St. Helen's College

Useful Tips for Helping Young Children with Maths

(Lower School)

Information for Parents

Teaching Maths to Younger Children

Helpful Tips for Foundation (Nursery & Reception)

and Year 1 Parents

Contents

Using aspects of everyday life is a useful way to build up your child's knowledge of numbers. It does not have to be complicated!

Pattern, sequencing and counting

Sorting objects by colour, shape, size or classification by type (e.g. cats, dogs etc.) Encourage children to discuss their reasoning behind their choice for sorting.

Recognising, continuing and creating simple repeating patterns:
red/yellow/red/yellow
1, 2, 1, 2, 1, 2

Looking at patterns with shapes in the environment e.g. pavement slabs, buildings, clothing patterns, stripes, checks, etc.

Patterns with numbers:
Counting in 2s, 3s, 5s and 10s.

Recognising numbers to 10 and beyond

At <u>Foundation stage</u>, look at door numbers, the number of a bus, or car registration numbers to build up recognition of numbers to 10 and beyond.

We use a number line and a hundred square to build up recognition. For example:
- Find 25
- Find 60
- Find 81
- Find a number before 37
- Find the number after 29
- Find the number between 19 and 21
- Find the number 2 more than 20
- Find the number 2 less than 20

When using a 100 square, point out that all twenty something numbers begin with 2 and are located towards the top of the square, where as all the seventy something numbers begin with 7 and are towards the bottom of the square.

Counting to 10 and beyond

At <u>Foundation stage</u>, encourage your child to count by using aspects of everyday life, for example: count the steps of the stairs, the peas on his/her plate, cars in the toy box etc.

We use number lines and hundred squares to count on in twos, threes, fives, tens.

- To find 2 more than 11, cover 11 on the number line and count on 2 more
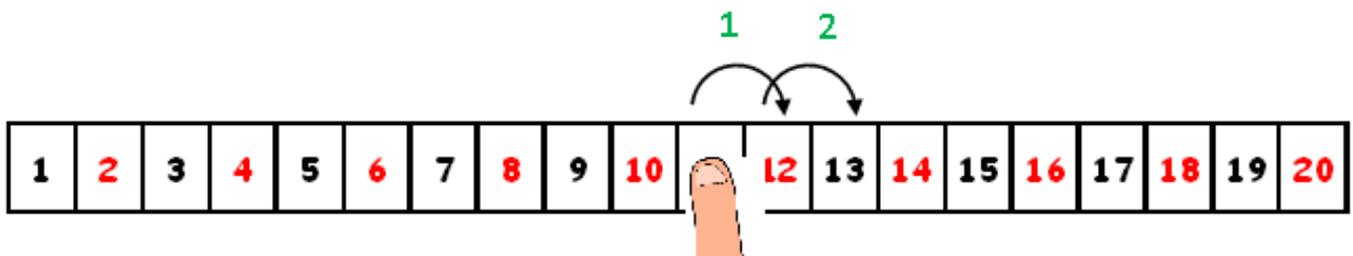
- To find 5 greater than 10, cover 10 on the number line and count on 5
- With bigger numbers, use the 100 square asking the same kind of questions, for example, 6 more than 72 – cover 72 on the square and count on six

Place value

When we write numbers, the position (or "place") of each digit is important.

In the number 327:

- the "7" is in the Units position, meaning just 7 (or 7 "1"s),
- the "2" is in the Tens position meaning 2 tens (or twenty),
- and the "3" is in the Hundreds position, meaning 3 hundreds.

Hundreds	Tens	Units
3	2	7

Addition and Subtraction

Addition

2 or more numbers are joined together to produce a <u>bigger</u> number, therefore it is important that your child understands that when we add numbers together we have to <u>count on</u> using a number line, a 100 square, fingers or even tangible items such as cubes, buttons etc.

We encourage children to put the bigger number in their head when adding a single digit to a one or two digit number. For example:
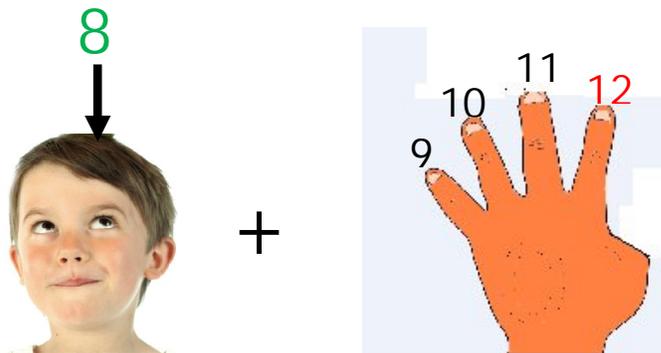
8 + 4 = 12

8 + 4	Put 8 in your head
	Hold up 4 fingers
	Count off the 4 fingers – 9, 10, 11, 12

| 12 add 5 | Put 12 in your head |
| | Hold up 5 fingers |
| | Count off the 5 fingers – 13, 14, 15, 16, 17 |

3 more than 18	Put 18 in your head
	Hold up 3 fingers
	Count on using your fingers – 19, 20, 21

Remember when you are adding, always put the <u>bigger number</u> in your head and count on.

It is also useful to familiarise children with the vocabulary associated with addition by using this vocabulary when questioning.

+

add
and
plus
more
sum
count on
total
altogether

Sample Questions
What is 5 <u>add</u> 6?
What is the <u>total</u> of 4 and 7?
What is 8 <u>count on</u> 5?
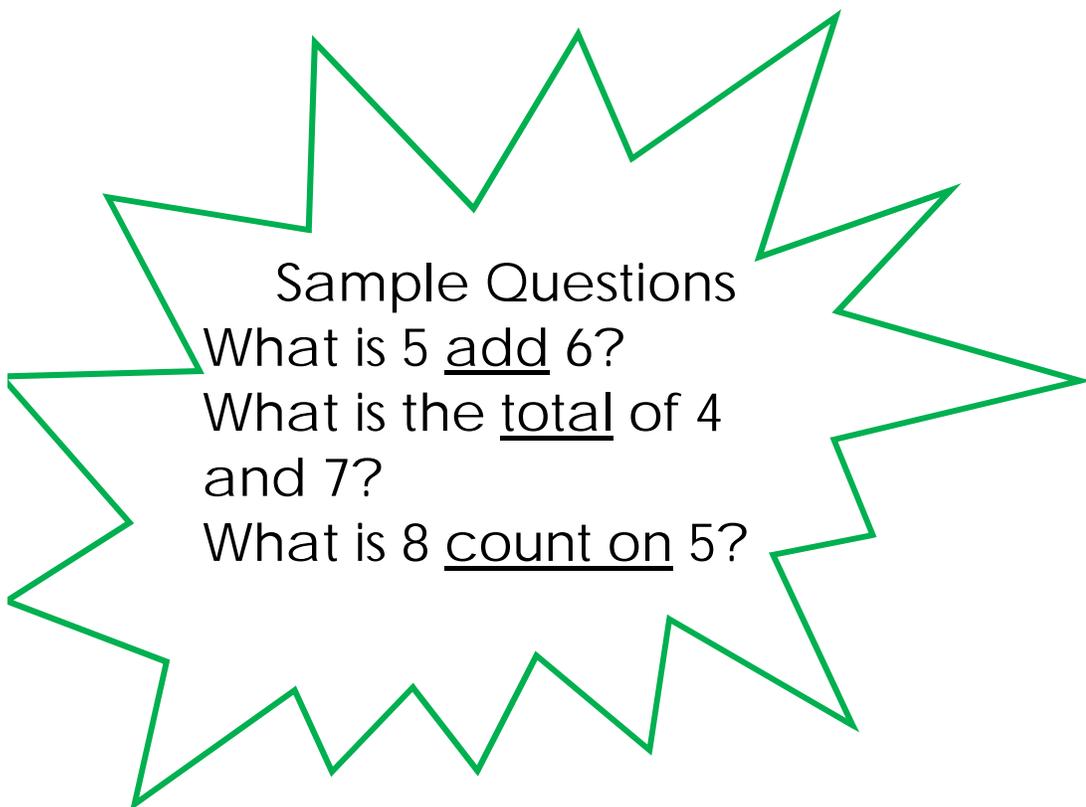
Subtraction

When we subtract the children must become aware that something is being taken away and that we end up with a smaller number. Subtraction is the opposite of addition so we count back using a number line, a 100 square, fingers or other visual aids such as cube, smarties, buttons. The same techniques that applied for addition.

Remember when you are subtracting you are <u>counting back</u> and always remember to take away from the <u>bigger number</u>!

Children always find counting back more difficult than counting on.

Vocabulary associated with subtraction:

less
minus
subtract
take away
count back
difference

Sample Questions
What is 10 <u>minus</u> 6?
What is 14 <u>subtract</u> 7?
What is 8 <u>take away</u> 3?

Number Bonds

It is very beneficial to work on the rapid recall of number bonds to 10 and beyond. Knowledge of all addition and subtractions pairs to 10 and beyond helps children to complete their work accurately and with speed.

A sheet of number bonds for 10 is attached as an example. The same can be done for all numbers that add up to 9, 8 etc. Make learning number bonds fun by asking quick fire questions and doing some timed tests at home (5 minute tests). Children should be able to respond without hesitation.
For example: 5 + ? = 8   6 + ? = 10   ? + 7 = 9
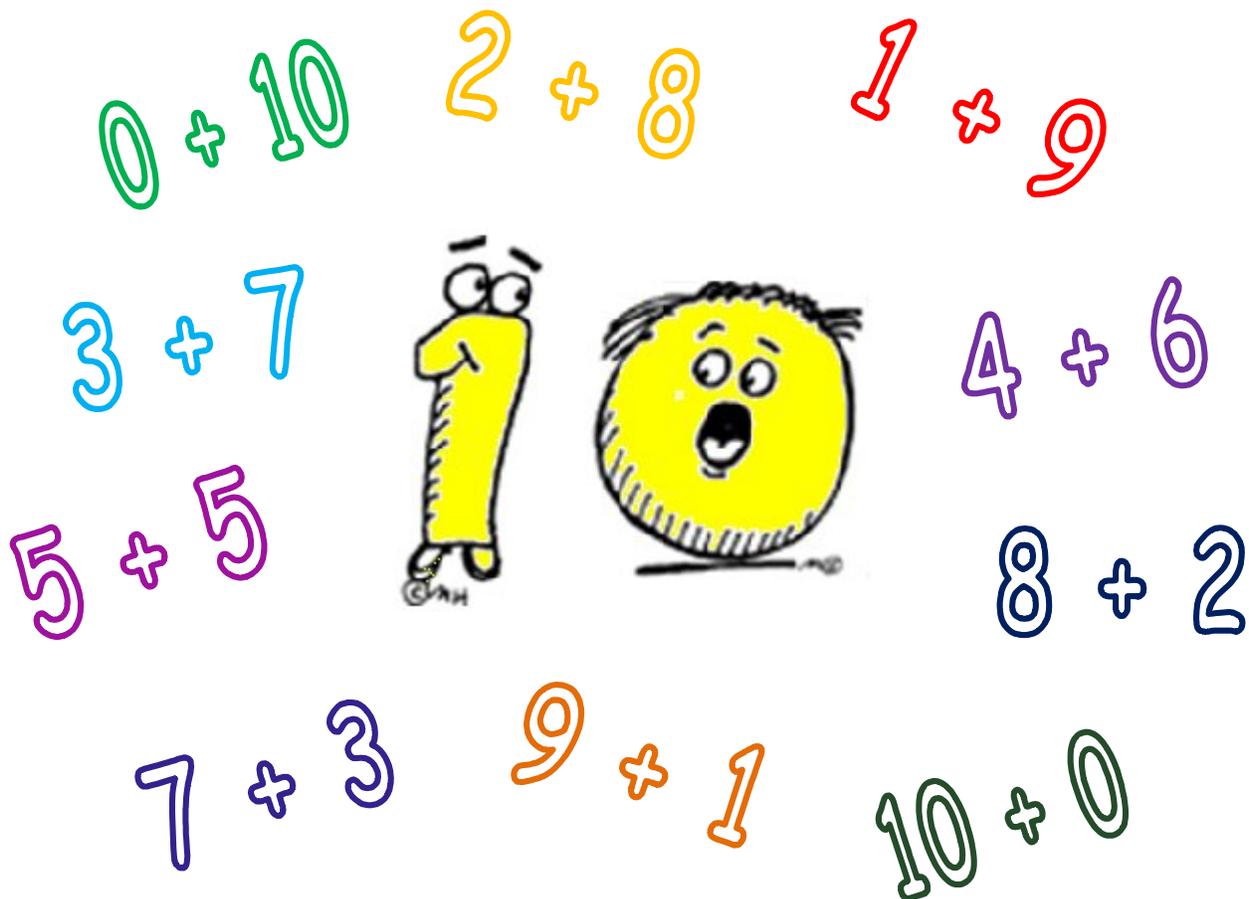
Shape

Look for shapes in the world around you. Are they flat (2D) or are they solid (3D)?

At Foundation stage the children are introduced to 2D and 3D shapes and this knowledge is built upon in year 1. Encourage your child to develop a solid recognition of a circle, square, rectangle and triangle by looking out for these shapes in the world around them, for example in the park, the supermarket etc.

- Examples of 3D shapes - cube, cuboid, sphere, cylinder and cone can easily be found in your food cupboard at home.

When we look at 3D shapes we examine their properties (what we can say about them), for example:
- How many sides does it have?
- How many faces (surfaces)?
- How many vertices (corners)?

Remember that a cube and a cuboid are from the same family but whilst a cube has only square faces, a cuboid can either have all rectangle faces or a mix of square and rectangle faces.

On the next two pages you will find lists of the 2D and 3D shapes – what they look like, their names and their properties.
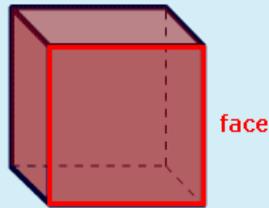
2D Shapes (flat shapes)

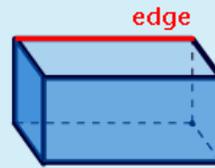| Shape	Name	Properties
	square	4 equal sides
	rectangle	2 pairs of equal sides
	triangle	3 sides
	circle	1 side
	pentagon	5 side
	hexagon	6 sides
	octagon	8 sides

These shapes are flat and can only be drawn on paper.
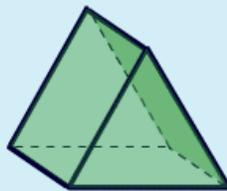
3D Shapes (solid shapes)

3D shapes have faces (surfaces), edges and vertices.
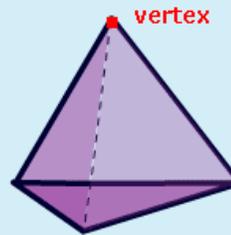The exception is the sphere which has no edges or vertices.
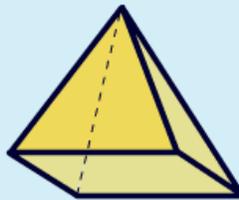
Cube

Cuboid

face

edge
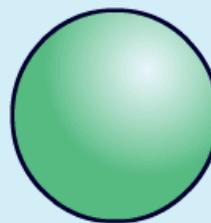
Triangular prism

Triangular based pyramid

vertex

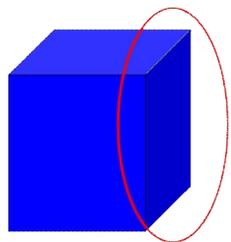Square based pyramid

Cone

Cylinder

Sphere

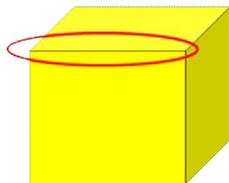3D shapes are normally described using the following properties:

Faces - part of a shape that is flat or curved.
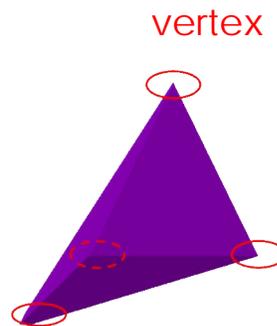Edges - the line where two faces meet.
Vertices – the place where three or more edges meet.

face

edge

vertex

Shape	Properties
Cube	6 flat faces, 12 edges, 8 corners
Cuboid	6 flat faces, 12 edges, 8 corners
Cone	1 flat face, 1 curved face, 1 edge
Cylinder	1 curved face, 2 flat faces, 2 edges
Sphere	1 curved face
Triangular Prism	5 flat faces, 9 edges, 6 corners
Triangular Based Pyramid (tetrahedron)	4 flat faces, 6 edges, 4 corners
Square Based Pyramid	5 flat faces, 8 edges, 5 corners

Money

In Foundation and KS1 children are introduced to coins. Use your purse and let your child find and name as many coins as he/she can. Examine the colour and the shape.

Children are also taught the value of the coins and are alerted to the fact that these are the only coins we have to use. (Do we have a 3p coin?)

Once familiar with the value of the coins, you could ask your child to make different amounts of money. Create some price tags using numbers up to 20 and beyond if your child is confident and ask your child to use coins to make the amount shown on the tag.

Encourage your child to make the amount in as many ways as possible and as he/she progresses through KS1 encourage your child to use as few coins as possible to make the amount shown. Always start with the biggest value coin that is possible to use and then work out how much more must be added. For example: Use 2 coins to make 15p (10, 5p)
            Use 4 coins to make 15p (10, 2p, 2p, 1p)

Time

Practice sequencing – daily routines, days of the week and months of the year.

Get your child familiar with telling the time on the analogue clock.
- Look at the size of the clock hands
- Point out that there are sixty minutes in one hour
- Point out that there are 5 minutes between each of the numbers.

Ask them what hour it is or what hour has gone past (e.g. is it 2 o'clock or is it past two o'clock). If the long hand has gone more than half way round, ask them what hour is next (e.g. it is nearly three o'clock).

The long hand shows the minutes.

When it is pointing to the 12 it means that it is the start of the hour.
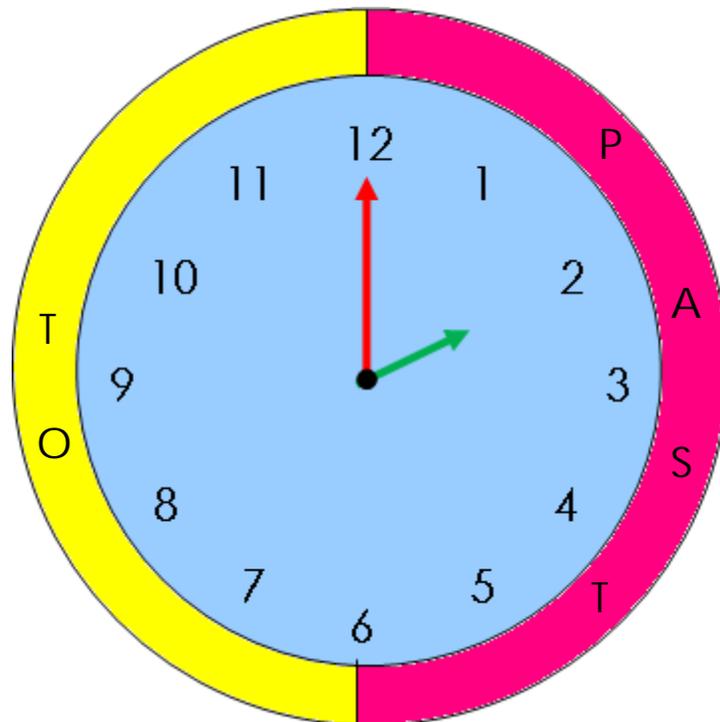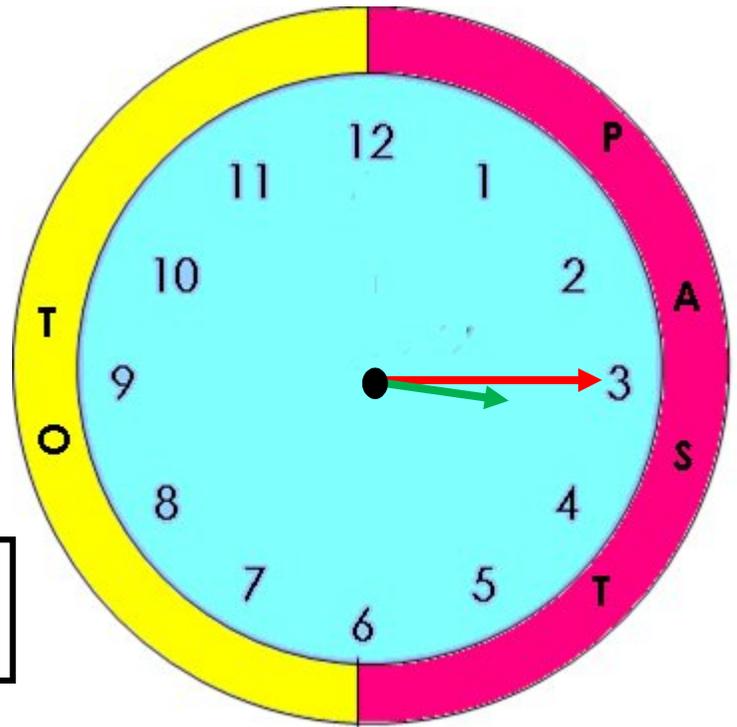
The short hand shows the hours.

The time on this clock is 2 o'clock.
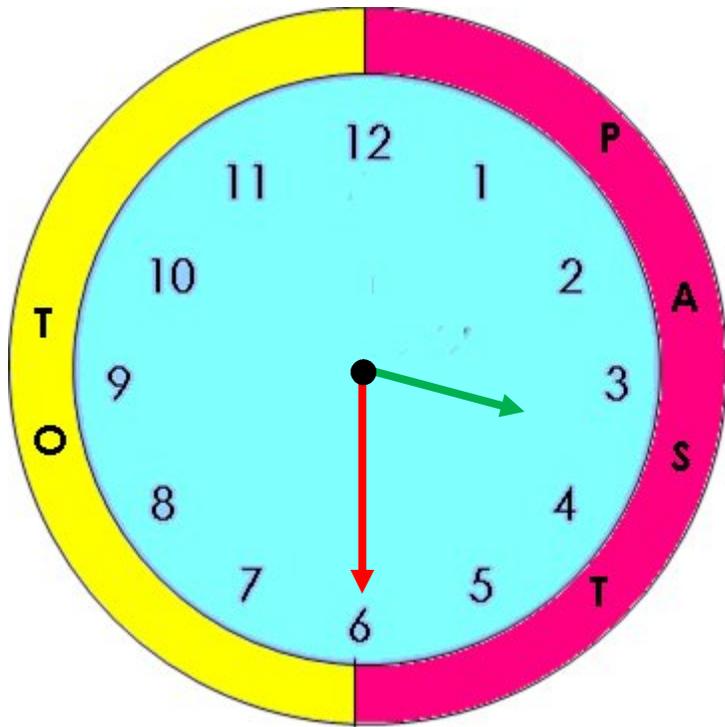
In digital we write this as 2:00

Point out that in digital time we write the hour first and then the minutes.

Once they can confidently do o'clock, look at quarter past and half past.

Explain that we call this a quarter past because the long hand has gone a quarter of the way around the clock.

The time on this clock is a quarter past 3.
In digital we write this as 3:15

Explain that we call this half past because the long hand has gone half way around the clock.
Look at the position of the short hand it is between 3 and 4.

The time on this clock is half past 3.

In digital we write this as 3:30

Measuring

We look at a variety of measures including: length, height, depth and width. We start by using non-standard units: hand spans, foot spans, cubes etc and then progress to using mm, cm and m. The children will use rulers, metre sticks and trundle wheels when measuring.

You can measure how long things are, or how tall, or how far apart they are. Those are all examples of length measurements.

Example: This fork is 20 centimetres long

Capacity/Volume

Language used: full, empty, half-full, half-empty, nearly full, nearly empty, litres, millilitres.

Capacity is the amount that something can hold.
Usually it means volume, such as milliliters (ml) or litres (l)

Weight

Language used: heavy, light, heavier, lighter, heaviest, lightest, balanced, equal, grams, kilograms.

Problem Solving

Encourage your child to use his/her knowledge of numbers by posing "word problems" for him/her to solve. For example:

1. Sam had 10 dogs but 3 ran away, how many are left? (10-3)

2. One cat has 4 legs, how many legs do 3 cats have? (4+4+4)

3. If I had 13p and I got 4p from the tooth fairy, how much do I have now? (13p + 4p)

4. 9 people were on the bus, 5 more got on. How many people were on the bus? (9 + 5)

5. Priya baked 7 cakes but she needs 12 for her party. How many more cakes does Priya have to bake? (12-7)

6. Jess has 20p pocket money; she spends 8p on a lollipop. How much change will she get? (20p – 8p)

Appendix 1 - 100 Square

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

Appendix 2 - Times Tables

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

Numbers in red are square numbers.

Appendix 3 - Money

1p   2p   5p   10p

20p   50p   £1   £2

Appendix 4 – Number Bond Triangles

```
        /\                          /\
       /10\                        /10\
      /    \                      /    \
     /      \                    /      \
    / 0    10\                  / 6     4\
   /_____\                /_____\

        /\                          /\
       /10\                        /10\
      /    \                      /    \
     /      \                    /      \
    / 1     9\                  / 7     3\
   /_____\                /_____\

        /\                          /\
       /10\                        /10\
      /    \                      /    \
     /      \                    /      \
    / 2     8\                  / 8     2\
   /_____\                /_____\

        /\                          /\
       /10\                        /10\
      /    \                      /    \
     /      \                    /      \
    / 3     7\                  / 9     1\
   /_____\                /_____\

        /\                          /\
       /10\                        /10\
      /    \                      /    \
     /      \                    /      \
    / 4     6\                  /10     0\
   /_____\                /_____\

              /\
             /10\
            /    \
           /      \
          / 5     5\
         /_____\
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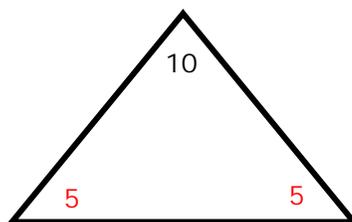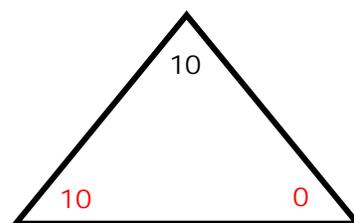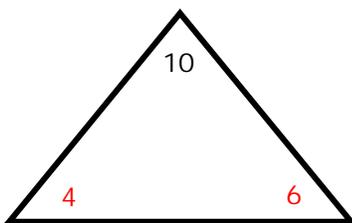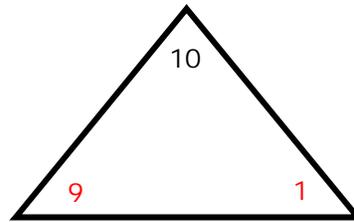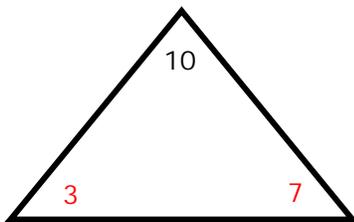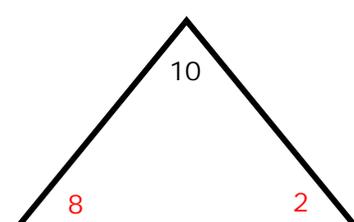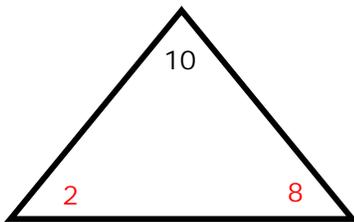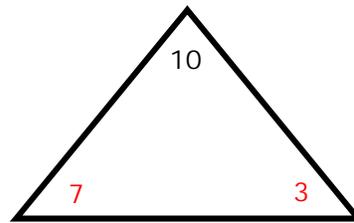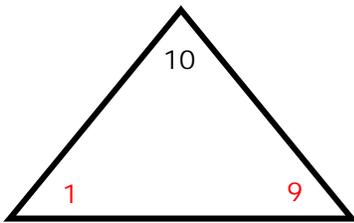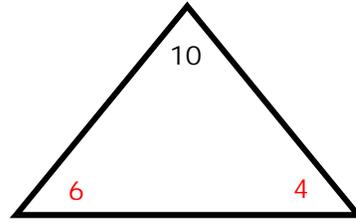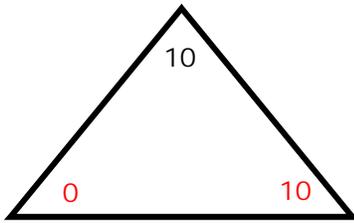
Appendix 5 – Number Bonds to 10

Colour the squares to show all the number bonds to ten.
Write the calculation under each strip.

1 + 9 = 10