the value of 2x?
- b) What is the value of x 3?

Firstly, work out the value of x:

$$2x + 4 = 9$$

$$-4 - 4$$

$$2x = 5$$

Now substitute into find required expression:

a)
$$20c = 2 \times 5 = 10$$

b)
$$\infty - 3 = 5 - 3 = 2$$

Solving Two Step Equations

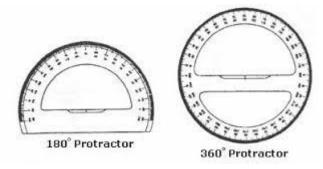
Two-step equations are equations that require us to do two balance steps to solve. It is really important that we do the balance steps in the correct order.

Examples:

Solve
$$3x + 2 = 14$$
 $3x + 2 = 10$ $3x + 2 = 10$ $3x + 2 = 10$ $3x + 2 = 14$ $3x + 3x = 36$ $3x + 3x$

Angles

Protractor: Equipment used to measure angles.



Angle: A measure of turn

Acute Angle: Turn greater than 0° and less than 90°

Right Angle: 90°

Obtuse: Turn greater than 90° and less than 180°

Straight line: 180° turn

Reflex: Turn greater than 180° and less than 360°

Full Turn: 360° turn

Perpendicular line(s): Pair of lines that meet or cross at

90°

Polygon: 2D shape with straight lines

Interior Angles: The angles inside a polygon

Exterior Angles: Formed by extending a straight line

next to interior angle.

Angles on a Straight line: Sum to 180°

Angles around a point: Sum to 360°

Vertical opposite angles: Are equal

Angles in Triangle's: Sum to 180 °

Angles in Quadrilaterals: Sum to 360°

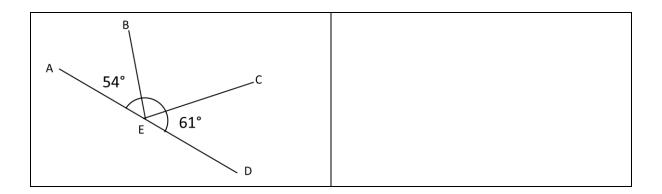
Angle Facts: Straight Lines

An angle is a measure of turn. The lengths of the lines do not matter. We measure angles in degrees. The larger the number, the greater the turn. A complete turn is 360°. Half a turn is 180°.

This is where we get our first angle fact

Adjacent angles on a straight line add up to 180°. They must share a point.

Recap Example:	
The diagram below is not	State fact:
drawn accurately.	
Line AD is a straight line.	
Work out the size of angle	
$B\widehat{E}C$.	Add up known angles:
	Subtract answer from
	known total:

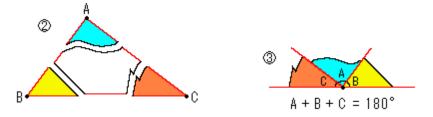


Angles in Triangles

We can use the angles on a straight line fact from lesson one to derive another fact.

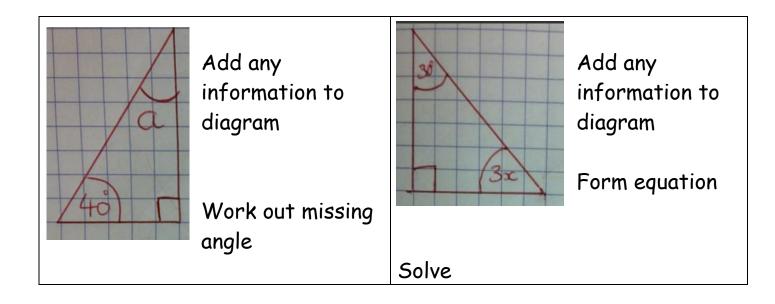
Angle Fact: Interior Angles of a Triangle add up to 180°

Demonstration: If you tear the three angles off a triangle and put them together they will always make a straight line.



*You can also see this if you fold a triangle inwards

Example with one missing angle Example with algebra



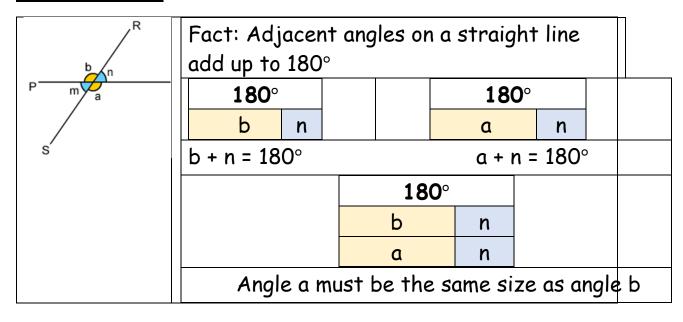
Vertically Opposite Angles

We have seen in the first lesson that adjacent angles on a straight line always add up to 180°.

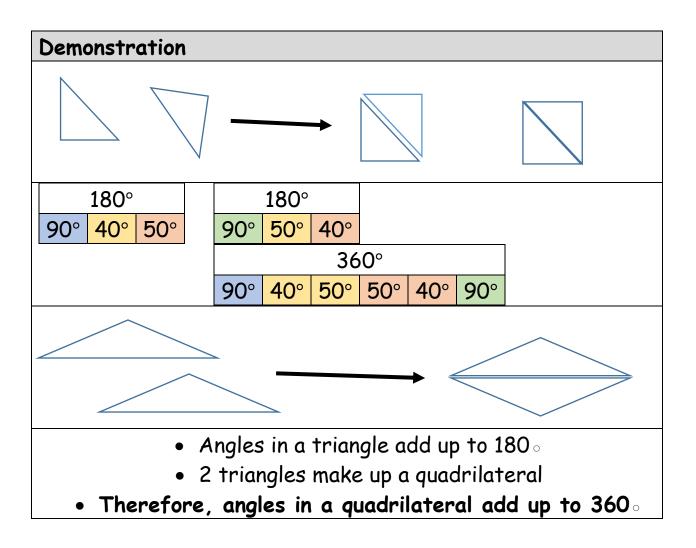
We can use this fact to derive (work out) another angle fact.

Angle Fact: Vertically Opposite angles are equal

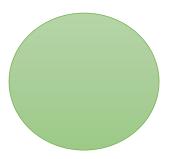
Demonstration



Angle Fact: The interior angles of a quadrilateral add up to 360°.



Circles



Circle Definition

A circle is a closed two-dimensional figure in which the set of all the points in the plane is equidistant from a given point called "centre". Every line that passes through the circle forms the line of reflection symmetry. Also, it has rotational symmetry around the centre for every angle.

Circle Shaped Objects

There are many objects we have seen in the real world that are circular in shape. Some of the examples are:

- Ring
- · CD/Disc
- Bangles
- Coins
- Wheels
- Button
- Hula hoop

We can observe many such examples in our day-to-day life.

Key Vocabulary

Radius	A line drawn from the centre of the circle	
	to the circumference.	
	Stays the same all the way around	
Diameter	A straight line that passes through the	
	centre of a circle and touches two points	
	on the circumference	
Circumference	The distance around the circle.	
	The perimeter of a circle.	
Area	The space inside a 2D shape.	
π	Greek Symbol, pronounced Pi.	
	Represents the irrational number that	
	begins 3.14159	
Sector	A part of a circle created by two radii and	
	part of the circumference	
Semi-Circle	Half a circle	
Inscribed	A shape which fits into another with the	
	perimeters touching.	

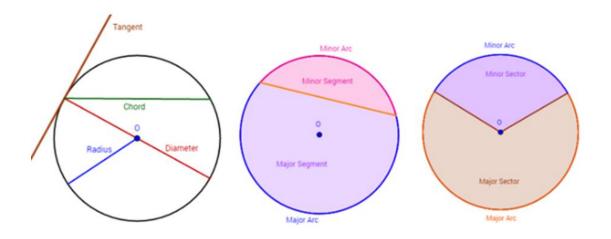
Parts of a circle

A circle is shape formed by points that are the same distance away from a centre. We need to learn the names of the parts of the circle.

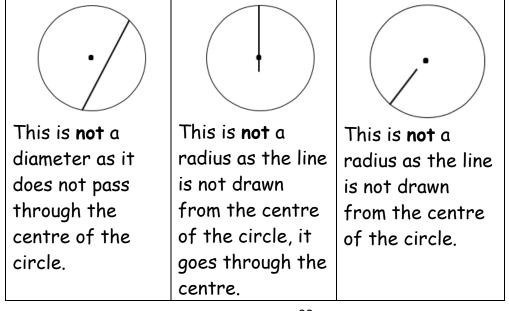
Name	Definition
Diameter	A straight line that passes
	through the centre of a circle
	and touches two points on the
	circumference

Radius (plural radii)	A line drawn from the centre of the circle to the circumference. Stays the same all the way around	diameter radius
Circumference	The perimeter (distance around the outside) of a circle	

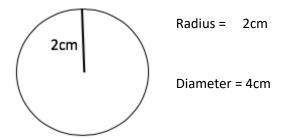
Additional Parts of a Circle to Learn



Non-examples:



Examples:

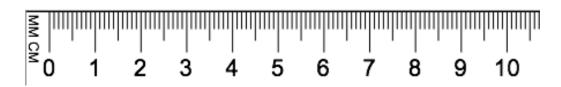


Drawing circles

i) Measuring lines

It is important to measure things accurately. If we do not measure accurately our drawings and answers will be incorrect. This is especially important for architects, builders and designers.

Remember 1cm = 10mm and 1mm = 0.1cm. On your ruler, each small line represents 1 mm or 0.1cm.



Remember - when measuring, we always start on zero (0).

Measure the line below to the nearest 0.1cm

Measure the line below to the nearest tenth of a centimetre.

[Remember a tenth is 0.1]

Measure the line below to one decimal place.

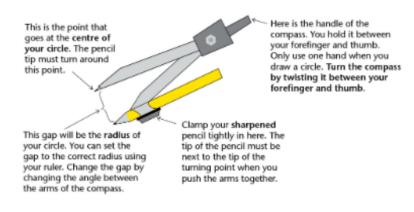
Draw a line exactly 6.3cm long in the space below.

Draw a line exactly 10.6cm long in the space below.

EQUIPMENT NEEDED: Ruler and compass

ii) Drawing circles given the radius or diameter

We need a special instrument called a pair of compasses, often just called a compass to draw a circle.



Negative Numbers

Getting the language right, especially the difference between "negative" and "subtract" is crucial.

We should not use "minus" or "plus" when saying these calculations, these words as not helpful.

5	Should be read as "five", it means
	positive 5
- 5 or	should be read as "negative five"
(-5)	
2 - 5	should be read as "two subtract five
= -3	equals negative three"
	equals negative three" should be read as "negative two
-2 -	
-2 - 5 = -7	should be read as "negative two

Inequalities and Negatives

=	Equal to. The left is equal to the right	6 = 2 + 4
≠	Not equal to	- 6 ≠ 6
<	Less than	-5 < -2

>	Greater than	-1 > - 6
≤	Less than or equal to	-5 ≤ x <- 9
2	Greater than or equal to	-5 > x ≥ -8
≈	Approximately	-5.2 ≈ -5

Temperature Number Line

Higher up	Warmer, Bigger	1
Lower down	Colder, Smaller	
	6 is warmer than 2	6> 2
Warmer ↑	2 is colder than 6	2 < 6
+4 +3 +2 +1	-2 is colder than 6	-2 < 6
0 -1 -2 -3 -4 colder	-6 is colder than 2	-6 < 2
√ colder.	-6 is colder than -2	-6 < -2

Ke	Key Facts			
	Any positive number is greater than any negative number			
	With negative numbers, the larger the			
	magnitude, the smaller the number			

Negative Numbers

Integer	A whole positive or 5, -8, 113 negative number		
Positive (number)	A number greater than zero. Above zero on a vertical number line.	8, 0.6, 4000, $\frac{1}{5}$, $2\frac{1}{5}$,	
Negative (number)	A number less than zero . Below zero on a vertical number line.	-8 , -0.6 , -4000 , $-\frac{1}{5}$, $-2\frac{1}{5}$,	
Magnitude	The distance from zero on a number line	-9 has magnitude 9 6 has magnitude 6	

Zero	A number which is	0
	neither positive or	
	negative.	
Zero-pair	A pair of numbers	e.g. 5 and -5
	that sum to make	e.g6 and 6
	zero .	e.g. 4.5 and -4.5
Ascending	Going up from	-1, 0, 1, 2, 3, 4, 5, 6
(order)	smallest to biggest.	
Descending	Going down from	6, 5, 4, 3, 2, 1, 0, -1
(order)	biggest to smallest .	
Vertical	A straight line that	
(number	rises upwards	
line)	perpendicular to	
	the floor	
Horizontal	A straight line	
(number	that goes across,	
line)	parallel with the	
	floor	
Bracket	Used to show	(-3) = negative 3
	multiplication,	$(-3)(-2) = -3 \times -2 =$
	order of priority or	+6
	to separate	
	negative numbers	

Percentages

P	ercentages (and Proportions	
1	Percent	Out of 100. From the Latin, "per centum" meaning "for each hundred"	$\frac{36}{100}$ = 36%
2	Original	Before a change, at the start.	
3	Equivalent	Has equal value.	
4	Factor of 100	Number that divides into 100 leaving no remainder. Useful when converting fractions into percentages	1, 2, 4, 5, 10, 20, 25, 50, 100
5	Terminating	A number (decimal or percentage) which ends.	$\frac{1}{8}$ = 12.5%

6	Recurring	A number	$\frac{1}{3}$ = 33.3% =
		(decimal or	33.33333%
		percentage)	$\frac{4}{11}$ = 36.36% =
		which repeats in	36.3636%
		the same	00.00070
		pattern.	
		Shown with dot	
		over the digits	
		that repeat.	

Percentage Calculations (Command words in italics)

Truites		
Express one thing as a % of another	$\frac{Number 1}{Number 2} \times \frac{1}{100}$	 Write as a fraction. Multiply bottom to make it 100. Multiply top by same number.
Express a change as a %	Change Original 100	 Find the change/difference Denominator is original/start Multiply by 100.
Find% of an Amount	100% = Amount% =	 Write percentage statement. Use division or multiplication to get to %. Repeat on both sides. Add together percentages and amounts when necessary.

Increase an amount by%	100% = Amount +% = +	Find percentage of amount.Add on to the original
Decrease or reduce an amount by%	100% = Amount% =	Find percentage of amount.Subtract from the original
Find original given a %	% = Amount 100% =	 Write percentage statement. Use division or multiplication to get back to 100%.

Per	Percentage Multipliers (Calculator Method)				
13	Multiplier		Decimal used to calculate a percentage increase or decrease.		
14	Increase multiplier		100 + % increase 100		
15	Decrease Multiplier	,	<u>100 – % decrease</u> 100		
16	Reverse percenta <u>c</u>	ge	$Original \ Value = rac{New \ value}{Multiplier}$		
Common Fraction, Decimal, Percentage Equivalents			uivalents		
			Fraction	Decimal	Percentage
		17	$\frac{1}{1}$	1	100%

Learn these	18	$\frac{1}{2}$	0.5	50%
equivalents	19	$\frac{1}{10}$	0.1(0)	10%
Use these to help you	20	$\frac{1}{4}$	0.25	25%
find	21		0.75	75%
percentages or fractions	22	1 - 5	0.2(0)	20%
of amounts.	23	2 -	0.4(0)	40%
For example 25% is $\frac{1}{4}$ so	24	3 4 1 5 2 5 3 5 4	0.6(0)	60%
easy way of	25	4 - 5	0.8(0)	80%
finding 25% of 80 is to	26	<u> </u>		
do $\frac{1}{4} \times 80 = \frac{80}{4} =$ 20		1	0.01	1%
Note: a (0) in a bracket means that		100	0.01	1 /0
you do not need it.				

Words And Definitions in Maths

Prime	A number with exactly two factors 1 and itself	2,3,5,7,11,13,17,19, 23,29
Even	A number that is divisible by 2	2, 6, 18, 26, 30, 86, 100, 520
Odd	A number that will not divide into another number without leaving a remainder	27 ÷ 5 = 5 r2 49 ÷ 4 = 12 r1
Multiples	A multiple of a number is any number in its times tables	12 is a multiple of 3 25 is a multiple of 5
Square (x²)	The result when an integer is multiplied by itself	1x1, 2x2, 3x3,4x4 5x5, 6x6
Square Root	The root of the square number	$^{2}\sqrt{25} = 5$ $5 \times 5 = 25$
Integer	A whole positive or negative number	32,20,54,8 -8, -32, -12, -6
Cube Number (x³)	A number multiplied by itself 3 times.	1x1x1=1 2x2x2=8, 3x3x3=27 10x10x10=1000

Cube Root	The root of a Cube number	³√8=2
3/-		2 x 2 x 2 =8
·		
BIDMAS	The order of operations that we have to follow in	3+(6×4)-15=12
	maths	$9 \times 3 + 5^2 = 52$
	B (brackets)	
	I (indices)	
	D (division) M (multiplication)	
	A (addition) 5	
	(subtraction)	
Area	The space inside a 2d	3
7.11 54	shape	4
		Base x height
		$3 \times 4 = 12 \text{cm}^2$
	The area of a triangle is	Base x Perpendicular height
Area of	half the area of a square/rectangle	10 2
Triangle		10 x 2=20
		2 2
		10cm ² Type equation here.
1		

Perimeter	The distance around a shape (Add all the sides)	5 6 5 6 5+6+5+6=22
Regular (square)	All sides and all angles equal Angles = 90°	4
Regular (rectangle)	Two pairs of equal sides and two pairs of equal angles	
Irregular Shape	All sides and angles are different	
Triangle	three sides and three angles Right angled: has one Right angle Equilateral: all sides and angles are equal Isosceles: Two equal sides and base angles are equal Scalene: No equal sides and no equal angles	Right Angled Equilateral Scalene
Quadrilateral	Has four sides and four angles	

Five-sided shape	
Six-sided shape	
Seven-sided shape	
Eight-sided shape	
Nine-sided shape	
Ten-sided shape	
The most common value	2,2,4, <mark>5,5,5,</mark> 6,8,9 Mode =5
	Six-sided shape Seven-sided shape Eight-sided shape Nine-sided shape Ten-sided shape

Median	The middle value	3,7,9,7,6,13,1
	(List values in order first)	1,3,6 <mark>,7</mark> ,7,9,13 Median =7
Mean	Add all the values together	7,3,5
	and then divide by the number of values you have	7+3+5=15
	,	15÷3=5 Mean = 5
Range	Biggest value subtracts smallest value	1,1,3,3,5,6,14
	smallest value	Range = 14 - 1 = 13
Numerator	The top number of a fraction	5 Numerator
	Traction	7
Denominator	The bottom number of a	5
	fraction	7 →Denominator
Improper	A fraction where the top	Improper Fractions
Improper Fraction	A fraction where the top number is bigger than the bottom number	Improper Fractions The numerator This shows us the number of pieces we have.
· · ·	number is bigger than the	The numerator This shows us the number
· · ·	number is bigger than the	The numerator This shows us the number of pieces we have. 7 The denominator This shows us the number of parts we are dividing by. $\frac{11}{29} = 2\frac{1}{2}$ $\frac{29}{20} = 3\frac{2}{2}$
Fraction	number is bigger than the bottom number	The numerator This shows us the number of pieces we have. 7 The denominator this shows us the number of purts we are dividing by.
Fraction	number is bigger than the bottom number A number written as a whole number and a fraction Root word for meaning a	The numerator This shows us the number of pieces we have. 7 The denominator This shows us the number of parts we are dividing by. $\frac{11}{29} = 2\frac{1}{2}$ $\frac{29}{20} = 3\frac{2}{2}$
Fraction Mixed Number	number is bigger than the bottom number A number written as a whole number and a fraction	The numerator This shows us the number of pieces we have. 7 The denominator This shows us the number of parts we are dividing by. $\frac{11}{5} = 2\frac{1}{5}$ $\frac{29}{9} = 3\frac{2}{9}$

Cent	Root word for meaning a hundred	Percent = per 100 (century) (cents) (century) (cents) (cents) (century) (cents) (percent) (percent) (percent) (century) (cents) (percent) (percent) (percent) (century) (century) (cents) (percent) (percent)
Mm	Millimetre a measurement of length to one thousandth of a metre 10mm = 1 cm	5 mm
Cm	Centimetre a measurement of length to one hundredth of a metre 100cm = 1 metre	dimensionzen.com
M	Metre a measurement of length equal to 39.37 inches	
Km	Kilometre a measurement of length or distance as in 1000 metres	A LONG HIN! IN THE WOODS 1,000 meters 3 killometer GSENSY.com
mg	Milligram a unit of weight (mass) equal to one thousandth (1/1000) of a gram	Medicine Vitamins 8 Minerals Tiny insects
9	Gram a unit of weight equal to one thousandth of a kg	

kg	Kilogram a unit of weight equal to 1000 g	
Т	Tonne a unit of weight equal to 1000 kg	SplashLeam
Diameter	A straight line that passes through the centre of a circle and touches two points on the circumference	Diameter (d)
Radius	A line from the centre to the circumference	Radius of a Circle Radius
Circumference	The perimeter (distance around the outside) of a circle	Circumference

Operational Words

+	-	÷	×
Add	Subtract	Divide	Lots of
More	Minus	Divided by	Times
Plus	Leave	Divided into	Multiply
Sum	Take away	Share	Groups of
Total	Difference	Share equally	Product
Altogether	Fewer than	Equal groups of	Multiplied by
Increase	Deduct	Goes into	Multiple of
Increased by	Decreased by	Quotient	Repeated addition
More than	Less	Split	Array
	Reduce		