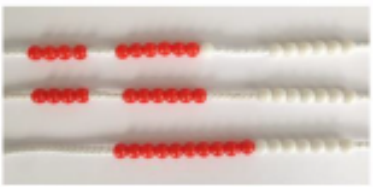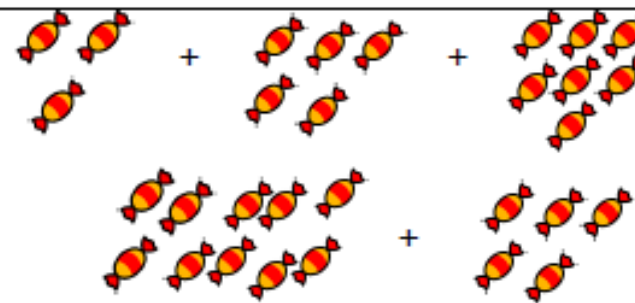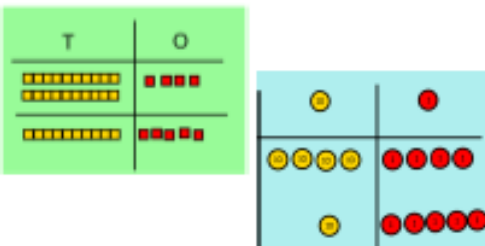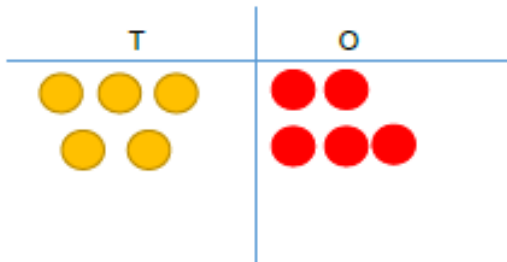# Parents' Guide to Mathematics at

The Bythams Primary School

Year 2
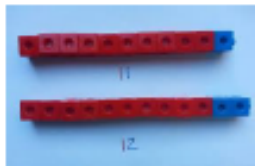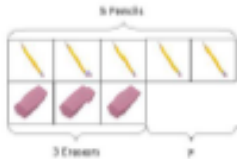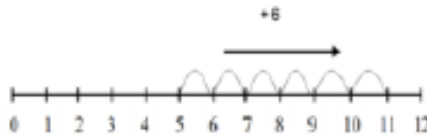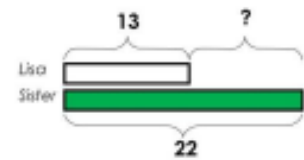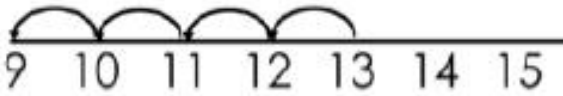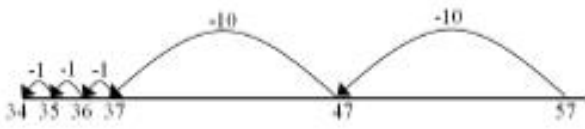
Dear Parents,
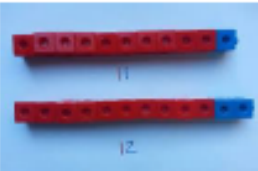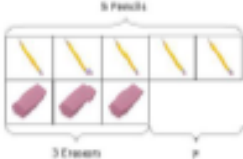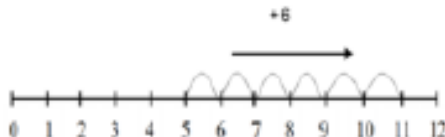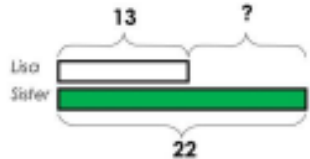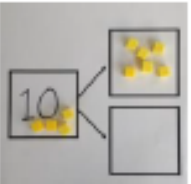
This booklet is to help you understand how the main four operations in Maths are taught at Bythams School. Each guide has the main objectives for the year group and how it is taught in the concrete, pictorial and the abstract. The concrete is all about physical things, such as cubes, bead strings and counters which the children manipulate to understand the objectives. The pictorial is when concepts are shown in a pictorial form such as photos, diagrams and number lines. The abstract moves to formal methods and word problems to understand the objectives. All three methods are used in conjunction with one another, not as a progression.

Addition

Adding three single digits	4 + 7 + 6= 17 Put 4 and 6 together to make 10. Add on 7. Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit.	 Add together three groups of objects. Draw a picture to recombine the groups to make 10.	$(4)+ 7 +(6) = \boxed{10} + \boxed{7}$ 10 $= \boxed{17}$ Combine the two numbers that make 10 and then add on the remainder.
Column method- no regrouping	24 + 15= Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters. 	After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions. T | O 	Calculations 21 + 42 = 21 + 42

Subtraction

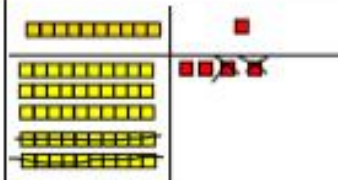| Find the difference	Compare amounts and objects to find the difference. Use cubes to build towers or make bars to find the difference Use basic bar models with items to find the difference	+6 0 1 2 3 4 5 6 7 8 9 10 11 12 Draw bars to find the difference between 2 numbers.	Count on to find the difference. **Comparison Bar Models** Lisa is 13 years old. Her sister is 22 years old. Find the difference in age between them. 13 ? Lisa Sister 22	Hannah has 23 sandwiches, Helen has 15 sandwiches. Find the difference between the number of sandwiches.
Counting back	Make the larger number in your subtraction. Move the beads along your bead string as you count backwards in ones. 13 – 4 Use counters and move them away from the group as you take them away counting backwards as you go.	Count back on a number line or number track 9 10 11 12 13 14 15 Start at the bigger number and count back the smaller number showing the jumps on the number line. -10 -10 -1 -1 -1 34 35 36 37 47 57 This can progress all the way to counting back using two 2 digit numbers.	Put 13 in your head, count back 4. What number are you at? Use your fingers to help.	

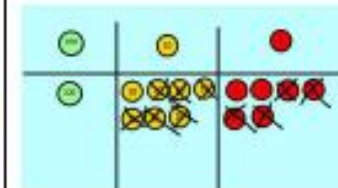|			
Find the difference	Compare amounts and objects to find the difference. Use cubes to build towers or make bars to find the difference Use basic bar models with items to find the difference	 +6 0 1 2 3 4 5 6 7 8 9 10 11 12 Count on to find the difference. Draw bars to find the difference between 2 numbers. **Comparison Bar Models** Lisa is 13 years old. Her sister is 22 years old. Find the difference in age between them. 13 ? Lisa [ ] Sister [green bar] 22	Hannah has 23 sandwiches, Helen has 15 sandwiches. Find the difference between the number of sandwiches.
Part Part Whole Model	 Link to addition- use the part whole model to help explain the inverse between addition and subtraction. If 10 is the whole and 6 is one of the parts. What is the other part? 10 - 6 =	Use a pictorial representation of objects to show the part part whole model. 	5 10 Move to using numbers within the part whole model.
Make 10	14 – 9 = Make 14 on the ten frame. Take away the four first to make 10 and then takeaway one more so you have taken away 5. You are left with the answer of 9.	$13 - 7 = \boxed{6}$ $\boxed{3}$ $\boxed{4}$ –4 –3 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Start at 13. Take away 3 to reach 10. Then take away the remaining 4 so you have taken away 7 altogether. You have reached your answer.	16 – 8= How many do we take off to reach the next 10? How many do we have left to take off?

| Column method without regrouping | | Use Base 10 to make the bigger number then take the smaller number away. | | Draw the Base 10 or place value counters alongside the written calculation to help to show working. | $47 - 24 = 23$ $$\begin{array}{r} 40 + 7 \\ - 20 + 4 \\ \hline 20 + 3 \end{array}$$ |
| | Show how you partition numbers to subtract. Again make the larger number first. | | | | This will lead to a clear written column subtraction. |
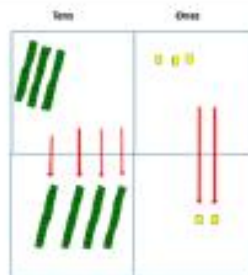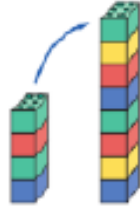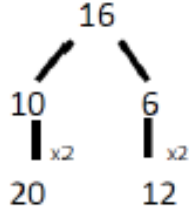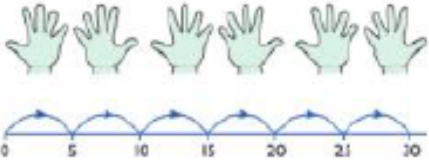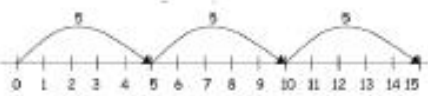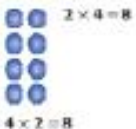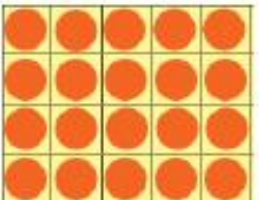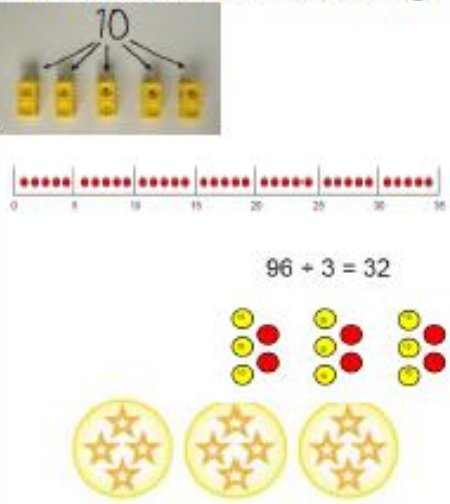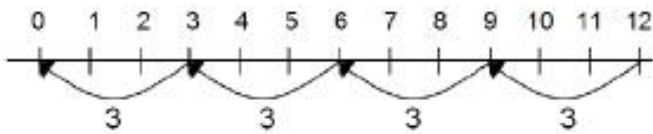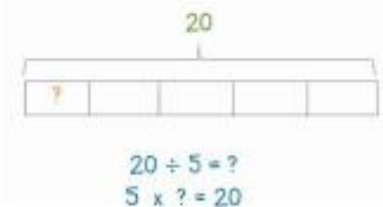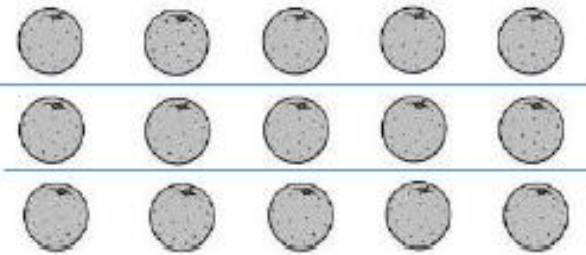
Multiplication

Objective and Strategies	Concrete	Pictorial	Abstract
Doubling	Use practical activities to show how to double a number. double 4 is 8 4 × 2 = 8	Draw pictures to show how to double a number. Double 4 is 8	16 10 6 x2 x2 20 12 Partition a number and then double each part before recombining it back together.
Counting in multiples	Count in multiples supported by concrete objects in equal groups.	Use a number line or pictures to continue support in counting in multiples.	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30
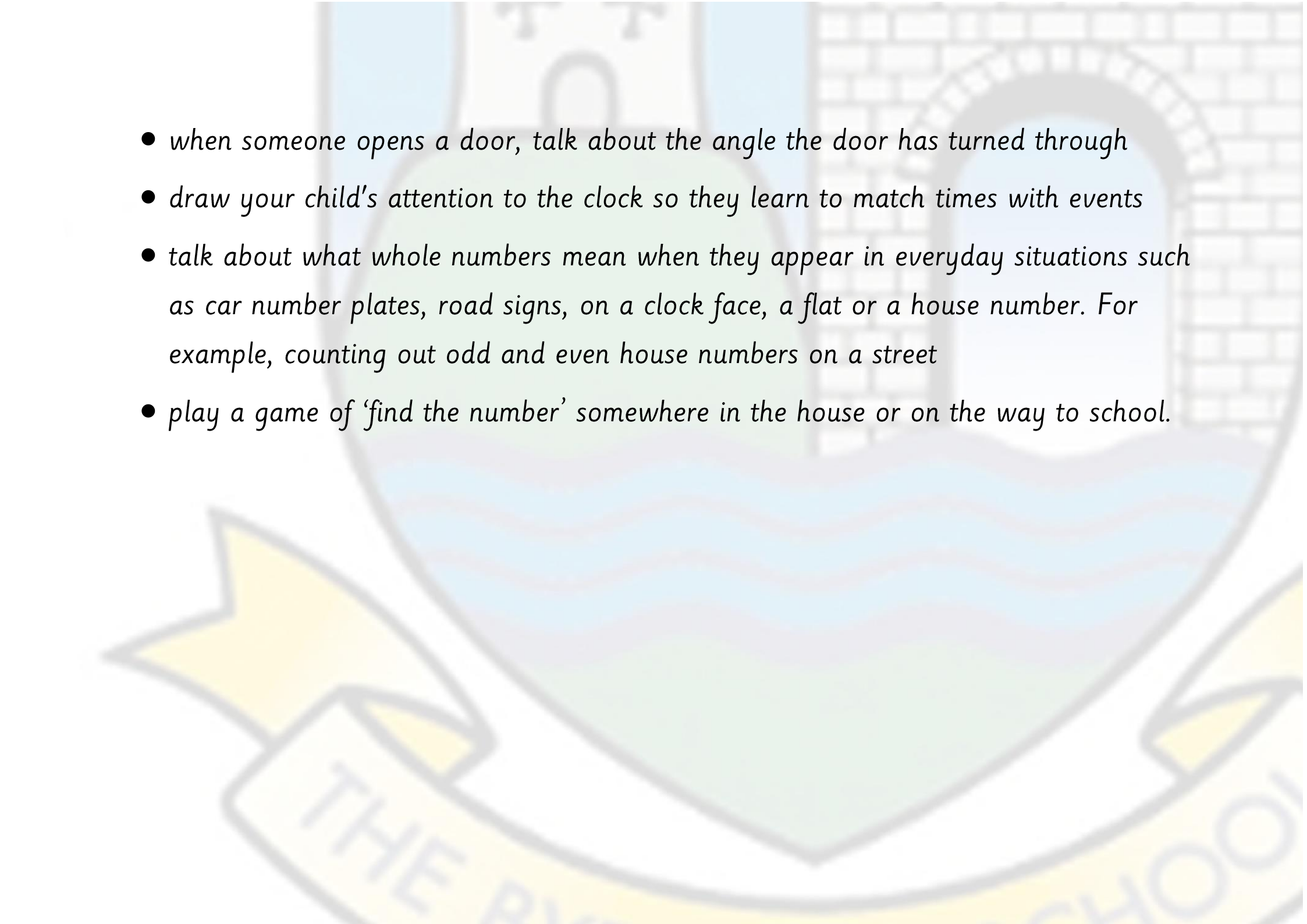
Repeated addition	3 + 3 + 3 Use different objects to add equal groups.	There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there? 2 add 2 add 2 equals 6 5 + 5 + 5 = 15	Write addition sentences to describe objects and pictures. 2 + 2 + 2 + 2 + 2 = 10
Arrays- showing commutative multiplication	Create arrays using counters/ cubes to show multiplication sentences.	Draw arrays in different rotations to find commutative multiplication sentences. $4 \times 2 = 8$ $2 \times 4 = 8$ $2 \times 4 = 8$ $4 \times 2 = 8$ Link arrays to area of rectangles.	Use an array to write multiplication sentences and reinforce repeated addition. 5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15

Division

Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding. 96 ÷ 3 = 32	Use a number line to show jumps in groups. The number of jumps equals the number of groups. Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group. 20 ÷ 5 = ? 5 x ? = 20	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?
Division within arrays	Link division to multiplication by creating an array and thinking about the number sentences that can be created. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15	Draw an array and use lines to split the array into groups to make multiplication and division sentences.	Find the inverse of multiplication and division sentences by creating four linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7

What you can do at home to help your child make progress

- play with wooden blocks building towers and other structures. Is it possible to build two towers of the same height, whatever number of blocks you start with?

- from a pack of cards (without the tens, the Jacks, the Queens and the Kings) play a game of pairs where you try to turn over two cards that add up to 10

- with a pack of dominoes play the game of 'pairs' where you turn over two dominoes so the total number of spots is 12

- talk about shapes that can be found in the house

- play a game of estimating then measuring the lengths of objects in the house

- play a game of ordering everyday objects according to their weight, and then weigh them

- when someone opens a door, talk about the angle the door has turned through

- draw your child's attention to the clock so they learn to match times with events

- talk about what whole numbers mean when they appear in everyday situations such as car number plates, road signs, on a clock face, a flat or a house number. For example, counting out odd and even house numbers on a street

- play a game of 'find the number' somewhere in the house or on the way to school.