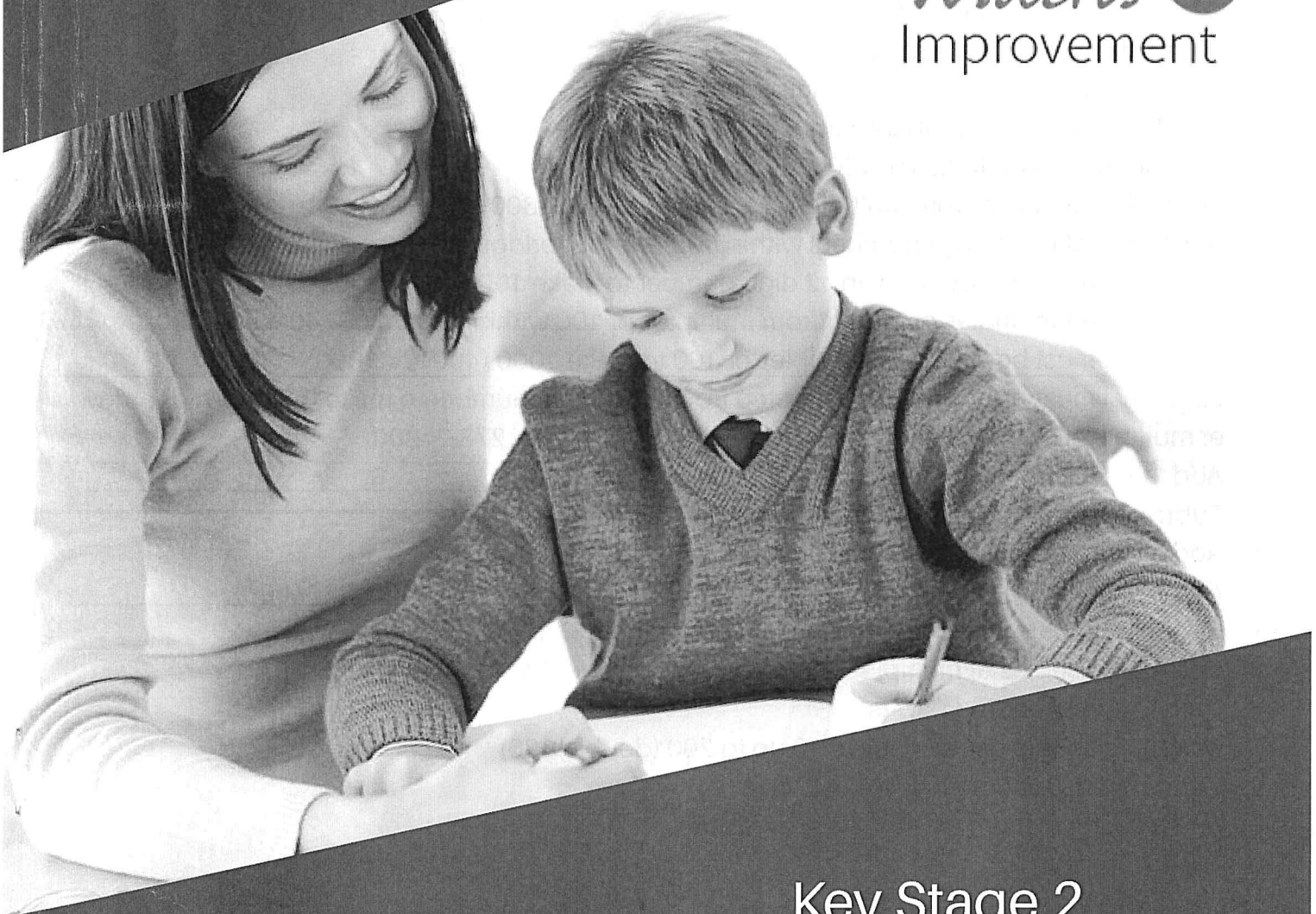
Help at Home

Parent Booklet

Maths NI Improvement



Key Stage 2

Targets & Strategies

During KS2 your child may be working towards achieving and being competent in the following areas:

P5

- Read/write simple fraction notation
- Count forwards/backwards in halves, quarters
- Know near doubles within 20 (8+7)
- Know components of the number 20 (16+4)
- Know all remaining addition facts within 20
- Add 3 single digit numbers
- Subtract any number from 20
- Know all remaining subtraction facts within 20
- Find halves of even numbers within 20
- Find doubles of multiples of 100 up to 500+500
- Add/subtract 100 to/from multiples of 100 within 1000 (300+100, 700-100)
- Add/subtract two 2 digit numbers within 100, without bridging 10 (35+22, 67-34)
- Find what must be added to any 2 digit number to make 100 (34+?=100)
- Add/subtract multiples of 100 to/from multiples of 100 within 1000 (300+400, 900-300)
- Find what must be added to multiples of 100 to make 1000 (400+?= 1000)
- Find what must be added to/subtracted from any 3 digit number to make the next higher/lower multiple of 10, 10 (234+?=240, 456-?=450, 647+?=700, 278-?=200)
- Add 100 to any 2 or 3 digit number within 1000 (345+100)
- Subtract 100 from any 3 digit number (478-100)
- Add a multiple of 100 to a 2-digit multiple of 10 (30+400)
- Add a multiple of 100 to any 2 or 3 digit number within 1000 (34+400, 327+500)
- Subtract a multiple of 100 from any 3 digit number (578-300)
- Calculate doubles of multiples of 50, answers within 1000 (double 450)
- Derive corresponding halves
- Calculate double of multiples of 10 up to 200 (double 130)
- Derive corresponding halves
- Know multiplication facts for 3's, 4's x. Tables

Targets & Strategies

P6

- Count, read and write any number, including a decimal number. E.g. 3.05
- Put a set of numbers, including decimals, in order of size. E.g. 3.03, 3.3, 3.31, 30001
- Know the pairs of numbers which make one hundred - e.g. 46+54
- Add two numbers in their heads. E.g. 34+15+9+2
- Add or subtract multiples of 10 or 100. E.g. 3046-800
- Subtract one number from another when the numbers are close. E.g. 609-587
- Subtract one number from another when the numbers are not close. E.g. 514-29
- Know their tables up to 10x10 and be able to use these facts to do simple divisions. E.g. 4x8=? And 32 ÷4=?
- Multiply or divide by 10 or 100. E.g. 13x10, 245x100, 5.2x10, 350÷10
- Multiply a 2-digit number. E.g. 5x14
- Double and halve numbers to 1000

P7

- Count, read, write, order numbers to 100,000
- Estimate the total of 2 or 3 items in a shopping list (£2.99+£4.49+£1.99)
- Count read write order decimal numbers to 2dp
- Find simple non-unitary fractions of quantities by dividing by denominator, multiplying by numerator (2/3 of 15)
- Find 20%, 30%, 40% ... 90% of quantities by finding 10% and multiplying appropriately (40% of 80)
- Add 4 or more single digit numbers
- Add any number to a multiple of 1000 (4000+423)
- Subtract a multiple of 1000 from any 4 digit number (4567-3000)
- Add any 2 digit numbers including bridging the 10 and 100 (67+77)
- Subtract a 2 digit multiple of 10 from any 3 digit multiple of 10 without bridging through the hundred (670-430)
- Add/subtract decimals to 1 dp decimal number greater than 1 to make the next whole number (23.2+?=24)
- Multiply a 2 digit multiple of 10 by a single digit (40x7)
- Multiply a 3 digit multiple of 100 by a single digit (400x7)
- Multiply a 3 digit number by 100 (456x100)
- Multiply two 2 digit multiples of 10 (30x60)
- Divide whole numbers by 100, whole number answers (4600÷100)

Times Table Square

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

Multiplication Cards

Useful Websites:

www.mathsisfun.com

- Homepage > Numbers
- Multiplication > Maths Trainer

Really good way to train your child when they have a good understanding of multiplying.

www.topmarksmaths.co.uk

- Whiteboard Resources > KS1
- Multiplication and Division

1. Ghostblasters
2. Multiplication Explorer
3. Gordons Multiplication

www.topmarksmaths.co.uk

- Whiteboard Resources > KS2
- Multiplication and Division

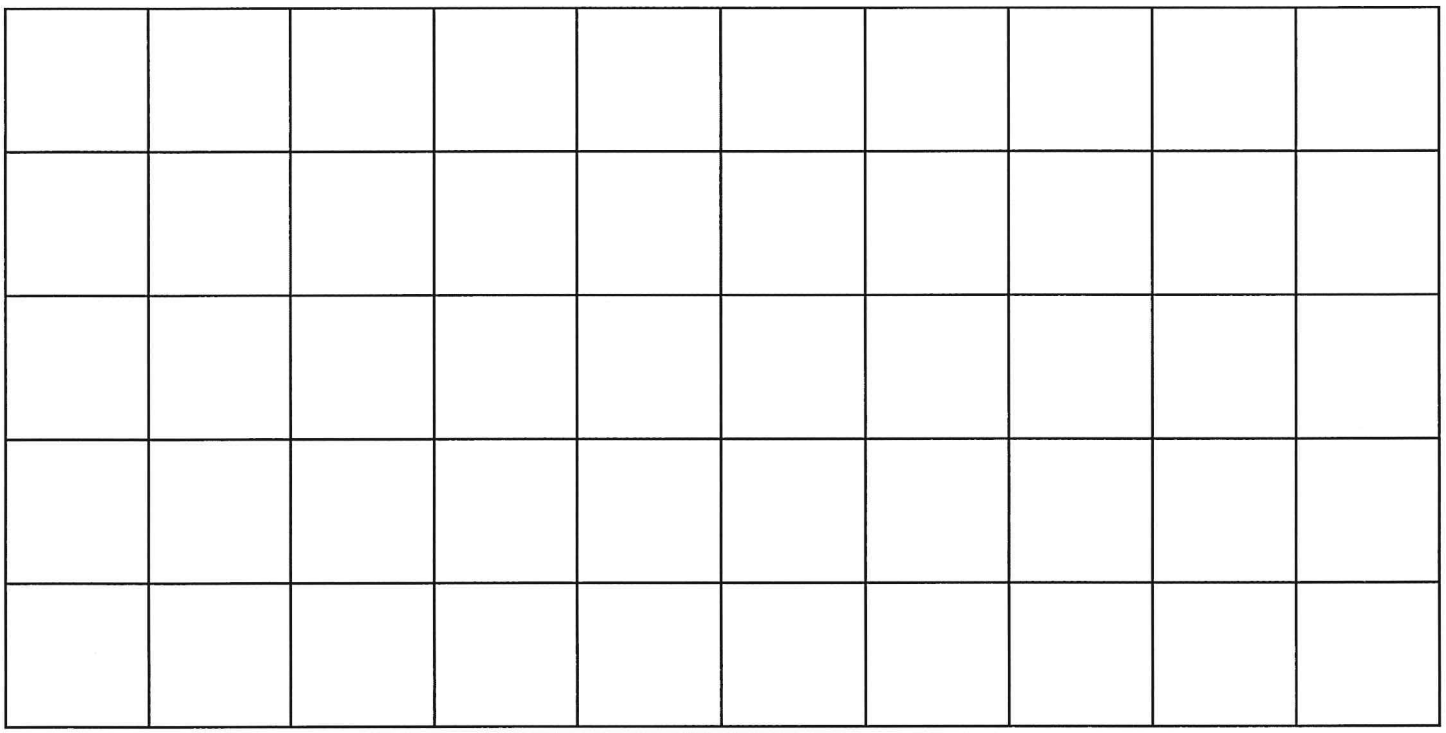
1. Spinners
2. Function Wheel

www.google.com

- Search 'Woodlands Mathszone'
- Timestables > Timestables Games

For all of the above websites these are only some examples, you can feel free to try other games as well!

Blank Grids to help with multiplication



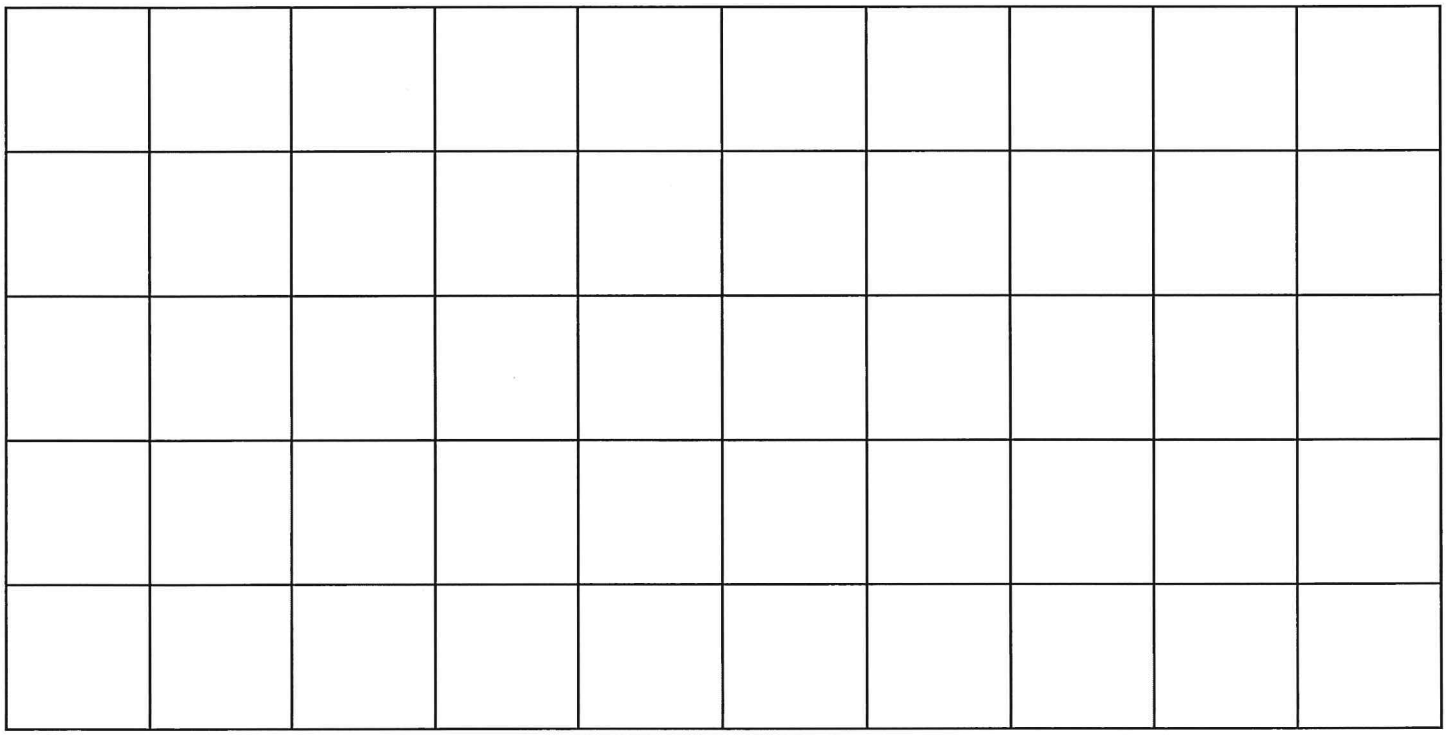


Table Patterns (2, 4, 8)

a) Get your child to use the Blank Grid on page 6 In the spaces on the top strip (using a pencil) write out the counting in 2s E.g.

2	4	6	8	10	12	14	16	18	20

b) In the spaces on the strip directly below (using a pencil) write out the counting in 4s:

4	8	12	16	20	24	28	32	36	40

Problem Solve: What do you notice?

c) Cover a number(s) and ask what number is missing? How did you know?

d) In the spaces on the strip directly below(using a pencil)write out counting in 8s

8	16	24	32	40	48	56	64	72	80

e) Repeat 'c'

f) Rub out pencil marks and repeat 4a-c with counting in 5s and 10s

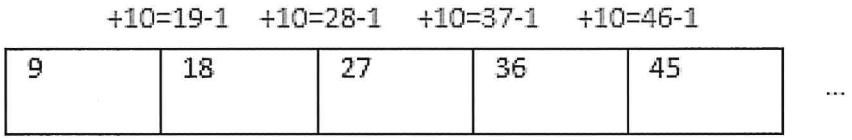
g) Rub out pencil marks and repeat 4a-c with counting in 3s and 6s

9 Times

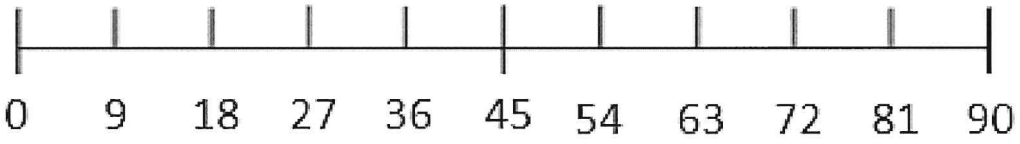
a) You can help with tables beyond 5 too e.g. 9 times tables.

Tip: Always remember that 9 = 10-1

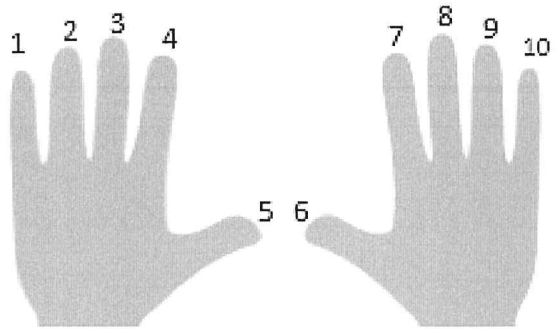
b) Encourage them to count on 10-1 as they are doing the count. E.g.



c) Get your child to draw these on an ENL.



d) You can help your child with little 'tips' on 9 times tables too when they have a good understanding. E.g. Number your fingers (and thumbs) 1-10 from left to right. Choose any number 1 -10, for example; 7. Put down your 7th finger. Ask your child how many fingers they have raised to the left? (Answer = 6). How many fingers they have raised to the right? (Answer = 3)



No Friends! '7 Times'

a) The 7 Times tables seem to have no 'friends at all. Yet if we know all the rest of them, things should be easier.

b) Get your child to make or take out a 10 strip. Ask them to put on the multiples of 7 (7 Times Tables) that they definitely know. E.g.

7	14			35					70

c) Now help them to fill in the missing ones by asking questions like;

a. What is 14 + 7 (14 + 6 + 1) = 20 + 1 = 21
b. What is 21 + 7 (1 + 7 = 8) so 21 + 7 = 28
c. What is 35 + 7 (35 + 5 + 2) = 40 + 2 = 42
d. What is 42 + 7 (2 + 7 = 9) so 42 + 7 = 49
e. What is 49 + 7 (49 + 1 + 6) = 50 + 6 = 56
f. What is 56 + 7 (56 + 4 + 3) = 60 + 3 = 63
g. What is 63 + 7 (3 + 7 = 10) so 60 + 10 = 70

d) Sometimes with tables more than 5 times it is easier if we split up the multiply sum.

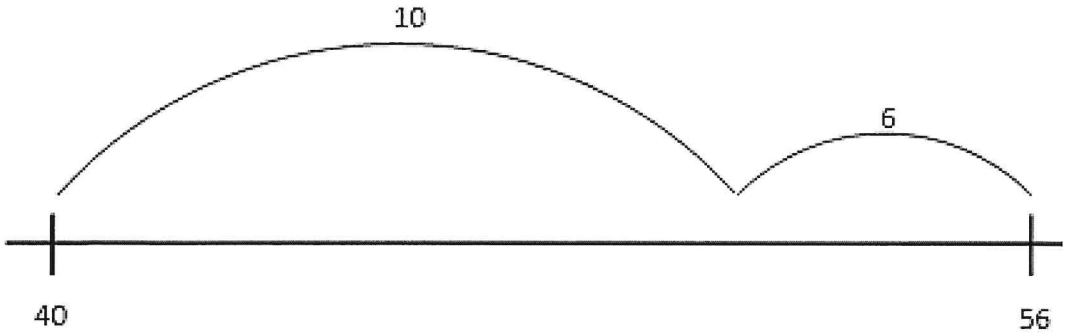
E.g. What is 7x8?

But I do know (5) x 8 = 40

\+

(2) x 8 = +16

56



Data Handling

1. Go to www.topmarksmaths.co.uk - whiteboard resources - KS2.

   Get your child to play/practise some of the following good challenging activities (and you as well!)

   a) Bar Charts

   b) Carroll Diagrams

   c) Data Handling

2. Sit down with your child and design a simple bar chart e.g. favourite teams, xbox games etc.

Shape and Space

1. Go to www.topmarksmaths.co.uk - whiteboard resources - KS2
   a. Get your child to play some of the following games (you sit down and play too!)
      i. Symmetry
      ii. Reflections
      iii. Symmetry Game
      iv. Belly Bug (Co-Ordination)
      v. Co-Ordinate Cards

2. Google - oswegomaths - Go to resources oswego.org/games
   a. Go to Banana Hunt

3. Look for things in your house with lines of symmetry e.g. windows, doors, tables etc.

Measures

Remember;

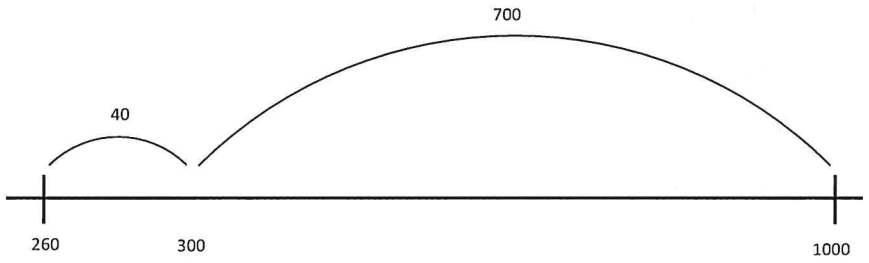
10mm = 1cm	500g - 1/2Kg
100cm - 1m	250g - 1/4Kg
1000m - 1km	1000ml - 1l
500m - 1/2km	500ml - 1/2l
250m - 1/4km	250ml - 1/4l
1000g - 1Kg	

a) Give your child practice in counting on when using m, g, ml to nearest km, kg, l (Follow these examples).

Example 1:

If I walk 260m, how much more do I need to walk to reach 1km (1000m)?

Tip: Use the Empty Number Line



Answer = 740m

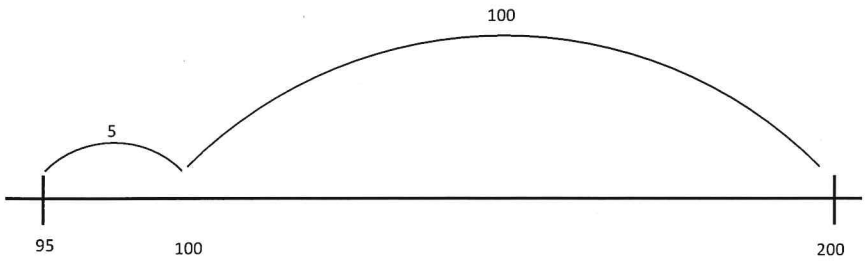
a) Mark 260m and 1000m

b) Mark in next hundred to 260 i.e.300 and show 'hop' forward (40m)

c) Show the hop from 300-1000 i.e. 700.

Example 2:

My water bottle holds 200ml and I have drank 95ml. How much have I left?

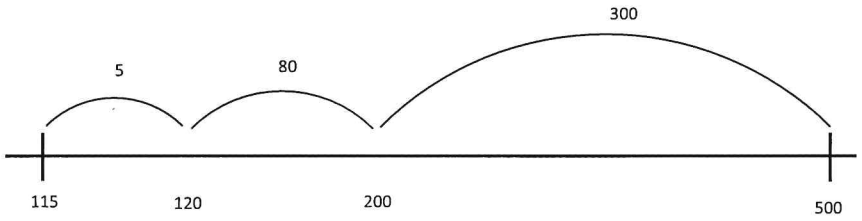


Answer = 105ml

Measures

Example 3:

A bag of sugar holds 500g. I use 115g for baking a cake. How much have I got left?



Answer = 385g

Tip:

a) Mark in 115g and 500g

b) Count on 5 from 115 to next 10 (120)

c) Count on 80 to next 100 (200)

d) Count on 300 to make 500.

Good activities on topmarksmaths.co.uk - whiteboard resources - KS2

a. Understanding Measures
b. Temperature
c. Dartboard Rounding

a) Give your child time to explore various measures.

E.g. 1. Cooking: What ingredients are needed?

How much of each ingredient?

(This can be formal like 10g of sugar, 2g of salt and 100g of flour etc. OR informal like a tablespoon of sugar, 3 handfuls of flour etc.)

E.g. 2. Length of garden shed: How many child's strides?

How many child's footsteps?

Do you need to measure it all? (Maybe halfway may do!)

E.g. 3. Filling the 2 litre milk carton with 100ml glass. How many do you think it will be? Were you correct?

Time

Things I Need for Time

Materials:

- Clock (in wallet)

Useful Websites:

www.topmarksmaths.co.uk

- Whiteboard Resources
- KS2
- Measures

www.topmarksmaths.co.uk - Whiteboard Resources KS2 - Measures

a) Class Clock

Give your child plenty of practice setting the 'Class Clock' to different times and get them to do the same with the one provided in the wallet.

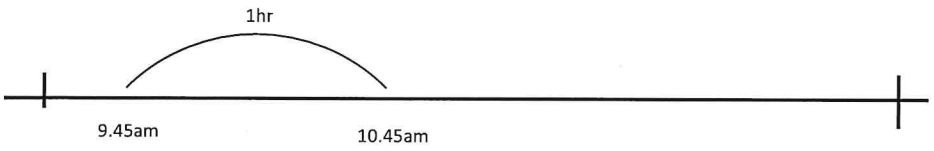
Teaching Tip: Start with o'clocks, then half past, quarter past, quarter to etc.

Make sure your child follows what they see on the 'Class Clock' activities.

b) Get your child to add/take away some times now e.g. 1hr, 1/2hr (30 mins), 1/4 hr (15mins) etc. Get them to do these with their own clock.

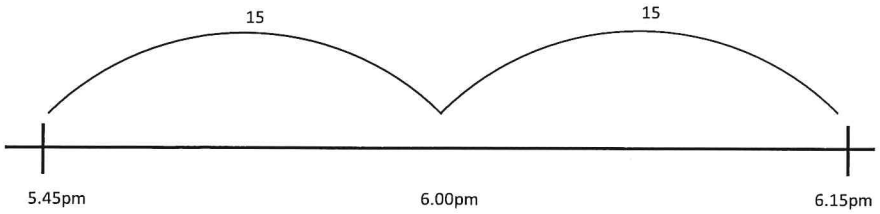
Show some of these on an Empty Number Line (ENL)

a. E.g. - 9.45am + 1hr



Answer = 10.45am

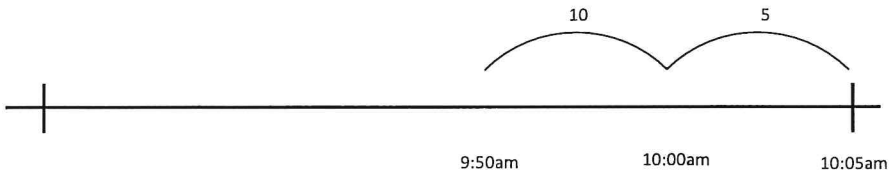
b. E.g. - 5.45pm + 1/2 hour (30 mins)



Answer = 6.15pm

Time

a. E.g. - 10:05am - 1/4hr (15mins)



Answer = 9:50am

a) Other good activities from 'Measures related to Time' (topmarksmaths website) include;

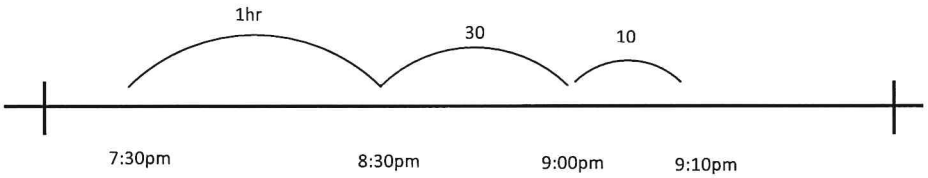
   a. Clock

   b. On Time - Advanced Level

   c. Telling the Time

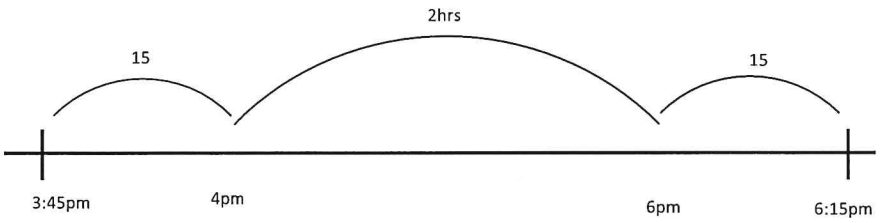
b) Give your child more practice in adding/taking away times of everyday events using Empty Number Lines (ENLs)

   a. Example 1: The film starts at 7.30pm and goes on for 1hr 40mins. What time is it over at?



Answer: 9:10pm

f. Example 2: If I get home from school at 3.45pm and get my tea at 6.15pm, how long do I have to wait?



Answer: 2hrs 30mins

Tip: Count on minutes to next 'O'Clock' (15mins) and then how many hours to next 'O'Clock' (2hr) and then count on minutes from 'O'Clock' (15mins).

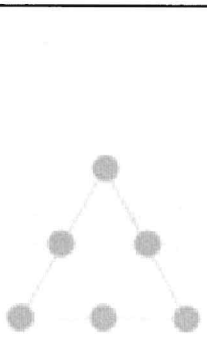
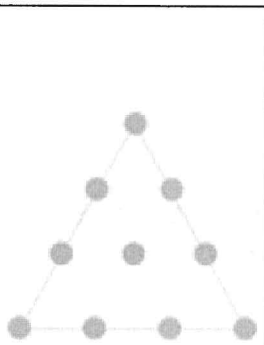
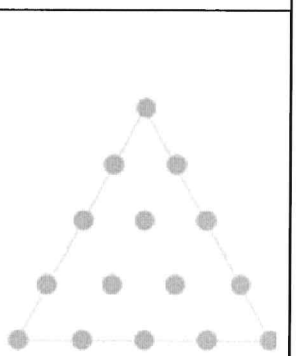
Numbers

Prime numbers

- Prime numbers are special numbers that can only be divided by themselves and 1
- 19 is a prime number. It can only be divided by 1 and 19.
- The number 1 is not thought of as a prime number.
- 9 is not a prime number. It can be divided by 3 as well as 1 and 9.
- The prime numbers below 20 are: 2, 3, 5, 7, 11, 13, 17, 19

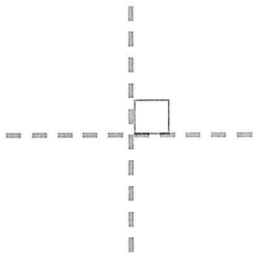
Triangular Numbers

- A number than can make a triangular dot pattern.
- Example: 1, 3, 6 and 10 are triangular numbers

1	2	3	4	5
				
1 Dot	3 Dots	6 Dots	10 Dots	15 Dots

Lines

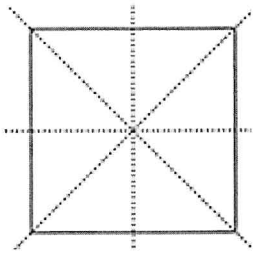
Parallel lines are always the same distance apart.



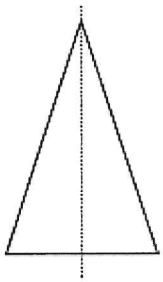
Perpendicular lines cross at right angles

Lines of Symmetry

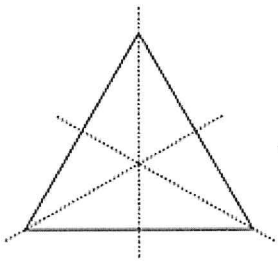
A 2D shape is symmetrical if a line can be drawn through it so that either side of the line looks exactly the same. The line is called a line of symmetry.



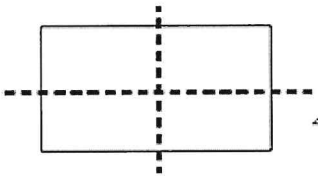
Square
4 lines of symmetry



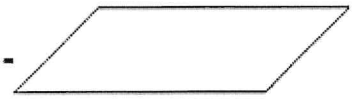
Isosceles Triangle
1 line of symmetry



Equilateral Triangle
3 lines of symmetry



Rectangle
2 lines of symmetry

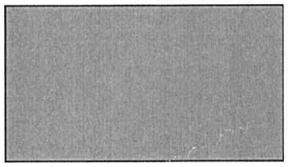


Parallelogram
0 lines of symmetry

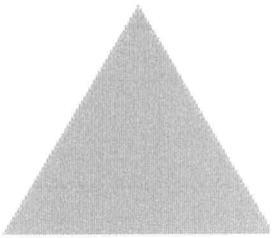
Shapes

2D Shapes

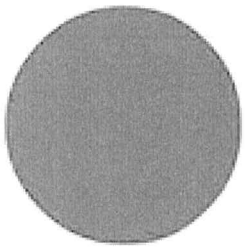
- Squares have 4 straight sides and 4 corners.
- All the sides are the same length



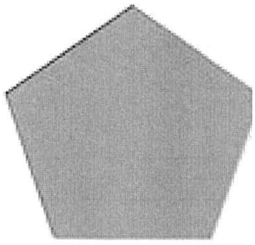
- Rectangles have 4 sides and 4 corners.
- They have 2 long sides and 2 short sides.



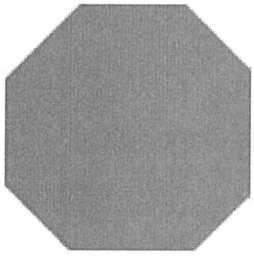
- Triangles have 3 sides and 3 corners.



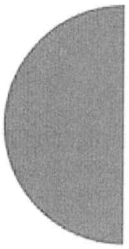
- Circles only have one side and no corners.



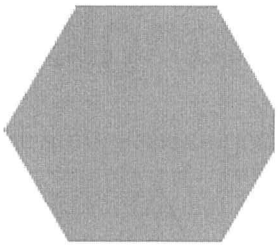
- This is a pentagon.
- It has 5 straight sides and 5 corners.
- All the sides are the same length.



- This is an octagon.
- It has 8 sides and 8 corners.
- All the sides are the same length.

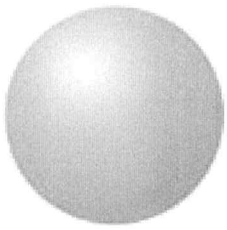


- A semi-circle has one straight side and one curved side.
- 2 semi-circles make a circle.



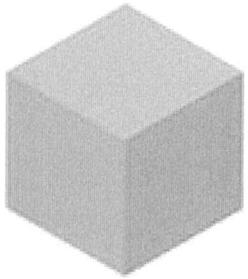
- This is a hexagon.
- It has 6 sides and 6 corners.
- All the sides are the same length

3D Shapes

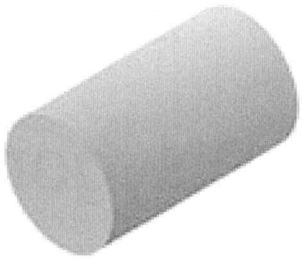


This 3D shape has not flat faces and no straight edges. It has just one curved face.
This is a sphere.

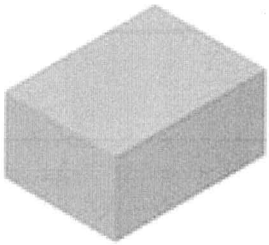
This 3D shape has one curved face and one flat face. The flat face is a circle.
This is a cone.



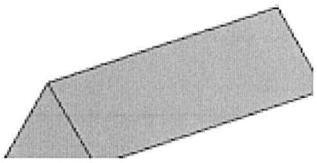
This 3D shape has 6 flat square faces, 12 straight edges and 8 corners.
This is a cube.



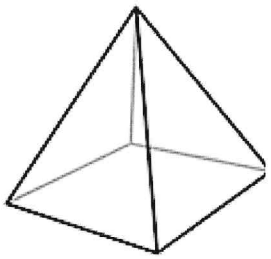
This 3D shape has one curved face and 2 flat circular faces.
This is a cylinder.



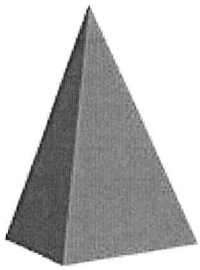
This 3D shape has 6 flat faces; 2 are squares and 4 are rectangles. It has 12 straight edges and 8 corners.
This is a cuboid.



This 3D shape has 5 flat faces; 2 are triangles and 3 are rectangles. It has 9 straight edges and 6 corners.
This is a triangular prism.



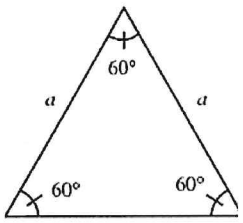
This 3D shape has 5 flat faces; 4 are triangles and 1 is a square. It has 8 straight edges and 5 corners.
This is a square based pyramid.



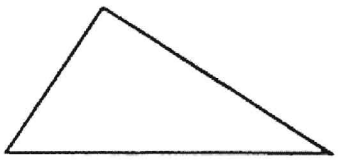
This 3D shape has 4 flat triangular faces. It has 6 straight edges and 4 corners.
This is a triangular based pyramid.

Triangles

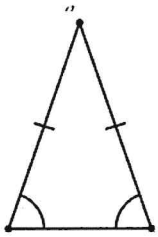
Triangles have three sides. There are many different types of triangles:



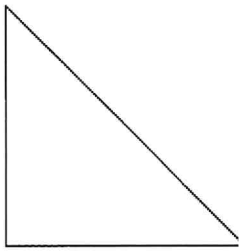
- 3 equal sides
- 3 equal angles of 60o



- No equal sides
- No equal angles



- 2 equal sides
- 2 equal angles



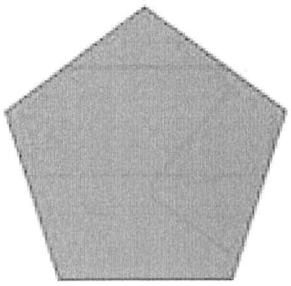
- One of its angles is a right angle (90 o)

Polygons

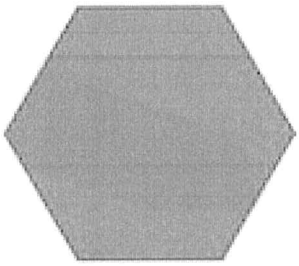
Polygons are shapes with many straight sides:

- Regular polygons have equal angles and sides of equal length
- Irregular polygons have sides of different lengths

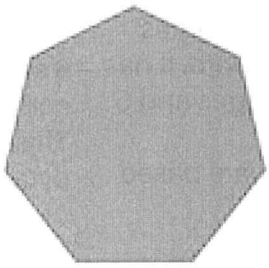
Here are some common polygons:



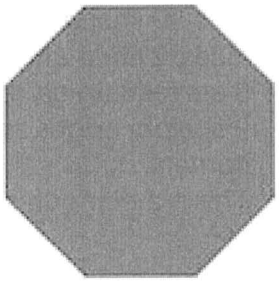
Pentagons have 5 sides



Hexagons have 6 sides



Heptagons have 7 sides

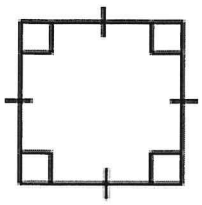


Octagons have 8 sides

Quadrilaterals

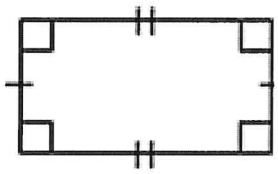
Quadrilaterals have four sides. Here are some special quadrilaterals:

Square



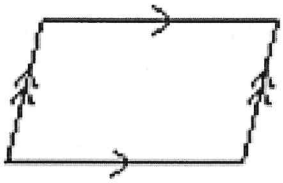
- 4 equal sides
- 4 right angles

Rectangle



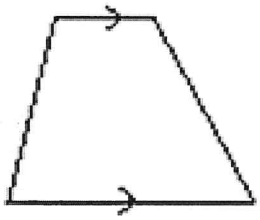
- 2 pairs of equal sides
- 4 right angles

Parrellelogram (squashed rectangle)



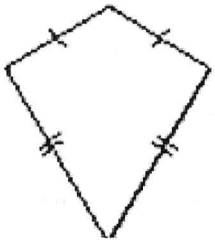
- 2 pairs of equal sides
- Opposite sides are parallel
- Opposite angles are equal

Trapezium



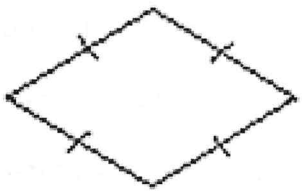
- One pair of parallel sides of different lengths

Kite



- 2 pairs of equal sides next to each other
- No parallel sides

Rhombus (squashed square)



- 4 equal sides
- Opposite sides are parallel
- Opposite angles are equal

Multiplication Definitions

Here are some of the words which we use when doing multiplication sums. Have look below to see how they can be used in the simple sum 2x2=4.

Multiply	•If you multiply 2 by 2 you get 4.
Multiple	•4 is a multiple of 2.
Times	•2 times 2 is 4.
Sets of	•2 sets of 2 make 4.
Lots of	•2 lots of 2 make 4.
Groups of	•2 groups of 2 make 4.
Factors	•2 is a factor of 4. One number is a factor of another number if it divides or goes into it exactly.
Product	•The product of 2 and 2 is 4.

Percentages %

Percent means 'out of 100'

- The sign % stands for 'per cent' which means 'out of 100'.

Example:

- 40% means 40 out of 100
- 11% means 11 out of 100

Converting between percentages and decimals

To change a percentage to a decimal, divide by 100

Example:

- Change 48% to a decimal: 48 ÷ 100 = 0.48

To change a decimal to a percentage, multiply by 100

Example:

- Change 0.67 to a percentage: 0.67 x 100 = 67%

Converting between percentages and fractions

Write the percentage as a fraction over 100 and then simplify

Example:

- 60% means 60
- 60 = 6 = 3
- 100 10 5
- Learn these equivalent fractions and percentages
- 1/2 = 50%
- 1/4 = 25%
- 1/10 = 10%
- 3/4 = 75%
- 1/5 = 20%

Percentage of a number

Example:

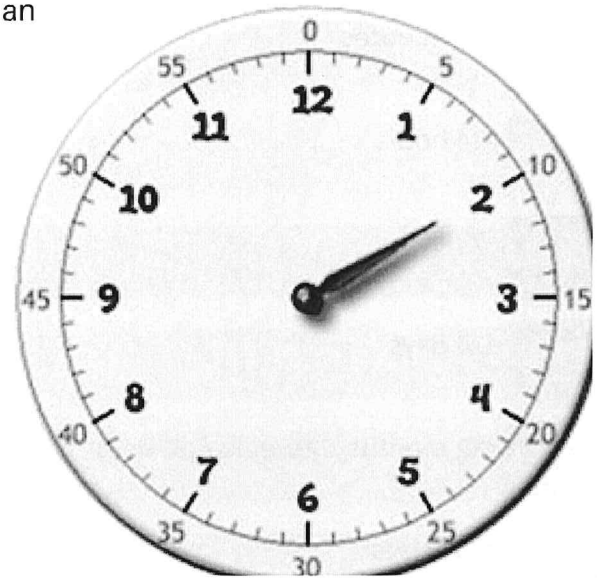
- To find 20% of 30 is to first find 10% of 30 and then multiply by 2.
- 10% of 30 is 30÷10=3
- 2x3=6
- Or recognise that 20% is equivalent to one fifth, and so just divide 30 by 5.
- 30÷5=6

Time

Analogue Clock

There are 60 minutes in an hour.

There are 15 minutes in a quarter of an hour.



There are 5 minutes between each number and the next.

There are 30 minutes in half an hour.

- The **large** hand on a clock is always the minute hand.
- The **small** hand on a clock is always the hour hand.
- Before noon is known as **AM** and afternoon is known as **PM**.

24 Hour Clock

12 Hour Clock	24 Hour Clock		12 Hour Clock	24 Hour Clock
12pm	1200		12am	0000
1pm	1300		1am	0100
2pm	1400		2am	0200
3pm	1500		3am	0300
4pm	1600		4am	0400
5pm	1700		5am	0500
6pm	1800		6am	0600
7pm	1900		7am	0700
8pm	2000		8am	0800
9pm	2100		9am	0900
10pm	2200		10am	1000
11pm	2300		11am	1100

Units of Time

1 minute	•60 seconds
1 hour	•60 minutes
1 day	•24 hours
1 week	•7 days
1 fortnight	•14 days
1 year	•12 months/52 weeks/365 days
1 leap year	•366 days

How Many Days?

Remember:
30 days has September, April, June and November.
All the rest have 31.
Except for February all alone, which has 28 days clear but 29 in each leap year.

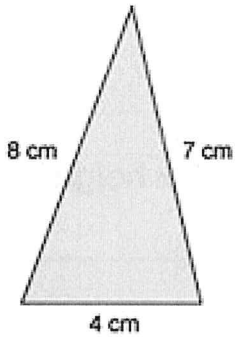
Measuring

Perimeter

What is Perimter?

- The perimter is the distance all the way around the outside of a 2D shape.
- To work out the perimeter, add up the lengths of all the sides.

Example:

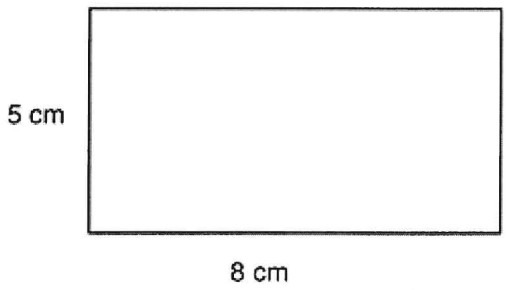


The perimeter of this shape is:

8 + 4 + 7 = 19cm

In a rectangle opposite sides are equal, so to work out the perimeter of a rectangle you just need to know the length and width.

Example:



Here the length is 8 cm and the width 5cm.

Method 1

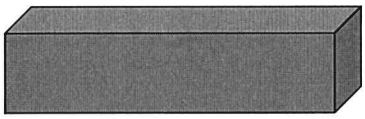
Length = 8cm and width = 5cm
Perimeter = 8 + 5 + 8 + 5 = 26cm

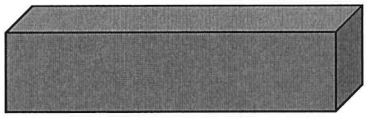
Method 2

Because opposite sides are equal you can also work out the perimeter in this way:
Double the length, double the width, then add the results together.

(8x2) + (5x2) = 16 + 10 = 26

Volume



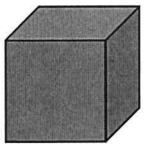


Each of these two cuboids has the same volume, 10 cm3, and the same dimensions: length 5cm, width 2cm, height 1cm.

The volume of the first can be found by counting the unit cubes.

The volume of the second is found using the rule:

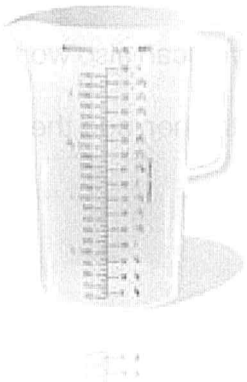
Volume of a cube or cuboid = length x breadth x height



This cube has sides of length 3cm

Its volume is 3 x 3 x 3 = 27cm3

Measuring Capacity



Capacity or volume is a measure of how much space something takes up. Measuring spoons or measuring jugs can be used to measure capacity.

To find the Volume or Capacity of a cube or cuboid container:

Volume = Length x Breadth x Height

Metric Units of Capacity
Capacity is measured in millilitres (ml) and litres (l).

- 1l - 1000ml
- 3/4l - 750 ml
- 1/2l - 500 ml
- 1/4l - 250 ml

Use these tips to estimate capacity:

- 5 ml is about the capacity of a teaspoon.
- 1l is about the capacity of a large carton of fruit uice

Units of measurement:

- cm3
- m3

Imperial units of capacity:

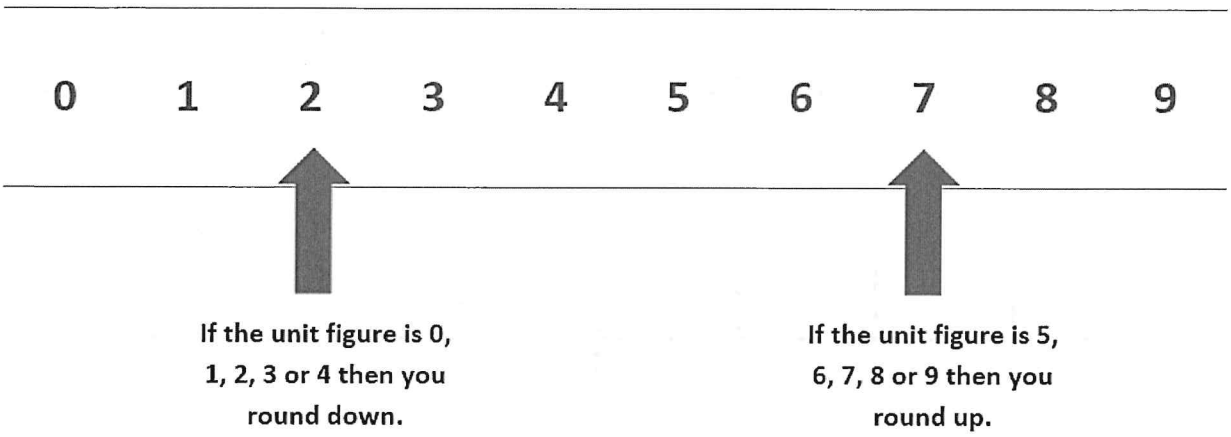
- Pints and gallons are old units of capacity (imperial units)
- There are 8 pints in a gallon
- A pint is equal to just over half a litre
- A gallon is roughly equal to 4.5 litres

Rounding Tens, Hundreds, Thousands

Rounding a number is another way of writing a number approximately. We often don't need to write all the figures in a number, as an approximate one will do.

Rounding to the nearest ten

To round a number to the nearest 10, you have to decide if the number is nearest to 10, 20, 30 etc. To do this you follow a rule.



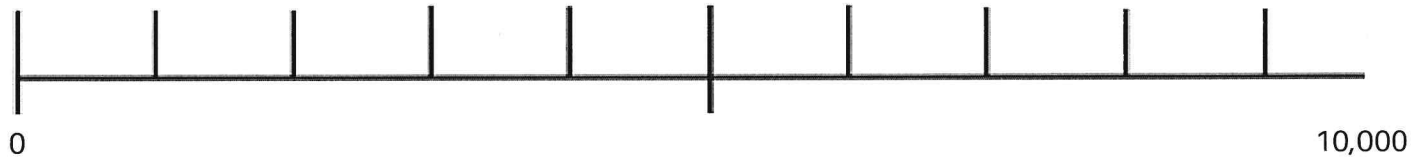
Question: Is 37 nearer to 30 or to 40?

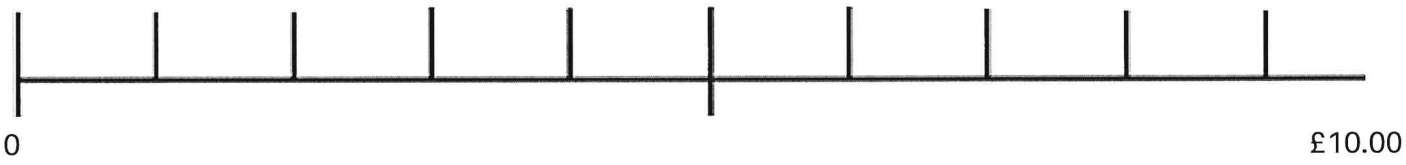
- As the unit figure is 7, you round up to 40.
- Rounding to the nearest 10 can help you estimate the cost of your shopping.

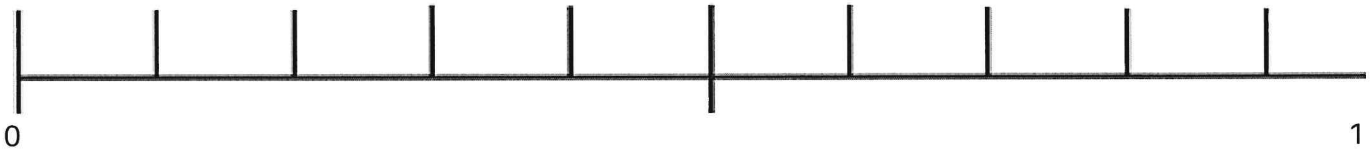
Rounding to the nearest hundred

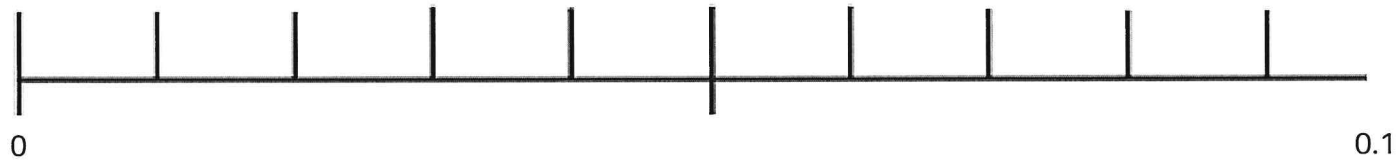
To round a number to the nearest 100, you have to decide if the number is nearest to 100, 200, 300 etc. The rule is the same as for rounding to the nearest 10, but this time look at the tens figure.

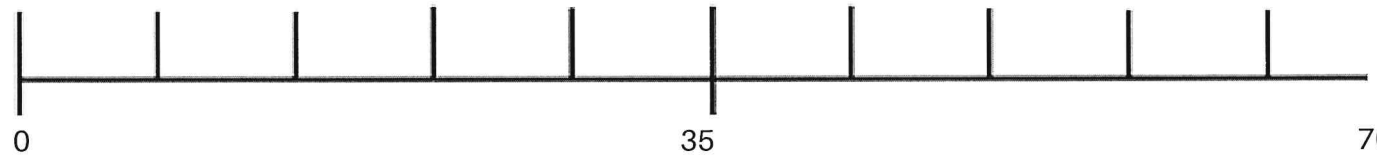
Empty Number Line Ideas (No Strips)











Useful Websites/Links

Website Address	Details
www.woodlands-junior.kent.sch.uk	Go to KS2 maths Or Google 'School Zone'
www.clounagh.org	
www.bbc.co.uk/schools/ks2bitesize/maths	
www.topmarks.co.uk	Go to KS2
www.mathsisfun.co.uk	Good for Multiplication
www.mad4maths.com	
www.ictgames.com	
www.counton.org	

Games

- Jigsaws
- Playing Cards
- Monopoly
- Snakes & Ladders
- Dominoes
- Droughts
- Chess
- Sudoku
- Bingo

Helping out at Home

Out and About

- Change from 50p, £1, £2, £5, £10, £20
- Work out %, fractions 'of' and 'off' e.g. 1/3 off, 25% discount etc.
- 'Buy 1 get 1 free, 6 for 5, 50% extra
- Estimate shopping list
- Credit Card Uses

In the Kitchen

- Cost of a meal for 3, 4 etc
- Sequencing packages in the kitchen – heaviest – lightest
- Cooking times

Around the House

- Symmetry
- Area
- Perimeter
- Direction N, S, E, W, NE, SE, SW, NW etc.