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Targets & Strategies

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

- 75
- 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/low er multiple of I0, I0 (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

- 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.a. 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 I0xI0 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. 5xl4
- Double and halve numbers to 1000

P7

P6

- 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 nu merator (2/3 of I5)
- 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 I dp decimal number greater than I 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

	ı	2	3	4	5	6	7	8	9	10
	2	4	6	8	10	12	14	16	18	20
	3	6	q	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
	q	18	27	36	45	54	63	72	81	OP
	10	20	30	40	50	60	70	80	90	100
ľ										

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 > KSI
- Multiplication and Division
- I. Ghostblasters
- 2. Multiplication Explorer
- 3. Gordons Multiplication

www.topmarksmaths.co.uk

- Whiteboard Resources > KS2
- Multiplication and Division
- I. 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

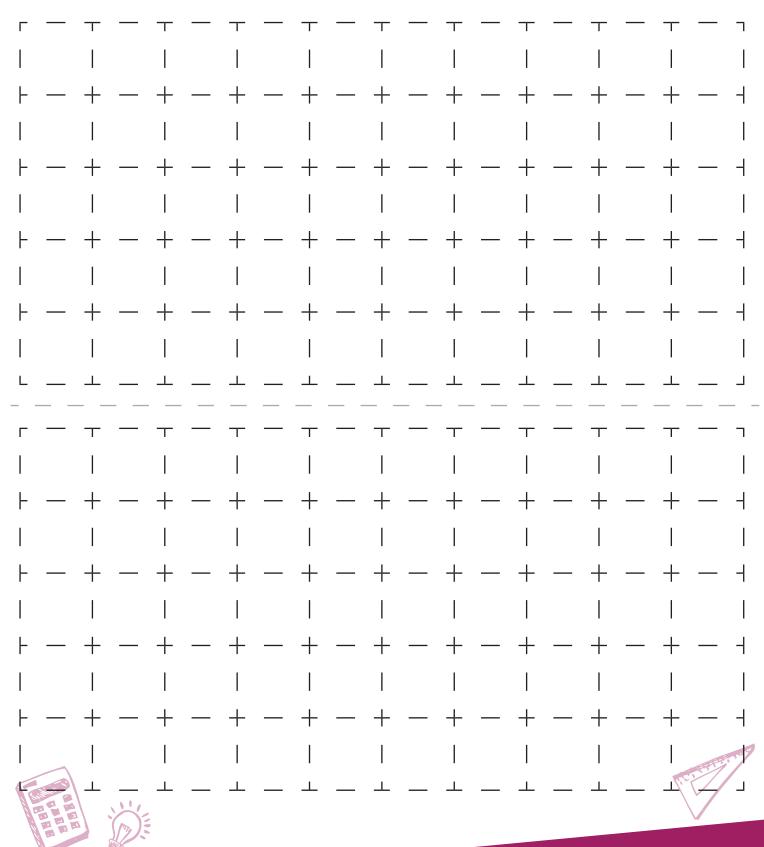


Table Patterns (2, 4, 8)

Q) Get your child to use the Blank Grid on page 7 in the spaces on the top strip (using a pencil) write out the counting in 2s E.g. or copy page/laminate and cut out strips of 10

2 4 6 8 10 12 14 16 18 20

b) In the space 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
- **Q)** Rub out pencil marks and repeat 4a-c with counting in 3s and 6s

9 Times 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. +10 +10 **+10 +10** q 18 27 36 45 37 19 28 46 C) Get your child to draw these on an ENL. 0 q 18 27 36 45 54 63 72 **OP** 81 You can help your child with little 'tips' on 9 times tables too when they have a good understanding. E.g. Number your fingers (adnd thumbs) I - 10 from left to right. Choose any number I - 10, for example; 7. Put down your 7th finger. Ask your child how many fingers they have raised to the left? (Answer = 6 Number of tens). How many fingers they have raised to the right? (Answer = 3 Number of units). 5 6 10 Answer

No Friends '7 Times'

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

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

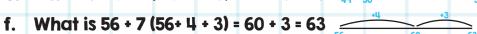




- b. What is 21 + 7 (1 + 7 = 8) so 21 + 7 = 28
- c. What is 35 + 7(35 + 5 + 2) = 40 + 2 = 42



- d. What is 42 + 7 (2 + 2 = 9) so 42 + 7 = 49
- e. What is 49 + 7 (49 + 1 + 6) = 50 + 6 = 56



g. What is 63 + 7 (3 + 7 = 10) so 60 + 10 = 70



E.g. What is 7x8?

l don't know

But I do know (5) x 8 = 40

7 < † |(2) x 8 = +|6

56

10

40

50

6

56

Long Multiplication. What about it?

There eventually comes a point (when the tables are known!) that we need to multiply bigger numbers e.g. a garden measures 37m x 48m. What area does it cover?

Tip No. I: Work out rough answer

37 (nearly 40) x 48 (nearly 50)

40 x 50 = 2000 This is my rough answer.

37

X 48

296

148

444

We can learn from wrong answers!

This is why we have the ROUGH ANSWER

Correct Method

37

296

1480

We need to understand why the "0" appears. In this case to show we are multiplying by 4 tens or 40 and multiplying by 10 moves everything I place to the left

We still do this

1776



Numbers

Prime numbers

- Prime numbers are special numbers that can only be divided by themselves and I
 II is a prime number. It can only be divided by I and II.
- The number I is not thought of as a prime number.
 - 9 is not a prime number. It can be divided by 3 as well as I and 9.
- · The prime numbers below 20 are: 2, 3, 5, 7, II, I3, I7, I9

Triangular Numbers

- · A number than can make a triangular dot pattern.
- Example: I, 3, 6 and I0 are triangular numbers

\pm	ı	2	3	4	5
+	I Dot	3 Dots	6 Dots	I0 Dots	I5 Dots

Percentages 1.

Percent means 'out of 100'

• The sign 7. stands for 'per cent' which means 'out of 100'.

Example:

- · 40% means 40 out of 100
- · II% means II 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

Most important ones!

- · 1/2 = 50%
- · 1/4 = 25%
- · 1/10 = 10%
- · 3/4 = 75%
- · 1/5 = 20%
- · 1/3 = 33 1/37.

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
- · 2×3=6
 - Or recognise that 20% is equivalent to one fifth, and so just divide 30 by 5. 30÷5=6

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.



If the unit figure is 0 I, 2, 3 or 4 you round down If the unit is 5, 6, 7, 8 or 9 then you round up

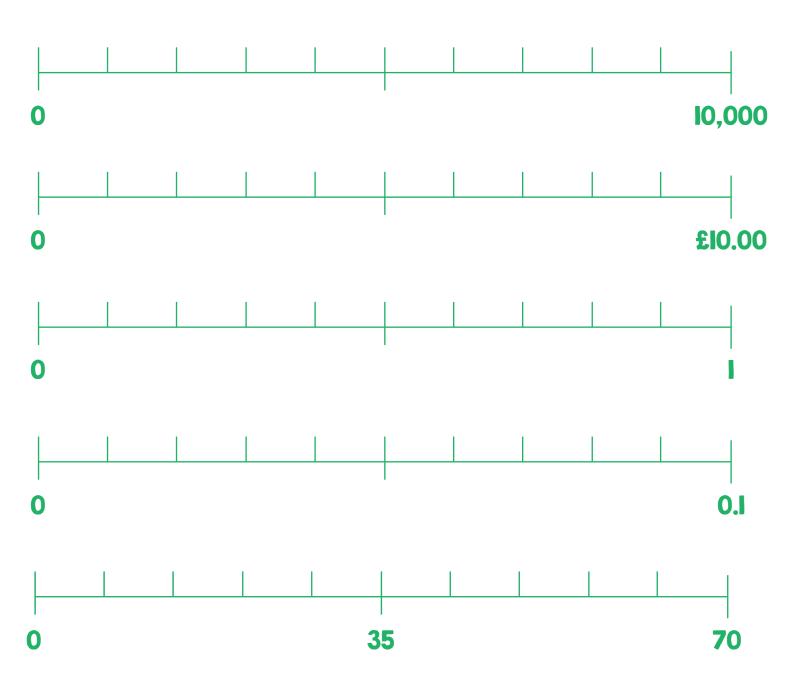
Question: Is 37 nearer to 30 or to 40?

- · 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)







Data Handling

- . Go to www.topmarksmaths.co.uk whiteboard resources KS2. Data Handling

 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

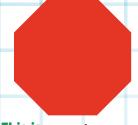
- I. Go to www.topmarksmaths.co.uk whiteboard resources KS2. Shape/Space/Measures
 - a. Get your child to play some of the following games (you sit down and play too!)
 - i. Symmetry
 - ii. Reflections
 - iii. Symmetry Game
 - iv. Belly Bug (Co-Ordination)
 - v. Co-Ordinate Cards
- 2. Google oswegomaths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

Lines Perpendicular lines cross at right angles Parallel lines are always the same distance apart. 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. **Lines of Symmetry** Isosceles Triangle Square **Equilateral Triangle Rectangle Parallelogram** 3 lines of symmetry 4 lines of symmetry 0 lines of symmetry 2 lines of symmetry I line of symmetry Shapes **2D Shapes** Squares have 4 straight Rectangles have 4 **Triangles have 3** Circles only have one sides and 4 corners. sides and 4 corners. side and no corners. sides and 3 corners. All the sides are the They have 2 long sides and 2 short sides. same length



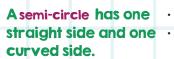


- It has 5 straight sides and 5 corners.
 - All the sides are the same length.



This is an octagon. It has 8 sides and 8 cor ners.

All the sides are the same length.



2 semi-circles make a circle.



It has 6 sides and 6 corners. All the sides are the same length

3D Shapes



This 3D shape has not flat



This is a cone.



This 3D shape has 6 flat This 3D shape has one square faces, 12 straight curved face and 2 flat It has just one curved face. face. The flat face is a circledges and 8 corners. circular faces.

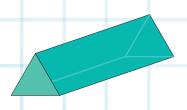
This is a cube. This is a cylinder.



This is a sphere.

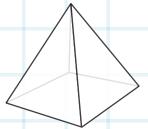
This 3D shape has 6 flat faces; 2 are squares and 4 are rectangles. It has 12 straight edges and 8 corners.

This is a cuboid.



This 3D shape has 5 flat faces; 2 are triangles and faces; 4 are triangles 3 are rectangles. It has 9 straight edges and 6 corners.

This is a triangular prism.



This 3D shape has 5 flat and I is a square. It has 8 straight edges and 5 corners.

This is a square based pyramid.



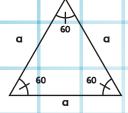
This 3D shape has 4 flat triangular faces. It has 6 straight edges and 4 corners.

This is a triangular based pyramid.

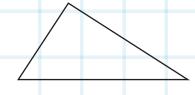


Triangles

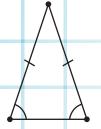
Triangles have three sides. There are many different types of triangles:



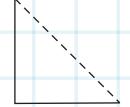
- · 3 equal sides
- 3 equal angles of 60o



- 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

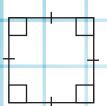
Quadrilaterals

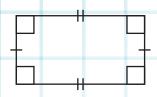
Quadrilaterals have four sides. Here are some special quadrilaterals:

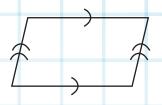
Square

Rectangle

Parrellelogram (squashed rectangle)







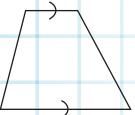
- 4 equal sides
- 4 right angles

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

Trapezium



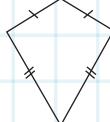
Rhombus (squashed square)



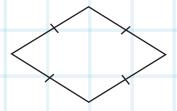
of different lengths



One pair of parallel sides



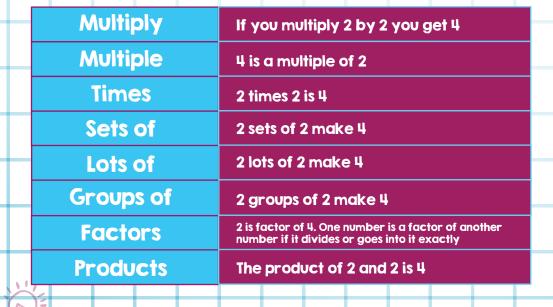
- 2 pairs of equal sides next to each other
- No parallel sides



- 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 a look below to see how they can be used in the simple sum 2x2=4.



Measures

Remember:

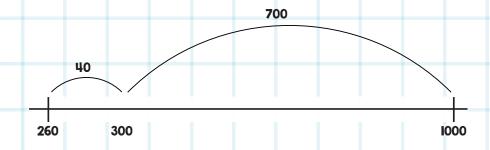
I0mm =	Icm	500	g - I/2Kg
I00cm	- Im	250	g - I/4Kg
1000m -	lkm	100	0ml - IL
500m -	/2km	500)ml - I/2L
250m - I	/4km	250)ml - I/4L
1000g -	lKg		

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

Example I:

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

Tip: Use the Empty Number Line

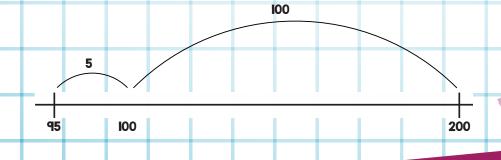


- a) Mark 260m and 1000m
- b) Mark in next hundred to 260 i.e.300 and show 'hop' forward (40m)
- c) Show the hop from 300-1000 i.e. 700.

Example 2:

Answer = 740m

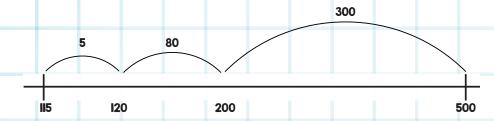
My water bottle holds 200ml and I have drunk 95ml. How much have I left?



Measures

Example 3:

A bag of sugar holds 500g. I use II5g for baking a cake. How much have I got left?



Answer = 385g

Tip:

- a) Mark in II5g and 500g
- b) Count on 5 from II5 to next IO (I20)
- **c)** Count on 80 to next 100 (200)
- d) Count on 300 to make 500.
- ① 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. I.** 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?

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:

8 cm

7 cm

The perimeter of this shape is:

4 cm

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:

5 cm

8 cm

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

Method I

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



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

The volume of the second is found using the rule:

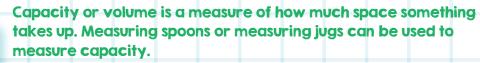
Volume of a cube or cuboid = length x breadth x height



This cube has sides of length 3cm

Its volume is 3 x 3 x 3 = 27cm3

Measuring Capacity



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).

- · II I000ml · 3/4I - 750 ml
- · I/2I 500 ml
- · I/41 250 ml

Use these tips to estimate capacity:

- 5 ml is about the capacity of a teaspoon.
 - Il is about the capacity of a large carton of fruit vice

Units of measurement:

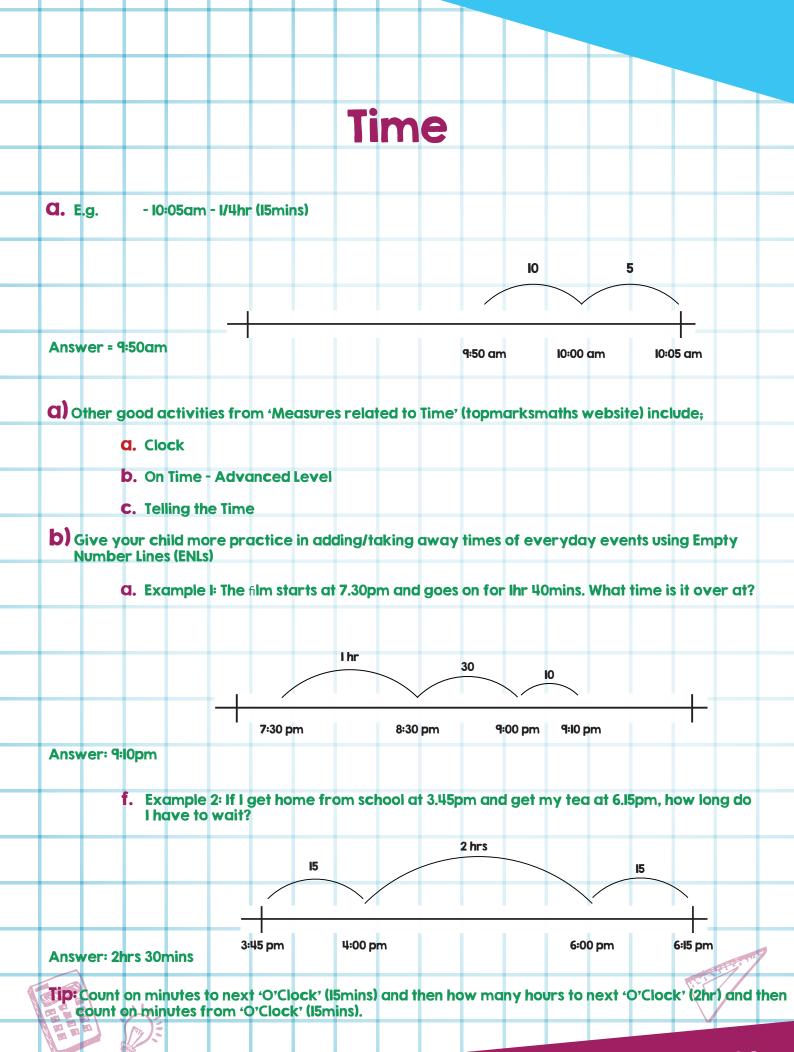
cm3

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



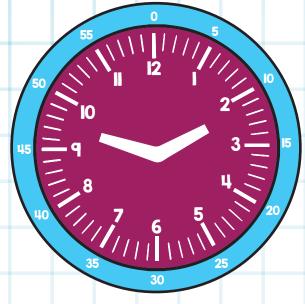
Time Things I Need for Time **Materials:** Clock (at home) **Useful Websites:** www.topmarksmaths.co.uk **Whiteboard Resources** Measures www.topmarksmaths.co.uk - Whiteboard Resources KS2 - Measures a) Class Clock or clock Give your child plenty of practice setting the 'Class Clock' to different times and get them to do the same with another. 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. Ihr, I/2hr (30 mins), I/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 + Ihr l hr Answer = 10.45am 9:45 am 10:45 am b.E.g. - 5.45pm + 1/2 hour (30 mins) 15 15 Answer = 6.15pm 5:45 pm 6:00 pm 6:15 pm



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
I2 pm	1200	I2 am	0000
I pm	1300	l am	0100
2 pm	1400	2 am	0200
3 pm	I500	3 am	0300
4 pm	1600	4 am	0400
5 pm	1700	5 am	0500
6 pm	1800	6 am	0600
7 pm	1900	7 am	0700
8 pm	2000	8 am	0800
9 pm	2100	9 am	0000
I0 pm	2200	IO am	1000
II pm	2300	ll am	1100

Units of Time

I minute 60 seconds

I hour 60 minutes

I day 24 hours

I week 7 days

I fortnight 14 days

I year 12 months / 52 weeks / 365 days

I 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.

Useful Websites/Links

Website Address	Details
http://nlvm.usu.edu/en/nav/vlibrary.html	Go to PreK2 Base Blocks Base Blocks Addition Base Blocks Subtraction
www.topmarks.co.uk	Go to Whiteboard Resources Go to Maths KSI - loads of activities in all areas of maths OR Go to Parents Resources
www.clounagh.org	
www.ictgames.com	
www.mathsisfun.co.uk	
www.counton.org	
www.mad4maths.com	
www.thesingaporemathsteacher.com	
Google Woodlands Junior Maths	
Google Enrich Maths Problem Solving	Trial and improvement Make a picture

Games

- Jigsaws (number)
- Interactive jigsaws in Top marks
- · Go to Parents
- · Go to Maths Games
- Playing Cards
- Money Games
- · Ludo
- · Snakes/Ladders
- · Connect 4
- Dominoes
- Draughts
- · Simple Sudoku

Helping out at Home

Out and About

- Plan your trip around the shops
- Recognising new coins 20p, 50p, £I, £2
- Change from IOp, 20p, 50p, £I adding/ subtracting
- Exchanging coins for least amount
- Sequence shopping from lightest to heaviest

In the Kitchen

- Read analogue/digital clock
- · Sharing out dinner (e.g. pizzas etc)/fractions
- Reading scales on kettle, weighing scales
 -working out how much to fill, get to lkg etc
- Non uniform measuring Baking: how many spoonfuls of flour weigh 100g etc.

Around the House

- Talk about different shapes, squares, rectangles, triangles, circles etc.
- Estimate lengths, widths, heights etc.
- Fractions half an apple, kit kat, sandwich etc.









