

# Shoreham Beach Primary School



## Calculations Policy

Revised: October 2018  
Next revision: October 2020

## **Contents:**

- Introduction
- Progression in the teaching of the 4 operations from YR to Y6
- Questioning

## **Introduction**

Children are introduced to the processes of calculation through practical apparatus, oral and mental activities. As children begin to understand the underlying ideas, they develop ways of recording to support their thinking and calculation methods, use particular methods that apply to special cases, and learn to interpret and use the signs and symbols involved. From the early stages, children learn how to use models and images, such as empty number lines, to support their mental and informal written methods of calculation.

There is a considerable emphasis on teaching mental calculation strategies. Informal written recording takes place regularly and is an important part of learning and understanding. More formal written methods follow only when the child is able to use a wide range of mental calculation strategies. As children's mental methods are strengthened and refined, so too are their informal written methods. These methods include bar models, part-part-whole diagrams and pictures. Some recording takes the form of jottings, which are used to support children's thinking. This may be done on scrap paper, jotter books and whiteboards and is not always retained as it is for the children's own personal use.

This policy contains the key pencil and paper procedures that will be taught within our school. It has been written to ensure consistency and progression throughout the school and reflects a whole school agreement.

This policy concentrates on the introduction of standard symbols, the use of the empty numberline as a jotting to aid mental calculation and the introduction of pencil and paper procedures. It is important that children do not abandon jottings and mental methods once pencil and paper procedures are introduced. Therefore children will always be encouraged to look at a calculation/problem and then decide which is the best method to choose – apparatus, pictures, mental calculation with or without jottings, structured recording or a calculator. Our long-term aim is for children to be able to select an efficient method of their choice (whether this be mental, written or in upper Key Stage 2 using a calculator) that is appropriate for a given task. They will do this by always asking themselves:

- 'Can I do this in my head?'
- 'Do I need some apparatus?'
- 'Can I do this in my head using drawings or jottings?'
- 'Do I need to use a pencil and paper procedure?'
- 'Do I need a calculator?'

Although the focus of the policy is on pencil and paper procedures it is important to recognise that the ability to calculate mentally lies at the heart of Primary mathematics. Mental methods will be taught systematically from Reception onwards and pupils will be given regular opportunities to develop the necessary skills. However mental calculation is not to the exclusion of written recording and should be seen as complementary to and not as separate from it. In every written method there is an element of mental processing. Sharing written methods with the teacher encourages children to think about the mental strategies that underpin them and to develop new ideas. Therefore written recording both helps children to clarify their thinking and supports and extends the development of more fluent and sophisticated mental strategies.

The overall aim is that when children leave primary school they:

- have a secure knowledge of number facts and a good understanding of the four operations;
- they are able to reason with numbers and problem solve, explaining their understanding and methods
- are able to use this knowledge and understanding to carry out calculations mentally and to apply general strategies when using one-digit and two-digit numbers and particular strategies to special cases involving bigger numbers;
- make use of diagrams and informal notes to help record steps and part answers when using mental methods that generate more information than can be kept in their heads;
- have an efficient, reliable, compact written method of calculation for each operation that they can apply with confidence when undertaking calculations that they cannot carry out mentally;
- use a calculator effectively, using their mental skills to monitor the process, check the steps involved and decide if the numbers displayed make sense.

Although not mentioned in the following grids, opportunities will be given for the children to use and apply new methods of calculating they have learnt. Reasoning and problem solving will be used from Y1 onwards, up to Y6 where the problems will be multi-step.

# Addition (+)

## Reception

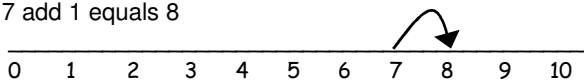
Number rhymes & songs.  
 Conservation of number.  
 Understanding the number and what each digit represents.  
 1 to 1 correspondence.  
 1 more.  
 How many altogether? Physical counting objects  
 Adding 2 small groups (1 digit numbers)  
 Introduce '+' sign.  
 Simple word problems.  
 doubling, halving and sharing

Summer Term – number line 0 to 10 to count on.  
 Chant counting in 10s up to 100, 2s to 10.  
 Awareness of 100 square.

### Year 1

1 more.

7 and 1 **more** is 8  
 7 add 1 equals 8



0 1 2 3 4 5 6 7 8 9 10

Numberlines 0 to 20.  
 Using '+' number sentences and using '='  
 Count in tens, fives, twos.  
 Number bonds up to 20.  
 Add 1 and 2 digit numbers to 20.  
 Work with numbers to 100 and beyond.

### Year 2

Add numbers to at least 100 using materials;  
 combining two groups.  
 Adding 3 single digit numbers  
 Adding, holding 1 number in head. Counting  
 on.  
 Counting in steps of 2,3,5 from zero and in 10s  
 from any number forwards and backwards.

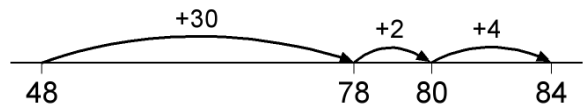
Number bonds up to 20 and derived facts to  
 100

Commutative law  
 Inverses of addition/subtraction

### Year 3

Work with numbers up to 1000  
 Add/subtract using column methods  
 Count in multiples of 4 8 50 and 100

Addition using blank numberlines

$$48 + 36 =$$


48 78 80 84

Partitioning with brackets

$$34 + 25 = 59$$

$$(30+20) (4+6)$$

$$50 + 9 =$$

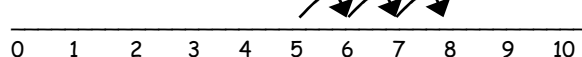
### Number square

8+7=

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

Recording addition calculations using numberline method (with numbers on)

5+3=



### Number square

48+36=

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

Larger numbers +ing 10s and 20s.

### Partitioning

Written calculations, operations. All horizontal recording.

Graphical representation.

Algebra – missing numbers in calculations.

<20 L/A

No carrying A

>100 with carrying M/A

464 + 175 = 639

(400+100)(60+70) (4+6)

500 + 130 + 9 = 639

Independent writing of calculations.

Progressing to:

Vertical expanded method:

43 + 25 =

43

+ 25

8

60

68

Followed by:

Addition vertical compact method. Carrying into the next column must be under the lower line NOT above the top line.

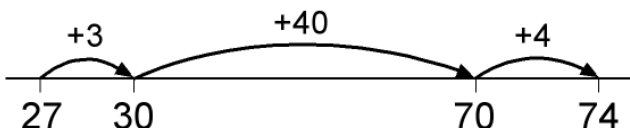
43

+ 25

68

Adding and subtracting fractions with the same denominator.

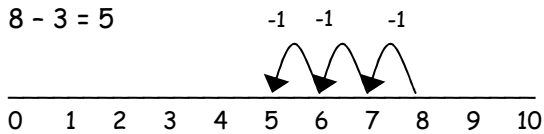
Count up and down in tenths.

<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
Use of 4 digit numbers Continue to gain fluency in vertical compact methods of addition.  Extend to addition of decimals Convert fractions to decimals and back.	Use of numbers up to 1,000,000 including negative numbers Continue to use formal written methods of addition on increasingly large numbers.	Use of numbers up to 10,000,000  Multistep word problems
<b>Subtraction (-)</b>		
<b>Reception</b>		
Number rhymes / songs Looking at 1 less Counting backwards Introduce 'take away' vocabulary. Practice 'take-away' with tangible apparatus.		
<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Physical recapping – taking objects away. Use of – sign for subtraction  <b>Number square</b> $15-7=8$	Using objects physically taking away. Subtraction by jumping up in 10s. Partitioning using objects.  <b>Number square</b> $74-27=47$	Partitioning. Numberline blank (jumps 10 or match digits). Horizontal recording. Counting on or back  $74 - 27 = 47$    $15 - 7 = 8$

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

Count back on a numberline – 2 digit numbers

$$8 - 3 = 5$$



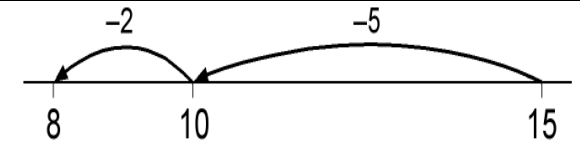
Subtraction number sentences (12-5=)  
Start with bigger number and count back in ones.

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

By end of year children are using numbers >100

Numberline blank (jumps 10 or match digits).

Subtraction as the inverse of addition.



Vertical recording.  
 $46 - 23 =$

$$\begin{array}{r} 40 + 6 \\ - 20 + 3 \\ \hline 20 + 3 = 23 \end{array}$$

Progressing to:

Vertical recording.

$$46 - 23 =$$

$$\begin{array}{r} 40 + 6 \\ \underline{20 + 3} \\ 20 + 3 = 23 \end{array}$$

Vertical recording into 3 digit numbers and 'carrying'

$$784 - 35 =$$

$$\begin{array}{r} 700 \ 80 \ 4 \\ - \quad 30 \ 5 \\ \hline 700 \ 40 \ 9 \end{array}$$

Followed by:

Compact method of subtraction, with 'carrying'

		(only if children are fully conversant with previous methods).  $\begin{array}{r} 6 \ 14 \\ \cancel{7} \ \cancel{4} \\ - 2 \ 7 \\ \hline 4 \ 7 \end{array}$
<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
Continue to gain fluency in vertical compact methods of subtraction.  $\begin{array}{r} 6 \ 13 \ 11 \\ \cancel{7} \ \cancel{4} \ \cancel{1} \\ - 3 \ 6 \ 7 \\ \hline 3 \ 7 \ 4 \end{array}$  Extend to subtracting decimals	Continue to gain fluency in vertical compact methods of subtraction on increasingly large numbers. Ensuring vertical methods have been taught in year 5 if not before.	Multi step word problems
<b>Multiplication (x)</b>		
<b>Reception</b>		
Repeated addition Chanting in 2s, 5s, 10s		
<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>



Look at numbers on a numberline to see the pattern.

Chanting in 2s, 5s and 10s  
Record as repeated addition  
 $2+2+2 = 6$

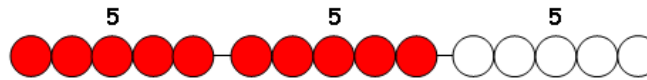
Introduce 'x' sign & 'lots of'.

One step problems using objects and pictorial representations.

Chanting 2s, 3s, 5s, 10s time-tables  
Groups of objects.  
Recording dots on a whiteboard.  
Written use of X sign

Use of a bead bar:

$$5 \times 3 = 5 + 5 + 5$$



Repeated addition - use of pictures.

Finger counting.

Arrays - model a multiplication calculation using an array.

$$\begin{array}{cccc} \circ & \circ & \circ & \circ \\ \circ & \circ & \circ & \circ \\ \circ & \circ & \circ & \circ \end{array} \quad 5 \times 3 = 15$$
$$3 \times 5 = 15$$

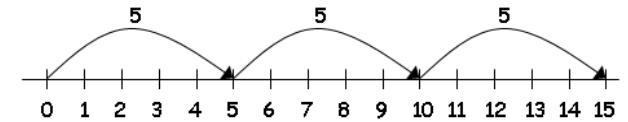
### Commutativity

Children should know that  $3 \times 5$  has the same answer as  $5 \times 3$ . This can also be shown on the number line.

Times-tables = 2s, 5, 10s, 3s, 4s, 6s, 7s, 8s, 9s.

Repeated addition on a number line.  
3 times 5 is  $5 + 5 + 5 = 15$  or  
3 lots of 5 or  
 $5 \times 3$

$$5 \times 3 = 5 + 5 + 5$$



Multiplication square

Partitioning.

$$26 \times 4 = 104$$
$$(20 \times 4) (6 \times 4)$$
$$80 + 24 =$$

Progressing to:

Grid method of multiplication.

Two digits x one digit =

Three digits x one digit =

$23 \times 7$  is approximately  $20 \times 10 = 200$

$$\begin{array}{r|l|l} \times & 20 & 3 \\ \hline 7 & 140 & 21 \end{array} = 161$$

Year 4	Year 5	Year 6
<p>Continue to gain fluency in grid method of multiplication.</p> <p>Expanded vertical method of multiplication starting with units column.</p> $  \begin{array}{r}  \text{HTU} \\  38 \\  \times 7 \\  \hline  56 \\  210 \\  \hline  266  \end{array}  $ <p><u>Progressing to:</u></p> <p>Compact vertical method of multiplication.</p> $  \begin{array}{r}  \text{HTU} \\  38 \\  \times 7 \\  \hline  266 \\  \hline  5  \end{array}  $ <p>Know all times tables and division facts.</p>	<p>Continue to gain fluency in vertical compact methods of multiplication. Ensuring this is taught in year 5 if not before.</p> <p>Understanding of prime numbers</p>	<p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p>

Multiply 2 and 3 digit numbers by 1 digit number using formal written methods.

Recognise factor pairs

## Division ( $\div$ )

### Reception

Children will understand equal groups and share items out in play and problem solving. They will count in 2s and 10s and later in 5s.



### Year 1

The children will recognise and write the division symbol ( $\div$ ) in mathematical statements, calculating the answer with the teacher using concrete objects.

One step problems using objects and pictorial representations.  
Halves and quarters as fractions of a whole.

### Year 2

Inverse operations.  
Drawing picture.  
Sharing things out.  
Horizontal or pictorial recording.  
Remainders.

Written use of  $\div$  sign  
Children will develop their understanding of division and use jottings to support calculation

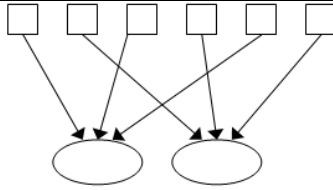
#### Sharing equally

6 sweets shared between 2 people, how many do they each get?

### Year 3

Tangible sharing.  
Grouping.  
Multiplication square.  
Inverse operations.  
Recognition of fractions and decimals as the result of division.  
Horizontal recording on a numberline.

Number lines are used in both addition and subtraction, so use of them in division as well can be confusing. If using a number line for division, children need to remember to start the line at zero. Remainders can be recorded underneath the line.



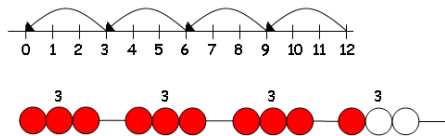
**Grouping or repeated subtraction**

There are 6 sweets, how many people can have 2 sweets each?



**Repeated subtraction using a number line or bead bar**

$12 \div 3 = 4$



The bead bar will help children with interpreting division calculations such as  $10 \div 5$  as 'how many 5s make 10?'

**Using symbols to stand for unknown numbers to complete equations using inverse operations**

$\square \div 2 = 4$     $20 \div \triangle = 4$     $\square \div \triangle = 4$

Recognise, find, name and write fractions  $\frac{1}{3}$ ,

$\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$

$35 \div 3 = 11 \text{ r } 2$



Chunking using a numberline

$35 \div 3 = 11 \text{ r } 2$



## Year 4

Progressing to :

Using the vertical method of recording from the chunking method on a numberline.

$$\begin{array}{r} 40 \\ 6 \overline{) 240} \\ \hline \end{array}$$

$$\begin{array}{r} 121 \\ 4 \overline{) 484} \\ \hline \end{array}$$

Using the compact vertical 'bus-stop' method without remainders.

$$\begin{array}{r} 121 \\ 4 \overline{) 484} \\ - 400 \\ \hline 84 \\ - 80 \\ \hline 4 \\ - 4 \\ \hline \end{array}$$

Short division of  $HTO \div O$  can be introduced as an alternative, more compact

## Year 5

Continue to gain fluency with formal written methods of division, including division with remainders and interpret them for context.

Divide whole numbers by 10 100 1000

Calculate percentages  
Work with fractions with different denominators.

$$\begin{array}{r} 32r4 \\ 6 \overline{) 96} \\ - 60 \\ \hline 136 \\ - 60 \\ \hline 76 \\ - 60 \\ \hline 16 \\ - 12 \\ \hline 4 \end{array}$$

Leading to :

$$\begin{array}{r} 32r4 \\ 6 \overline{) 96} \\ - 180 \\ \hline 16 \\ - 12 \\ \hline 4 \end{array}$$

## Year 6

Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

$$\begin{array}{r} 23r8 \\ 24 \overline{) 560} \\ - 480 \\ \hline 80 \\ - 72 \\ \hline 8 \end{array}$$

Divide proper fractions by a whole number

Progressing to decimal remainders.

recording method than chunking, but only when children are secure in the other methods.

$$\begin{array}{r} 27 \\ 3 \overline{)821} \end{array}$$

## The skill of questioning

Children cannot learn the meanings of words in isolation. The use of questions is crucial in helping them to understand mathematical ideas and use mathematical terms correctly.

It is important to ask questions in different ways so that children who do not understand the first time may pick up the meaning subsequently. Pupils for whom English is an additional language benefit and so will others who are not always familiar with the vocabulary and grammatical structures used in school.

It is easy to use certain types of questions — those that ask the listener to recall and apply facts — more often than those that require a higher level of thinking. If you can use the full range of question types you will find that children begin to give more complex answers in which they explain their thinking.

### Recalling facts

What is 3 add 7?

How many days are there in a week?

How many centimetres are there in a metre?

Is 31 a prime number?

### Applying facts

Tell me two numbers that have a difference of 12.

What unit would you choose to measure the width of the table?

What are the factors of 42?

### **Hypothesising or predicting**

Estimate the number of marbles in this jar.

If we did our survey again on Friday, how likely is it that our graph would be the same?

Roughly, what is 51 times 47?

How many rectangles in the next diagram?

And the next?

### **Designing and comparing procedures**

How might we count this pile of sticks?

How could you subtract 37 from 82?

How could we test a number to see if it is divisible by 6?

How could we find the 20th triangular number?

Are there other ways of doing it?

### **Interpreting results**

So what does that tell us about numbers that end in 5 or 0?

What does the graph tell us about the most common shoe size?

So what can we say about the sum of the angles in a triangle?

### **Applying reasoning**

The seven coins in my purse total 23p. What could they be?

In how many different ways can four children sit at a round table?

Why is the sum of two odd numbers always even?

<b>Ask children who are getting started with a piece of work:</b>	<b>Ask children who are stuck:</b>
How are you going to tackle this? What information do you have? What do you need to find out or do? What operation/s are you going to use? Will you do it mentally, with pencil and paper, using a number line, with a calculator...? Why?	Can you describe the problem in your own words? Can you talk me through what you have done so far? What did you do last time? What is different this time? Is there something that you already know that might help? Could you try it with simpler numbers... fewer numbers... using a number line...? What about putting things in order?

<p>What method are you going to use? Why?          What equipment will you need?          What questions will you need to ask?          How are you going to record what you are doing?          What do you think the answer or result will be?          Can you estimate or predict?</p>	<p>Would a table help, or a picture/diagram/graph?          Why not make a guess and check if it works?          Have you compared your work with anyone else's?</p>
<p><b>Make positive interventions to check progress while children are working, by asking:</b></p> <p>Can you explain what you have done so far?          What else is there to do?          Why did you decide to use this method or do it this way?          Can you think of another method that might have worked?          Could there be a quicker way of doing this?          What do you mean by...?          What did you notice when...?          Why did you decide to organise your results like that?          Are you beginning to see a pattern or a rule?          Do you think that this would work with other numbers?          Have you thought of all the possibilities? How can you be sure?</p>	<p><b>During the plenary session of a lesson ask:</b></p> <p>How did you get your answer?          Can you describe your method/pattern/rule to us all? Can you explain why it works?          What could you try next?          Would it work with different numbers?          What if you had started with... rather than...?          What if you could only use...?          Is it a reasonable answer/result? What makes you say so?          How did you check it?          What have you learned or found out today?          If you were doing it again, what would you do differently?          Having done this, when could you use this method/information/idea again?          Did you use any new words today? What do they mean? How do you spell them?          What are the key points or ideas that you need to remember for the next lesson?</p>



## Vocabulary

Reception	Year 1	Year 2	Year 3
<p><b>Counting and recognising numbers</b></p> <p><b>COUNTING</b>            number            zero, one, two, three... to twenty and beyond            zero, ten, twenty... one hundred            none            how many...?            count, count (up) to, count on (from, to)            count back (from, to), count in ones, twos... tens...            more, less, many, few, odd, even every other            how many times?            pattern, pair            guess how many, estimate, nearly, close to, about the same as            just over, just under            too many, too few, enough, not enough</p> <p><b>COMPARING AND ORDERING NUMBERS</b>            the same number as, as many as            Of <b>two</b> objects/amounts:</p>	<p><b>Numbers and the number system</b></p> <p><b>COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES</b>            number            zero, one, two, three... to twenty and beyond            zero, ten, twenty... one hundred            none            how many...?            count, count (up) to            count on (from, to)            count back (from, to)            count in ones, twos... tens...            more, less, many, few            odd, even            every other            how many times?            pattern, pair</p> <p><b>PLACE VALUE AND ORDERING</b>            units, ones            tens            exchange</p>	<p><b>Numbers and the number system</b></p> <p><b>COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES</b>            number            zero, one, two, three... to twenty and beyond            zero, ten, twenty... one hundred            zero, one hundred, two hundred... one thousand            none            how many...?            count, count (up) to            count on (from, to)            count back (from, to)            count in ones, twos, threes, fours, fives...            count in tens            more, less, many, few            tally            odd, even            every other            how many times?</p>	<p><b>Numbers and the number system</b></p> <p><b>COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES</b>            number            zero, one, two, three... to twenty and beyond            zero, ten, twenty... one hundred            zero, one hundred, two hundred... one thousand            none            how many...?            count, count (up) to            count on (from, to)            count back (from, to)            count in ones, twos, threes, fours, fives...            count in tens, hundreds            more, less, many, few            tally            odd, even            every other            how many times?</p>

greater, more, larger, bigger  
less, fewer, smaller  
Of **three** or more objects/amounts:  
greatest, most, biggest, largest  
least, fewest, smallest  
one more, ten more  
one less, ten less  
compare, order, size  
first, second, third... tenth  
last, last but one  
before, after, next, between, above,  
below

### **Adding and subtracting**

add, more, and, make, sum, total  
altogether, score, double, one more, two  
more, ten more...  
how many more to make... ?  
how many more is... than...?  
take (away), leave  
how many are left/left over?  
how many have gone?  
one less, two less... ten less...  
how many fewer is... than...?  
difference between  
is the same as

### **Solving problems**

#### **REASONING ABOUT NUMBERS OR SHAPES**

pattern, puzzle, answer, right, wrong  
what could we try next?  
how did you work it out?  
count, sort, group, set, match, same,  
different, list

#### **PROBLEMS INVOLVING 'REAL LIFE' OR MONEY**

compare  
double  
half, halve  
pair  
count out, share out  
left, left over  
money  
coin

digit  
'teens' number  
the same number as, as many as  
equal to  
Of **two** objects/amounts:  
greater, more, larger, bigger  
less, fewer, smaller  
Of **three** or more objects/amounts:  
greatest, most, biggest, largest  
least, fewest, smallest  
one more, ten more  
one less, ten less  
compare  
order  
size  
first, second, third... tenth, eleventh...  
twentieth  
last, last but one  
before, after  
next  
between, half-way between  
above, below  
**ESTIMATING**  
guess how many, estimate  
nearly, roughly, close to  
about the same as  
just over, just under  
too many, too few, enough, not enough

### **Calculations**

#### **ADDITION AND SUBTRACTION**

+, add, more, plus  
make, sum, total  
altogether  
score  
double, near double  
one more, two more... ten more  
how many more to make...?  
how many more is... than...?  
how much more is...?  
-, subtract, take (away), minus  
leave  
how many are left/left over?  
how many have gone?  
one less, two less, ten less...

multiple of  
sequence  
continue  
predict  
pattern, pair, rule  
**PLACE VALUE AND ORDERING**  
units, ones  
tens, hundreds  
digit  
one-, two- or three-digit number  
'teens' number  
place, place value  
stands for, represents  
exchange  
the same number as, as many as  
equal to  
Of **two** objects/amounts:  
greater, more, larger, bigger  
less, fewer, smaller  
Of **three** or more objects/amounts:  
greatest, most, biggest, largest  
least, fewest, smallest  
one more, ten more  
one less, ten less  
compare  
order  
size  
first, second, third... tenth... twentieth  
twenty-first, twenty-second...  
last, last but one  
before, after  
next  
between, half-way between  
above, below  
**ESTIMATING**  
guess how many, estimate  
nearly, roughly, close to  
about the same as  
just over, just under  
exact, exactly  
too many, too few, enough, not enough  
round, nearest, round to the nearest ten  
**FRACTIONS**  
part, equal parts

multiple of  
sequence  
continue  
predict  
pattern, pair, rule  
relationship  
**PLACE VALUE AND ORDERING**  
units, ones  
tens, hundreds  
digit  
one-, two- or three-digit number  
'teens' number  
place, place value  
stands for, represents  
exchange  
the same number as, as many as  
equal to  
Of **two** objects/amounts:  
greater, more, larger, bigger  
less, fewer, smaller  
Of **three** or more objects/amounts:  
greatest, most, biggest, largest  
least, fewest, smallest  
one more, ten more, one hundred more  
one less, ten less, one hundred less  
compare  
order  
size  
first, second, third... tenth... twentieth  
twenty-first, twenty-second...  
last, last but one  
before, after  
next  
between, half-way between  
above, below  
**ESTIMATING**  
guess how many, estimate  
nearly, roughly, close to  
approximate, approximately  
about the same as  
just over, just under  
exact, exactly  
too many, too few, enough, not enough  
round (up or down)

penny, pence, pound  
price  
cost  
buy  
sell  
spend, spent  
pay  
change  
dear, costs more  
cheap, costs less, cheaper  
costs the same as  
how much...? how many...?  
total

## Measures, shape and space

### MEASURES (GENERAL)

measure  
size  
compare  
guess, estimate  
enough, not enough  
too much, too little  
too many, too few  
nearly, close to, about the same as  
just over, just under

### LENGTH

length, width, height, depth  
long, short, tall  
high, low  
wide, narrow  
deep, shallow  
thick, thin  
longer, shorter, taller, higher... and so on  
longest, shortest, tallest, highest... and so on  
far, near, close

### MASS

weigh, weighs, balances  
heavy/light, heavier/lighter,  
heaviest/lightest  
balance, scales, weight

### CAPACITY

how many fewer is... than...?  
how much less is...?  
difference between  
half, halve  
=, equals, sign, is the same as

## Solving problems

### MAKING DECISIONS AND REASONING

pattern  
puzzle  
answer  
right, wrong  
what could we try next?  
how did you work it out?  
count out, share out, left, left over  
number sentence  
sign, operation

### MONEY

money  
coin  
penny, pence, pound  
price  
cost  
buy  
sell  
spend, spent  
pay  
change  
dear, costs more  
cheap, costs less, cheaper  
costs the same as  
how much...? how many...?  
total

## Organising and using data

count, sort, vote  
group, set  
list  
same, different  
table

## Measures, shape and space

### MEASURES (GENERAL)

measure

fraction  
one whole  
one half, two halves  
one quarter, two... three... four quarters

## Calculations

### ADDITION AND SUBTRACTION

+, add, addition, more, plus  
make, sum, total  
altogether  
score  
double, near double  
one more, two more... ten more... one hundred more  
how many more to make...?  
how many more is... than...?  
how much more is...?  
-, subtract, subtraction, take (away), minus  
leave, how many are left/left over?  
one less, two less... ten less... one hundred less  
how many fewer is... than...?  
how much less is...?  
difference between  
half, halve  
=, equals, sign, is the same as  
tens boundary

### MULTIPLICATION AND DIVISION

lots of, groups of  
, times, multiply, multiplied by  
multiple of  
once, twice, three times... ten times...  
times as (big, long, wide... and so on)  
repeated addition  
array  
row, column  
double, halve  
share, share equally  
one each, two each, three each...  
group in pairs, threes... tens  
equal groups of  
, divide, divided by, divided into  
left, left over

nearest, round to the nearest ten

### FRACTIONS

part, equal parts  
fraction  
one whole  
one half, two halves  
one quarter, two... three... four quarters  
one third, two thirds, three thirds  
one tenth

## Calculations

### ADDITION AND SUBTRACTION

+, add, addition, more, plus  
make, sum, total  
altogether  
score  
double, near double  
one more, two more... ten more... one hundred more  
how many more to make...?  
how many more is... than...?  
how much more is...?  
-, subtract, subtraction, take (away), minus  
leave, how many are left/left over?  
one less, two less... ten less... one hundred less  
how many fewer is... than...?  
how much less is...?  
difference between  
half, halve  
=, equals, sign, is the same as  
tens boundary, hundreds boundary  
**MULTIPLICATION AND DIVISION**  
lots of, groups of  
, times, multiply, multiplication, multiplied by  
multiple of, product  
once, twice, three times... ten times...  
times as (big, long, wide... and so on)  
repeated addition  
array  
row, column  
double, halve  
share, share equally

<p>full half full empty holds container <b>TIME</b> time days of the week: Monday, Tuesday... day, week birthday, holiday morning, afternoon, evening, night bedtime, dinnertime, playtime today, yesterday, tomorrow before, after next, last now, soon, early, late quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time hour, o'clock clock, watch, hands <b>EXPLORING PATTERNS, SHAPE AND SPACE</b> shape, pattern flat curved, straight round hollow, solid corner face, side, edge, end sort make, build, draw <b>3D SHAPES</b> cube pyramid sphere cone <b>2D SHAPES</b> circle triangle square rectangle</p>	<p>size compare guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, close to, about the same as just over, just under <b>LENGTH</b> length, width, height, depth long, short, tall high, low wide, narrow deep, shallow thick, thin longer, shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on far, near, close metre ruler, metre stick <b>MASS</b> weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest balance, scales, weight <b>CAPACITY</b> full half full empty holds container <b>TIME</b> time days of the week: Monday, Tuesday... seasons: spring, summer, autumn, winter day, week, month, year weekend, birthday, holiday morning, afternoon, evening night, midnight bedtime, dinnertime, playtime</p>	<p><b>Solving problems</b> <b>MAKING DECISIONS AND REASONING</b> pattern, puzzle calculate, calculation mental calculation jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol <b>MONEY</b> money coin penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more cheap, costs less, cheaper how much...? how many...? total <b>Organising and using data</b> count, tally, sort, vote graph, block graph, pictogram represent group, set same, different list, table label, title most popular, most common least popular, least common <b>Measures, shape and space</b> <b>MEASURES (GENERAL)</b> measure size compare measuring scale</p>	<p>one each, two each, three each group in pairs, threes... tens equal groups of ,, divide, division, divided by, divided into left, left over, remainder <b>Solving problems</b> <b>MAKING DECISIONS AND REASONING</b> pattern, puzzle calculate, calculation mental calculation method jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol, equation <b>MONEY</b> money, coin, note, penny, pence, pound (£), price, cost, buy, bought, sell, sold spend, spent, pay, change dear, costs more, more/most expensive cheap, costs less, cheaper, less/least expensive how much...? how many...? total, amount value, worth <b>Handling data</b> count, tally, sort, vote graph, block graph, pictogram represent group, set list, chart, bar chart table, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular, most common least popular, least common <b>Measures, shape and space</b></p>
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<p>star</p> <p><b>PATTERNS AND SYMMETRY</b></p> <p>size bigger, larger, smaller symmetrical pattern repeating pattern match</p> <p><b>POSITION, DIRECTION AND MOVEMENT</b></p> <p>position over, under above, below top, bottom, side on, in outside, inside around in front, behind front, back before, after beside, next to opposite apart between middle, edge corner direction left, right up, down forwards, backwards, sideways across close, far, near along through to, from, towards, away from movement slide roll turn stretch, bend</p> <p><b>Instructions</b></p> <p>listen join in say</p>	<p>today, yesterday, tomorrow before, after next, last now, soon, early, late quick, quicker, quickest, quickly fast, faster, fastest slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time hour, o'clock, half past clock, watch, hands how long ago? how long will it be to...? how long will it take to...? how often? always, never, often, sometimes, usually once, twice</p> <p><b>SHAPE AND SPACE</b></p> <p>shape, pattern flat curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, draw</p> <p><b>3D SHAPES</b></p> <p>cube cuboid pyramid sphere cone cylinder</p> <p><b>2D SHAPES</b></p> <p>circle triangle square rectangle star</p> <p><b>PATTERNS AND SYMMETRY</b></p> <p>size</p>	<p>guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to, about the same as just over, just under</p> <p><b>LENGTH</b></p> <p>length, width, height, depth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on far, further, furthest, near, close metre (<i>m</i>), centimetre (<i>cm</i>) ruler, metre stick, tape measure</p> <p><b>MASS</b></p> <p>weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest kilogram (<i>kg</i>), half-kilogram, gram (<i>g</i>) balance, scales, weight</p> <p><b>CAPACITY</b></p> <p>capacity full, half full empty holds, contains litre (<i>l</i>), half-litre, millilitre (<i>ml</i>) container</p> <p><b>TIME</b></p> <p>time days of the week: Monday, Tuesday... months of the year: January, February... seasons: spring, summer, autumn, winter day, week, fortnight, month, year weekend, birthday, holiday morning, afternoon, evening, night, midnight bedtime, dinnertime, playtime today, yesterday, tomorrow before, after</p>	<p><b>MEASURES (GENERAL)</b></p> <p>measure size compare measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to, about the same as, approximately just over, just under</p> <p><b>LENGTH</b></p> <p>length, width, height, depth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on far, further, furthest, near, close distance apart/between, distance to... from... kilometre (<i>km</i>), metre (<i>m</i>), centimetre (<i>cm</i>) mile ruler, metre stick, tape measure</p> <p><b>MASS</b></p> <p>weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest kilogram (<i>kg</i>), half-kilogram, gram (<i>g</i>) balance, scales, weight</p> <p><b>CAPACITY</b></p> <p>capacity full, half full empty holds, contains litre (<i>l</i>), half-litre, millilitre (<i>ml</i>) container</p> <p><b>TIME</b></p> <p>time days of the week: Monday, Tuesday... months of the year: January, February...</p>
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<p>think  imagine  remember  start from  start with  start at  look at  point to  show me  put, place  fit  arrange  rearrange  change, change over  split  separate  carry on, continue  repeat  what comes next?  find  choose  collect  use  make  build  tell me  describe  pick out  talk about  explain  show me  read  write  trace  copy  complete  finish, end  fill in  shade  colour</p> <p><b>General</b>  same number/s  different number/s  missing number/s</p>	<p>bigger, larger, smaller  symmetrical  pattern  repeating pattern  match  <b>POSITION, DIRECTION AND MOVEMENT</b>  position  over, under, underneath  above, below  top, bottom, side  on, in  outside, inside  around  in front, behind  front, back  before, after  beside, next to  opposite  apart  between  middle, edge  centre  corner  direction  journey  left, right  up, down  forwards, backwards, sideways  across  close, far, near  along  through  to, from, towards, away from  movement  slide  roll  turn, whole turn, half turn  stretch, bend  Words new to Year 1 are in red</p> <p><b>Instructions</b>  listen, join in, say, think, imagine  remember  start from, start with, start at, look at</p>	<p>next, last  now, soon, early, late  quick, quicker, quickest, quickly  fast, faster, fastest  slow, slower, slowest, slowly  old, older, oldest  new, newer, newest  takes longer, takes less time  how long ago? how long will it be to...?  how long will it take to...?  hour, minute, second  o'clock, half past, quarter to, quarter past  clock, watch, hands  digital/analogue clock/watch, timer  how often?  always, never, often, sometimes, usually  once, twice</p> <p><b>SHAPE AND SPACE</b>  shape, pattern  flat, curved, straight  round  hollow, solid  corner  point, pointed  face, side, edge, end  sort  make, build, draw  surface</p> <p><b>3D SHAPES</b>  cube  cuboid  pyramid  sphere  cone  cylinder</p> <p><b>2D SHAPES</b>  circle, circular  triangle, triangular  square  rectangle, rectangular  star  pentagon  hexagon</p>	<p>seasons: spring, summer, autumn, winter  day, week, fortnight, month, year, century  weekend, birthday, holiday  calendar, date  morning, afternoon, evening, night, midnight  am, pm  bedtime, dinnertime, playtime  today, yesterday, tomorrow  before, after  next, last  now, soon, early, late, earliest, latest  quick, quicker, quickest, quickly  fast, faster, fastest  slow, slower, slowest, slowly  old, older, oldest  new, newer, newest  takes longer, takes less time  how long ago? how long will it be to...?  how long will it take to...?  hour, minute, second  o'clock, half past, quarter to, quarter past  clock, watch, hands  digital/analogue clock/watch, timer  how often?  always, never, often, sometimes, usually  once, twice</p> <p><b>SHAPE AND SPACE</b>  shape, pattern  flat, curved, straight  round  hollow, solid  corner  point, pointed  face, side, edge, end  sort  make, build, draw  surface  right-angled  vertex, vertices  layer, diagram</p>
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number facts  
number line, number track  
number square  
number cards  
counters, cubes, blocks, rods  
die, dice  
dominoes  
pegs, peg board  
same way, different way  
best way, another way  
in order, in a different order  
not  
all, every, each

point to, show me, put, place, fit  
arrange, rearrange, change, change  
over, split, separate, carry on, continue  
repeat  
what comes next?  
find, choose, collect, use, make, build  
tell me, describe, pick out, talk about  
explain, show me, read, write, record  
trace, copy, complete, finish, end  
fill in, shade, colour, tick, cross  
draw, draw a line between  
join (up), ring, arrow, cost, count  
work out, answer, check

### General

same number/s  
different number/s  
missing number/s  
number facts  
number line, number track  
number square  
number cards  
abacus  
counters, cubes, blocks, rods  
die, dice  
dominoes  
pegs, peg board  
same way, different way  
best way, another way  
in order, in a different order  
not  
all, every, each

octagon  
**PATTERNS AND SYMMETRY**  
size  
bigger, larger, smaller  
symmetrical  
line of symmetry  
fold  
match  
mirror line, reflection  
pattern  
repeating pattern  
**POSITION, DIRECTION AND MOVEMENT**

position  
over, under, underneath  
above, below  
top, bottom, side  
on, in, outside, inside, around, in front,  
behind, front, back, before, after, beside,  
next to, opposite, apart, between  
middle, edge, centre, corner, direction  
journey, route, left, right, up, down  
higher, lower, forwards, backwards,  
sideways, across, close, far, near  
along, through, to, from, towards, away  
from, clockwise, anti-clockwise  
movement, slide, roll  
whole turn, half turn, quarter turn  
right angle, straight line, stretch, bend  
read, write, record, write in figures  
present, represent, trace, copy  
complete, finish, end, fill in, shade,  
colour, label, tick, cross, draw  
draw a line between, join (up)  
ring, arrow, cost, count, tally  
calculate, work out, solve, answer  
check

### General

same, different  
missing number/s  
number facts  
number pairs  
number bonds  
number line, number track

**3D SHAPES**  
cube, cuboid, pyramid, sphere, hemi-  
sphere, cone, cylinder, prism  
**2D SHAPES**  
circle, circular, semi-circle  
triangle, triangular  
square  
rectangle, rectangular  
star  
pentagon, pentagonal  
hexagon, hexagonal  
octagon, octagonal  
quadrilateral  
**PATTERNS AND SYMMETRY**  
size, bigger, larger, smaller  
symmetrical  
line of symmetry  
fold, match  
mirror line, reflection  
pattern, repeating pattern  
**POSITION, DIRECTION AND MOVEMENT**  
position  
over, under, underneath, above, below  
top, bottom, side, on, in, outside, inside  
around, in front, behind  
front, back, before, after  
beside, next to, opposite, apart  
between, middle, edge, centre  
corner, direction  
journey, route, map, plan  
left, right, up, down, higher, lower  
forwards, backwards, sideways  
across, close, far, near  
along, through  
to, from, towards, away from  
ascend, descend  
grid, row, column  
clockwise, anti-clockwise  
compass point  
north, south, east, west (N, S, E, W)  
horizontal, vertical  
diagonal, movement, slide, roll  
whole turn, half turn, quarter turn

		<p>number square, hundred square  number cards  number grid  abacus  counters, cubes, blocks, rods  die, dice  dominoes  pegs, peg board  geo-strips  same way, different way  best way, another way  in order, in a different order  not  all, every, each</p> <p style="text-align: center;"><b>Instructions</b></p> <p>listen, join in, say, recite, think, imagine  remember, start from, start with  start at, look at, point to, show me  put, place, fit, arrange, rearrange  change, change over, split  separate, carry on, continue  repeat  what comes next?  predict  describe the pattern  describe the rule  find, find all, find different  investigate, choose, decide, collect  use, make, build, tell me, describe  name, pick out, discuss, talk about  explain, explain your method  explain how you got your answer  give an example of...  show how you...</p>	<p>angle, ...is a greater/smaller angle than  right angle, straight line  stretch, bend</p> <p style="text-align: center;"><b>Instructions</b></p> <p>listen, join in, say, recite, think  imagine, remember  start from, start with, start at  look at, point to, show me  put, place, fit  arrange, rearrange  change, change over  split, separate  carry on, continue, repeat  what comes next?  predict  describe the pattern  describe the rule  find, find all, find different  investigate, choose, decide  collect, use, make, build  tell me, describe, name  pick out, discuss, talk about  explain, explain your method  explain how you got your answer  give an example of...  show how you...  show your working  read, write, record  write in figures  present, represent  interpret, trace, copy, complete  finish, end, fill in  shade, colour, label, tick, cross  draw, sketch, draw a line between  join (up), ring, arrow, cost, count, tally  calculate, work out, solve  investigate, question  answer, check</p> <p style="text-align: center;"><b>General</b></p> <p>same, different  missing number/s  number facts, number pairs, number  bonds</p>
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			<p>greatest value, least value  number line, number track  number square, hundred square  number cards, number grid, abacus  counters, cubes, blocks, rods  die, dice  dominoes, pegs, peg board, geo-strips  same way, different way  best way, another way  in order, in a different order  not, all, every, each</p>
<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	
<p style="text-align: center;"><b>Numbers and the number system</b></p> <p><b>PLACE VALUE, ORDERING AND ROUNDING</b>  units, ones  tens, hundreds, thousands  ten thousand, hundred thousand, million  digit, one-, two-, three- or four-digit  number, numeral, 'teens' number  place, place value, stands for,  represents, exchange  the same number as, as many as  equal to  Of <b>two</b> objects/amounts:  &gt;, greater than, more than, larger than,  bigger than  &lt;, less than, fewer than, smaller than  Of <b>three</b> or more objects/amounts:  greatest, most, largest, biggest  least, fewest, smallest  one... ten... one hundred... one  thousand more/less  compare, order, size  first... tenth... twentieth  last, last but one</p>	<p style="text-align: center;"><b>Numbers and the number system</b></p> <p><b>PLACE VALUE, ORDERING AND ROUNDING</b>  units, ones  tens, hundreds, thousands  ten thousand, hundred thousand, million  digit, one-, two-, three- or four-digit  number, numeral  'teens' number, place, place value  stands for, represents, exchange  the same number as, as many as  equal to  Of <b>two</b> objects/amounts:  &gt;, greater than, more than, larger than,  bigger than  &lt;, less than, fewer than, smaller than  <sup>3</sup>, greater than or equal to  <sup>2</sup>, less than or equal to  Of <b>three</b> or more objects/amounts:  greatest, most, largest, biggest  least, fewest, smallest  one... ten... one hundred... one  thousand more/less, compare, order,  size, ascending/descending order</p>	<p style="text-align: center;"><b>Numbers and the number system</b></p> <p><b>PLACE VALUE, ORDERING AND ROUNDING</b>  units, ones  tens, hundreds, thousands  ten thousand, hundred thousand, million  digit, one-, two-, three- or four-digit number  numeral  'teens' number  place, place value  stands for, represents  exchange  the same number as, as many as  equal to  Of <b>two</b> objects/amounts:  &gt;, greater than, more than, larger than, bigger than  &lt;, less than, fewer than, smaller than  <sup>3</sup>, greater than or equal to  <sup>2</sup>, less than or equal to  Of <b>three</b> or more objects/amounts:  greatest, most, largest, biggest  least, fewest, smallest  one... ten... one hundred... one thousand more/less  compare, order, size  ascending/descending order</p>	

<p>before, after next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately just over, just under exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten round to the nearest hundred integer, positive, negative above/below zero, minus</p> <p><b>PROPERTIES OF NUMBERS AND NUMBER SEQUENCES</b> number, count, how many...? odd, even every other how many times? multiple of digit next, consecutive sequence continue predict pattern, pair, rule relationship sort, classify, property</p> <p><b>FRACTIONS AND DECIMALS</b> part, equal parts fraction one whole half, quarter, eighth third, sixth fifth, tenth, twentieth proportion, in every, for every decimal, decimal fraction decimal point, decimal place</p> <p><b>Calculations</b> <b>ADDITION AND SUBTRACTION</b> add, addition, more, plus, increase sum, total, altogether</p>	<p>first... tenth... twentieth last, last but one, before, after, next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as, approximate, approximately Å, is approximately equal to just over, just under, exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten/hundred round to the nearest thousand integer, positive, negative above/below zero, minus</p> <p><b>PROPERTIES OF NUMBERS AND NUMBER SEQUENCES</b> number, count, how many...? odd, even, every other, how many times? multiple of, digit, next, consecutive sequence, continue, predict pattern, pair, rule, relationship sort, classify, property formula, divisible (by), divisibility, factor square number one squared, two squared... (1<sub>2</sub>, 2<sub>2</sub>...)</p> <p><b>FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION</b> part, equal parts, fraction, proper/improper fraction mixed number, numerator, denominator equivalent, reduced to, cancel one whole, half, quarter, eighth third, sixth, ninth, twelfth fifth, tenth, twentieth, hundredth proportion, ratio in every, for every, to every, as many as decimal, decimal fraction decimal point, decimal place percentage, per cent, %</p> <p><b>Calculations</b> <b>ADDITION AND SUBTRACTION</b> add, addition, more, plus, increase</p>	<p>first... tenth... twentieth last, last but one, before, after next, between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately Å, is approximately equal to just over, just under exact, exactly, too many, too few, enough, not enough round (up or down), nearest round to the nearest ten/hundred/thousand integer, positive, negative, above/below zero, minus</p> <p><b>PROPERTIES OF NUMBERS AND NUMBER SEQUENCES</b> number, count, how many...? odd, even, every other how many times? multiple of, digit, next, consecutive, sequence continue, predict, pattern, pair, rule, relationship sort, classify, property, formula divisible (by), divisibility, factor, factorise square number, one squared, two squared... (1<sub>2</sub>, 2<sub>2</sub>...) prime, prime factor</p> <p><b>FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION</b> part, equal parts, fraction, proper/improper fraction mixed number, numerator, denominator equivalent, reduced to, cancel one whole, half, quarter, eighth, third, sixth, ninth, twelfth fifth, tenth, twentieth, hundredth, thousandth proportion, ratio, in every, for every, to every, as many as decimal, decimal fraction, decimal point, decimal place percentage, per cent, %</p> <p><b>Calculations</b> <b>ADDITION AND SUBTRACTION</b> add, addition, more, plus, increase sum, total, altogether, score double, near double, how many more to make...? subtract, subtraction, take (away), minus, decrease leave, how many are left/left over? difference between, half, halve how many more/fewer is... than...? how much more/less is...? equals, sign, is the same as</p>
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score  
double, near double  
how many more to make...?  
subtract, subtraction, take (away),  
minus, decrease  
leave, how many are left/left over?  
difference between  
half, halve  
how many more/fewer is... than...?  
how much more/less is...?  
equals, sign, is the same as  
tens boundary, hundreds boundary  
inverse  
**MULTIPLICATION AND DIVISION**  
lots of, groups of  
times, multiply, multiplication, multiplied  
by  
multiple of, product  
once, twice, three times... ten times...  
times as (big, long, wide... and so on)  
repeated addition  
array  
row, column  
double, halve  
share, share equally  
one each, two each, three each...  
group in pairs, threes... tens  
equal groups of  
divide, division, divided by, divided into  
remainder  
factor, quotient, divisible by  
inverse

### **Solving problems**

#### **MAKING DECISIONS AND REASONING**

pattern, puzzle  
calculate, calculation  
mental calculation  
method  
jotting  
answer  
right, correct, wrong  
what could we try next?  
how did you work it out?

sum, total, altogether, score  
double, near double  
how many more to make...?  
subtract, subtraction, take (away),  
minus, decrease, leave, how many are  
left/left over?  
difference between  
half, halve  
how many more/fewer is... than...?  
how much more/less is...?  
equals, sign, is the same as  
tens boundary, hundreds boundary  
units boundary, tenths boundary  
inverse  
**MULTIPLICATION AND DIVISION**  
lots of, groups of  
times, multiply, multiplication, multiplied  
by, multiple of, product  
once, twice, three times... ten times...  
times as (big, long, wide... and so on)  
repeated addition, array, row, column,  
double, halve, share, share equally  
one each, two each, three each...  
group in pairs, threes... tens  
equal groups of  
divide, division, divided by, divided into  
remainder, factor, quotient, divisible by  
inverse  
**USING A CALCULATOR**  
calculator, display, key, enter, clear  
constant

### **Solving problems**

#### **MAKING DECISIONS AND REASONING**

pattern, puzzle, calculate, calculation  
mental calculation, method, strategy  
jotting, answer, right, correct, wrong  
what could we try next?  
how did you work it out?  
number sentence, sign, operation,  
symbol, equation  
**MONEY**  
money, coin, note, penny, pence, pound  
(£), price, cost, buy, bought, sell, sold

tens boundary, hundreds boundary  
units boundary, tenths boundary  
inverse  
**MULTIPLICATION AND DIVISION**  
lots of, groups of  
times, multiply, multiplication, multiplied by  
multiple of, product  
once, twice, three times... ten times...  
times as (big, long, wide... and so on)  
repeated addition  
array, row, column, double, halve  
share, share equally, one each, two each, three each...  
group in pairs, threes... tens  
equal groups of, divide, division, divided by, divided into  
remainder, factor, quotient, divisible by  
inverse  
**USING A CALCULATOR**  
calculator, display, key  
enter, clear, sign change  
constant, recurring, memory, operation key

### **Solving problems**

#### **MAKING DECISIONS AND REASONING**

pattern, puzzle  
calculate, calculation  
mental calculation  
method, strategy  
jotting  
answer  
right, correct, wrong  
what could we try next?  
how did you work it out?  
number sentence  
sign, operation, symbol, equation  
**MONEY**  
money  
coin, note  
penny, pence, pound (£)  
price, cost  
buy, bought, sell, sold  
spend, spent  
pay  
change  
dear, costs more, more/most expensive  
cheap, costs less, cheaper, less/least expensive

number sentence  
sign, operation, symbol, equation  
**MONEY**  
money  
coin, note  
penny, pence, pound (£)  
price, cost  
buy, bought, sell, sold  
spend, spent  
pay  
change  
dear, costs more, more/most expensive  
cheap, costs less, cheaper, less/least expensive  
how much...? how many...?  
total, amount  
value, worth

### Handling data

count, tally, sort, vote  
survey, questionnaire, data  
graph, block graph, pictogram  
represent  
group, set  
list, chart, bar chart, tally chart  
table, frequency table  
Carroll diagram, Venn diagram  
label, title, axis, axes  
diagram  
most popular, most common  
least popular, least common

### Measures, shape and space

#### MEASURES (GENERAL)

measure, measurement  
size  
compare  
unit, standard unit  
metric unit, imperial unit  
measuring scale, division  
guess, estimate  
enough, not enough  
too much, too little  
too many, too few

spend, spent, pay, change  
dear, costs more, more/most expensive  
cheap, costs less, cheaper, less/least expensive  
how much...? how many...?  
total, amount, value, worth  
discount, currency

### Handling data

count, tally, sort, vote  
survey, questionnaire, data, database  
graph, block graph, line graph  
pictogram, represent, group, set  
list, chart, bar chart, bar line chart  
tally chart, table, frequency table  
Carroll diagram, Venn diagram  
label, title, axis, axes, diagram  
most popular, most common  
least popular, least common  
mode, range  
maximum/minimum value  
classify, outcome

#### PROBABILITY

fair, unfair, likely, unlikely, likelihood  
certain, uncertain  
probable, possible, impossible  
chance, good chance, poor chance, no chance, risk, doubt,

### Measures, shape and space

#### MEASURES (GENERAL)

measure, measurement  
size, compare, unit, standard unit  
metric unit, imperial unit  
measuring scale, division  
guess, estimate, enough, not enough  
too much, too little, too many, too few  
nearly, roughly, about, close to  
about the same as, approximately  
just over, just under

#### LENGTH

length, width, height, depth, breadth  
long, short, tall, high, low, wide, narrow,  
deep, shallow, thick, thin, longer,

how much...? how many...?  
total, amount, value, worth  
discount, profit, loss  
currency

### Handling data

count, tally, sort, vote  
survey, questionnaire  
data, database  
graph, block graph, line graph  
pictogram,  
represent  
group, set  
list, chart, bar chart, bar line chart  
tally chart  
table, frequency table  
Carroll diagram, Venn diagram  
label, title, axis, axes  
diagram  
most popular, most common  
least popular, least common  
mode, range, mean, average, median  
statistics, distribution  
maximum/minimum value  
classify, outcome

#### PROBABILITY

fair, unfair  
likely, unlikely, likelihood, equally likely  
certain, uncertain  
probable, possible, impossible  
chance, good chance,  
poor chance, no chance  
equal chance, even chance, fifty-fifty chance  
risk, doubt  
biased, random

### Measures, shape and space

#### MEASURES (GENERAL)

measure, measurement  
size  
compare  
unit, standard unit  
metric unit, imperial unit  
measuring scale, division  
guess, estimate

<p>nearly, roughly, about, close to about the same as, approximately just over, just under</p> <p><b>LENGTH</b> length, width, height, depth, breadth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on far, further, furthest, near, close distance apart/between, distance to... from... edge, perimeter kilometre (<i>km</i>), metre (<i>m</i>) centimetre (<i>cm</i>), millimetre (<i>mm</i>) mile ruler, metre stick, tape measure</p> <p><b>MASS</b> mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs kilogram (<i>kg</i>), half-kilogram, gram (<i>g</i>) balance, scales</p> <p><b>CAPACITY</b> capacity full, half full empty holds, contains litre (<i>l</i>), half-litre, millilitre (<i>ml</i>) pint container, measuring cylinder</p> <p><b>AREA</b> area, covers, surface square centimetre (<i>cm</i><sup>2</sup>)</p> <p><b>TIME</b> time days of the week: Monday, Tuesday... months of the year: January, February... seasons: spring, summer, autumn, winter</p>	<p>shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on, far, further, furthest, near, close distance apart/between, distance to... from... edge, perimeter kilometre (<i>km</i>), metre (<i>m</i>) centimetre (<i>cm</i>), millimetre (<i>mm</i>) mile ruler, metre stick, tape measure</p> <p><b>MASS</b> mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs kilogram (<i>kg</i>), half-kilogram, gram (<i>g</i>) balance, scales</p> <p><b>CAPACITY</b> capacity, full, half full, empty holds, contains, litre (<i>l</i>), half-litre, millilitre (<i>ml</i>), pint, gallon container, measuring cylinder</p> <p><b>AREA</b> area, covers, surface square centimetre (<i>cm</i><sup>2</sup>), square metre (<i>m</i><sup>2</sup>) square millimetre (<i>mm</i><sup>2</sup>)</p> <p><b>TIME</b> time days of the week: Monday, Tuesday... months of the year: January, February... seasons: spring, summer, autumn, winter day, week, fortnight, month year, leap year, century, millennium weekend, birthday, holiday calendar, date, date of birth morning, afternoon, evening, night am, pm, noon, midnight today, yesterday, tomorrow before, after, next, last now, soon, early, late, earliest, latest quick, quicker, quickest, quickly</p>	<p>enough, not enough too much, too little too many, too few nearly, roughly, about, close to about the same as, approximately just over, just under</p> <p><b>LENGTH</b> length, width, height, depth, breadth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on far, further, furthest, near, close distance apart/between, distance to... from... edge, perimeter, circumference kilometre (<i>km</i>), metre (<i>m</i>) centimetre (<i>cm</i>), millimetre (<i>mm</i>) mile, yard, feet, foot, inches, inch ruler, metre stick, tape measure, compasses</p> <p><b>MASS</b> mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs tonne, kilogram (<i>kg</i>), half-kilogram, gram (<i>g</i>) pound (<i>lb</i>), ounce (<i>oz</i>) balance, scales</p> <p><b>CAPACITY</b> capacity full, half full, empty holds, contains litre (<i>l</i>), half-litre, centilitre (<i>cl</i>), millilitre (<i>ml</i>) pint, gallon container, measuring cylinder</p> <p><b>AREA</b> area, covers, surface square centimetre (<i>cm</i><sup>2</sup>), square metre (<i>m</i><sup>2</sup>) square millimetre (<i>mm</i><sup>2</sup>)</p> <p><b>TIME</b> time days of the week: Monday, Tuesday... months of the year: January, February... seasons: spring, summer, autumn, winter day, week, fortnight, month year, leap year, century, millennium</p>
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<p>day, week, fortnight, month  year, leap year, century, millennium  weekend, birthday, holiday  calendar, date, date of birth  morning, afternoon, evening, night  am, pm, noon, midnight  today, yesterday, tomorrow  before, after, next, last  now, soon, early, late, earliest, latest  quick, quicker, quickest, quickly  fast, faster, fastest, slow, slower,  slowest, slowly  old, older, oldest, new, newer, newest  takes longer, takes less time  how long ago? how long will it be to...?  how long will it take to...?  timetable, arrive, depart  hour, minute, second  o'clock, half past, quarter to, quarter  past  clock, watch, hands  digital/analogue clock/watch, timer  how often?  always, never, often, sometimes, usually</p> <p><b>SHAPE AND SPACE</b>  shape, pattern, flat, line, curved, straight  round, hollow, solid, corner  point, pointed, face, side, edge, end  sort, make, build, construct, draw,  sketch, centre, radius, diameter  net, surface, angle, right-angled  base, square-based, vertex, vertices  layer, diagram, regular, irregular  concave, convex, open, closed</p> <p><b>3D SHAPES</b>  3D, three-dimensional, cube  cuboid, pyramid, sphere, hemi-sphere,  spherical, cone, cylinder, cylindrical  prism, tetrahedron, polyhedron</p> <p><b>2D SHAPES</b>  2D, two-dimensional, circle, circular,  semi-circle, triangle, triangular  equilateral triangle, isosceles triangle  square, rectangle, rectangular, oblong</p>	<p>fast, faster, fastest, slow, slower,  slowest, slowly  old, older, oldest, new, newer, newest  takes longer, takes less time  how long ago? how long will it be to...?  how long will it take to...?  timetable, arrive, depart  hour, minute, second  o'clock, half past, quarter to, quarter  past  clock, watch, hands  digital/analogue clock/watch, timer  24-hour clock, 12-hour clock  how often?  always, never, often, sometimes, usually</p> <p><b>SHAPE AND SPACE</b>  shape, pattern, flat, line, curved, straight  round, hollow, solid, corner  point, pointed, face, side, edge, end  sort, make, build, construct, draw,  sketch, centre, radius, diameter  net, surface  angle, right-angled, congruent  base, square-based, vertex, vertices  layer, diagram, regular, irregular  concave, convex, open, closed</p> <p><b>3D SHAPES</b>  3D, three-dimensional, cube, cuboid  pyramid, sphere, hemi-sphere, spherical  cone, cylinder, cylindrical  prism, tetrahedron, polyhedron,  octahedron</p> <p><b>2D SHAPES</b>  2D, two-dimensional, circle, circular,  semi-circle, triangle, triangular,  equilateral triangle, isosceles triangle,  scalene triangle, square  rectangle, rectangular, oblong  pentagon, pentagonal, hexagon,  hexagonal, heptagon, octagon,  octagonal, polygon, quadrilateral</p> <p><b>PATTERNS AND SYMMETRY</b>  size, bigger, larger, smaller  symmetrical, line of symmetry, axis of</p>	<p>weekend, birthday, holiday  calendar, date, date of birth  morning, afternoon, evening, night  am, pm, noon, midnight  today, yesterday, tomorrow  before, after, next, last  now, soon, early, late, earliest, latest  quick, quicker, quickest, quickly  fast, faster, fastest, slow, slower, slowest, slowly  old, older, oldest, new, newer, newest  takes longer, takes less time  how long ago? how long will it be to...?  how long will it take to...?  timetable, arrive, depart  hour, minute, second  o'clock, half past, quarter to, quarter past  clock, watch, hands  digital/analogue clock/watch, timer  24-hour clock, 12-hour clock  Greenwich Mean Time, British Summer Time  International Date Line  how often?  always, never, often, sometimes, usually</p> <p><b>SHAPE AND SPACE</b>  shape, pattern  flat, line  curved, straight  round  hollow, solid  corner  point, pointed  face, side, edge, end  sort  make, build, construct, draw, sketch  centre, radius, diameter  circumference, concentric, arc  net  surface  angle, right-angled  congruent  intersecting, intersection  plane  base, square-based  vertex, vertices</p>
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pentagon, pentagonal  
hexagon, hexagonal  
heptagon, octagon, octagonal  
polygon, quadrilateral  
**PATTERNS AND SYMMETRY**  
size, bigger, larger, smaller  
symmetrical, line of symmetry, line  
symmetry, fold, match  
mirror line, reflection, reflect  
pattern, repeating pattern, translation  
**POSITION, DIRECTION AND  
MOVEMENT**  
position, over, under, underneath  
above, below, top, bottom, side  
on, in, outside, inside, around  
in front, behind, front, back  
before, after, beside, next to, opposite,  
apart, between, middle, edge, centre  
corner, direction, journey, route, map,  
plan, left, right  
up, down, higher, lower  
forwards, backwards, sideways, across  
close, far, near  
along, through, to, from, towards, away  
from, ascend, descend  
grid, row, column, origin, coordinates  
clockwise, anti-clockwise  
compass point, north, south, east, west  
(N, S, E, W)  
north-east, north-west, south-east,  
south-west, (NE, NW, SE, SW)  
horizontal, vertical, diagonal  
movement, slide, roll  
whole turn, half turn, quarter turn, rotate  
angle, ...is a greater/smaller angle than  
right angle, degree, straight line  
stretch, bend, ruler, set square  
angle measurer, compasses

### Instructions

listen, join in, say, recite  
think, imagine, remember  
start from, start with, start at  
look at, point to, show me  
put, place

symmetry, line symmetry, reflective  
symmetry, fold, match  
mirror line, reflection, reflect  
pattern, repeating pattern, translation  
**POSITION, DIRECTION AND  
MOVEMENT**  
position, over, under, underneath  
above, below, top, bottom, side  
on, in, outside, inside, around  
in front, behind, front, back  
before, after, beside, next to  
opposite, apart, between, middle, edge,  
centre, corner, direction  
journey, route, map, plan  
left, right, up, down, higher, lower  
forwards, backwards, sideways, across  
close, far, near  
along, through, to, from, towards, away  
from, ascend, descend  
grid, row, column  
origin, coordinates  
clockwise, anti-clockwise  
compass point, north, south, east, west  
(N, S, E, W)  
north-east, north-west, south-east,  
south-west, (NE, NW, SE, SW)  
horizontal, vertical, diagonal  
parallel, perpendicular  
x-axis, y-axis, quadrant  
movement, slide, roll  
whole turn, half turn, quarter turn  
rotate, rotation  
angle, ...is a greater/smaller angle than  
right angle, acute, obtuse  
degree  
straight line  
stretch, bend  
ruler, set square  
angle measurer, compasses, protractor

### Instructions

listen, join in, say, recite  
think, imagine, remember  
start from, start with, start at  
look at, point to, show me, put, place

layer, diagram  
regular, irregular  
concave, convex  
open, closed  
tangram  
**3D SHAPES**  
3D, three-dimensional  
cube, cuboid  
pyramid  
sphere, hemi-sphere, spherical  
cone  
cylinder, cylindrical  
prism  
tetrahedron, polyhedron, octahedron, dodecahedron  
**2D SHAPES**  
2D, two-dimensional  
circle, circular, semi-circle  
triangle, triangular  
equilateral triangle, isosceles triangle, scalene triangle  
square, rhombus  
rectangle, rectangular, oblong  
pentagon, pentagonal  
hexagon, hexagonal  
heptagon  
octagon, octagonal  
polygon  
quadrilateral  
kite  
parallelogram, trapezium  
**PATTERNS AND SYMMETRY**  
size, bigger, larger, smaller  
symmetrical, line of symmetry, axis of symmetry  
line symmetry, reflective symmetry  
fold, match, mirror line, reflection, reflect  
pattern, repeating pattern, translation  
**POSITION, DIRECTION AND MOVEMENT**  
position  
over, under, underneath, above, below, top, bottom, side, on, in, outside, inside,  
around, in front, behind, front, back, before, after, beside, next to  
opposite, apart, between, middle, edge, centre, corner, direction  
journey, route, map, plan, left, right, up, down, higher, lower  
forwards, backwards, sideways, across, close, far, near  
along, through, to, from, towards, away from, ascend, descend  
grid, row, column, origin, coordinates

arrange, rearrange  
change, change over  
split, separate  
carry on, continue, repeat  
what comes next? predict  
describe the pattern, describe the rule  
find, find all, find different  
investigate  
choose, decide  
collect  
use, make, build, construct  
tell me, describe, name, pick out  
discuss, talk about  
explain  
explain your method  
explain how you got your answer  
give an example of...  
show how you...  
show your working  
justify  
make a statement  
read, write, record  
write in figures  
present, represent  
interpret  
trace, copy  
complete, finish, end  
fill in, shade, colour  
label, plot  
tick, cross  
draw, sketch  
draw a line between, join (up), ring,  
arrow  
cost, count, tally  
calculate, work out, solve  
investigate, question  
answer  
check

### General

same, different  
missing number/s  
number facts, number pairs, number  
bonds  
greatest value, least value

arrange, rearrange, change, change  
over, split, separate  
carry on, continue, repeat  
what comes next? predict  
describe the pattern, describe the rule  
find, find all, find different  
investigate, choose, decide  
collect, use, make, build, construct,  
bisect, tell me, describe, name, pick out,  
identify, discuss, talk about  
explain, explain your  
method/answer/reasoning  
give an example of...  
show how you...  
show your working  
justify, make a statement, read, write,  
record, write in figures, present,  
represent, interpret  
trace, copy, complete, finish, end  
fill in, shade, colour, label, plot  
tick, cross, draw, sketch  
draw a line between, join (up), ring,  
arrow, cost, count, tally  
calculate, work out, solve, convert  
investigate, question, answer  
check

### General

same, different  
missing number/s  
number facts, number pairs, number  
bonds  
greatest value, least value  
number line, number track  
number square, hundred square  
number cards, number grid  
abacus  
counters, cubes, blocks, rods  
die, dice, spinner  
dominoes  
pegs, peg board, pin board  
geo-strips  
same way, different way  
best way, another way  
in order, in a different order

clockwise, anti-clockwise, compass point, north, south, east, west (N, S, E, W)  
north-east, north-west, south-east, south-west  
(NE, NW, SE, SW)  
horizontal, vertical, diagonal, parallel, perpendicular  
x-axis, y-axis, quadrant, movement  
slide, roll, whole turn, half turn, quarter turn, rotate, rotation  
angle, ...is a greater/smaller angle than  
right angle, acute, obtuse, reflex  
degree, straight line, stretch, bend, ruler, set square  
angle measurer, compasses, protractor

### Instructions

listen, join in, say, recite, think, imagine, remember  
start from, start with, start at, look at, point to, show me  
put, place, arrange, rearrange  
change, change over, adjusting, adjust, split, separate  
carry on, continue, repeat, what comes next? predict  
describe the pattern, describe the rule, find, find all, find different  
investigate, choose, decide, collect, use, make, build, construct, bisect  
tell me, define, describe, name, pick out, identify  
discuss, talk about, explain  
explain your method/answer/reasoning  
give an example of...  
show how you...  
show your working  
justify, make a statement, read, write, record, write in figures  
present, represent, interpret, trace, copy  
complete, finish, end, fill in, shade, colour  
label, plot, tick, cross  
draw, sketch, draw a line between, join (up), ring, arrow  
cost, count, tally, calculate, work out, solve, convert  
investigate, interrogate (data), question, prove, answer, check

### General

same, identical, different  
missing number/s  
number facts, number pairs, number bonds  
greatest value, least value  
number line, number track  
number square, hundred square  
number cards, number grid  
abacus  
counters, cubes, blocks, rods  
die, dice, spinner



number line, number track number square, hundred square number cards, number grid abacus counters, cubes, blocks, rods die, dice dominoes pegs, peg board, pin board geo-strips same way, different way best way, another way in order, in a different order not all, every, each	not all, every, each	dominoes pegs, peg board, pin board geo-strips same way, different way best way, another way in order, in a different order not all, every, each
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