

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Know the number names and recite them in order, from and back to zero

Count reliably a set of objects

Describe and extend number sequences: count on or back in steps of 1, 10 or 100 from any number

As outcomes, Year 1 pupils should, for example:

Join in rhymes like: *One, two, three, four, five, Once I caught a fish alive... or: Ten green bottles...*

Say the sequence: *one, two, three...* to 20 then beyond.
Say it backwards.

Respond to questions such as:

What number comes after 6? After 17? Before 9? Before 14?

Say the sequence: *ten, twenty, thirty... one hundred.*

Recognise *zero* and *none* in stories and other contexts, including the counting sequence.

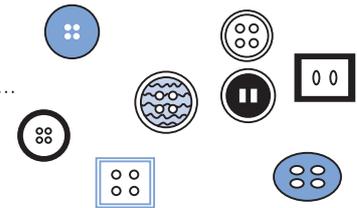
Understand and use in practical contexts: *count, how many?*

Count reliably at least 20 objects.

Recognise that the size of the set (how many) is given by the last number in the count.

Respond to questions such as:

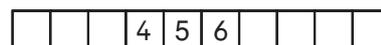
- Count 20 or more buttons, pencils, straws, bricks, children... spread out, close together, in a line, stacked up... Rearrange and count again. Is the number of buttons... still the same?
Now count them without touching them.
- Put 5 bricks in a line, 5 cubes in a cup, 5 animals on top of a box, 5 beads in a bowl... Are there the same number of each?
- Lay a table for four people with knives, forks, cups, plates...
- Show me these numbers using your fingers.
- Clap or beat the drum five times.
Count these regular claps or drum beats.
Count the steps you take across the room.



Counting in ones

Respond to questions such as:

- Start at any small number and count on in ones to 30 or more, then back in ones to zero.
- Write the next two numbers: 11, 10, 9, 8, ...
- Here is part of a number track. Where does 9 go? And 2?



- Count round the circle of children, starting at Mary with 5. Who will say 11?
- Count on four from 3... *four, five, six, seven.*
Count back four from 12... *eleven, ten, nine, eight.*
- Count on from 7 to 10... *eight, nine, ten.*
How many did you count? *I counted three.*
Count back from 10 to 6. *nine, eight, seven, six.*
How many did you count? *I counted four.*

As outcomes, Year 2 pupils should, for example:

Say forwards and backwards the sequences:
zero, ten, twenty, thirty... one hundred;
zero, one hundred, two hundred... one thousand.

Respond to questions such as:
 Which tens number comes after 60? Before 30?
 Which hundreds number comes after 400?
 Before 900?

Use zero when counting and understand the function of 0 as a place holder in two-digit numbers (see also page 9).

Understand, use and begin to read:
count, tally, how many?

Count reliably to at least 100.

Count larger collections by grouping in tens, then fives or twos.

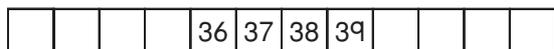
Respond to questions such as:

- Can you count these 47 things by grouping them in tens?
- If we count in ones, or count in tens, will the total number be the same?
- Keep a tally as you count: in twos, fives, tens...
 If Mary keeps a tally in twos and David keeps a tally in fives, will they finish with the same total number?
- Count these pairs of claps or drum beats.
 Make a tally while I clap.
- What would be the best way to count:
 all the children in the class, birds coming to the bird table, sugar cubes in a box...?

Counting in ones

Respond to questions such as:

- Start at any two-digit number and count on in ones to 100, or back in ones to zero.
- Here is part of a number track.
 Where would 42 be? Where would 33 be?



- Count on six from 63...
 Count back six from 78...
- Count on from 33 to 37.
 Count back from 76 to 71.
 How many did you count each time?

As outcomes, Year 3 pupils should, for example:

Use, read and begin to write:
count, tally, how many?

Count larger collections by grouping them.

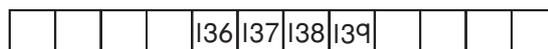
Respond to questions such as:

- Can you count 47 things by grouping them in fives?
- Count these irregular claps or drum beats.
 Make a tally while I clap.
- What would be the best way to count:
 all the children in school, all the pasta shapes in this jar...?

Counting in ones

Respond to questions such as:

- Start counting at 80, 200, 452... and count on or back in ones.
- Here is part of a number track.
 Where would 142 be? Where would 132 be?



- Count on six from 169...
 Count back six from 172...
 Count on/back 15 from 110. Where are you?
- Count on from 141 to 147.
 Count back from 176 to 171.
 How many did you count each time?

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Describe and extend number sequences: count on or back in steps of 1, 10 or 100 from any number (continued)

Describe and extend number sequences: count on or back in twos, and recognise odd and even numbers

As outcomes, Year 1 pupils should, for example:

Counting in tens

Using a 100 square, respond to questions such as:

- Count on in tens from zero... from 30... from 3...
Count back in tens from 100... from 80... from 63...
- Count in tens from zero until I say stop.
I will keep a count of the tens on my fingers.
How many tens did you count?
- Count on or back several tens, starting from a given number.
Show me the tens with your fingers as you count.
For example:
Count on three tens from 50... from 20... from 70...
Count back five tens from 80... from 50...
- Count round the circle in tens, starting at Mary with 50.
Who will say 90?
- Describe this pattern:
80, 70, 60, 50...
Say the next three numbers.

Understand and use in practical contexts: *odd, even, every other...*

Count rhythmically in twos to 20 or more.
Count back again.
Now start at 1. Count in steps of two to 20 or more.
Count back again.

Join in rhymes like:
Two, four, six, eight, Mary at the cottage gate...
One, two, buckle my shoe...

Colour every other number on a number track to 20.
Say every other number, first starting with 0, then with 1.

Respond to questions such as:

- What numbers come next?
2, 4, 6, 8... 15, 13, 11, 9...
Describe the pattern.

As outcomes, Year 2 pupils should, for example:

Counting in tens

First with and then without a 100 square, respond to questions such as:

- Count on in tens from 30... from 26...
Count back in tens from 80... from 72...
- Count on 40 in tens:
from 30... from 27...
Count back 40 in tens:
from 80... from 72...
- Count on in tens from 30 to 70. How many tens did you count?
Count back in tens from 90 to 40. How many tens did you count?
- Count round the circle in tens, starting at Ram with 52. Who will say 92?
- Describe this sequence:
43, 53, 63, 73...
Write the next three numbers.

Understand, use and begin to read:
odd, even, sequence, predict, continue, rule...

Count from 0 or 1 in steps of two to 40 or more.
Count back again.

Respond to questions such as:

- Ring every other number on a number line.
What do you notice about the ringed numbers?
Is 18 odd or even? How do you know?
- Take a handful of (interlocking) cubes.
Which numbers will make two equal sticks?
- Ring the even numbers:
5 8 18 21 29 34
- Continue these sequences:
13, 15, 17, 19... 26, 24, 22, 20...
Describe each pattern.
- What odd number comes after 13? After 7?

Make general statements about odd or even numbers such as:

- an even number divides exactly by 2;
- there is 1 left over when an odd number is divided by 2.

As outcomes, Year 3 pupils should, for example:

Counting in tens

Respond to questions such as:

- Count on and back in tens, crossing 100.
- Count on 40 in tens:
from 30, from 27, from 480, from 652...
Count back 40 in tens:
from 80, from 72, from 590, from 724...
- Count on in tens from 36 to 76. How many tens did you count?
Count back in tens from 84 to 34. How many tens did you count?

Counting in hundreds

Respond to questions such as:

- Count on or back 400 in hundreds:
from 500, from 520, from 570...
- Count on in hundreds from 460 to 960.
How many hundreds did you count?
- Count back in hundreds round the circle of children, starting at Jo with 970. Who will say 370?
- Describe these sequences:
256, 356, 456, 556... 421, 431, 441, 451...
Write the next three numbers in each sequence.

Use, read and begin to write:
odd, even, sequence, predict, continue, rule, relationship...

Count from 0 or 1 in steps of two to about 50.
Count back again.

Respond to questions such as:

- Is 74 odd or even? How do you know?
- Test whether 75 is odd or even.
Now try all the numbers from 75 to 95. What do you notice?
- Ring the odd numbers:
65 70 77 88 91 94
- Continue these sequences:
35, 37, 39, 41... 68, 66, 64...
Describe each pattern.
- What odd number comes before 91? After 69?

Make general statements about odd or even numbers such as:

- an even number ends in 0, 2, 4, 6 or 8;
- an odd number ends in 1, 3, 5, 7 or 9;
- if you add two even numbers the answer is even;
- if you add two odd numbers the answer is even.

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Describe and extend number sequences:
count on or back in steps of any size

As outcomes, Year 1 pupils should, for example:

Respond to questions such as:

- Mark hops of 2 or 3 or 5... on a number track to at least 20. Say the numbers you land on.

- What number comes next?
16, 14, 12... 5, 10, 15... 3, 6, 9...
Describe each pattern.

- Fill in the missing numbers:
2, 4, □, 8, 10, □ 25, 20, 15, □, □

Create number patterns with a given constraint: for example, make a number pattern which has the number 6 in it.

Recognise familiar multiples

As outcomes, Year 2 pupils should, for example:

Respond to questions such as:

- From zero and then from any small number, count on in 2s, 3s, 4s or 5s to 30 or more.
Can you go past 100?
Now count back.
- Take a 4×4 number grid.
Count on in twos from 1.
Colour numbers you land on.
Describe the pattern you get.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

Try a 5×5 number grid.

Predict what would happen with a 6×6 number grid.

- 3, 6, 9, 12... 16, 14, 12, 10...
Describe each pattern. What is the rule?
What are the next three numbers in each sequence?
- Fill in the missing number in this sequence:
3, 6, □, 12, 15

Create sequences with a given constraint:
for example, make a sequence which has the numbers 6 and 12 in it.

Understand, use and begin to read: *multiple*.

Recognise that multiples of:

- 10 end in 0;
- 5 end in 0 or 5.

Begin to recognise that multiples of:

- 2 end in 0, 2, 4, 6, 8.

Begin to recognise two-digit multiples of 10, 5 or 2:
for example, that 65 is a multiple of 5, or that 32 is a multiple of 2.

Respond to questions such as:

- Ring the numbers which are multiples of 10:
70 45 12 80 10 27

As outcomes, Year 3 pupils should, for example:

Respond to questions such as:

- Count on from any small number in steps of 2, 3, 4, 5, 10 or 100, and then back.
- Use a number grid computer program to display multiples of 2, 5, 10... on a 10×10 grid, and describe the patterns made.
- Take a 5×5 number grid.
Count on in threes from 1.
Colour numbers you land on.
What do you notice?

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

If you went on, would 28 be in your sequence? Or 40?
How do you know?

What would happen if you started at 2?
Would the pattern be the same?
Now try a 6×6 number grid. Try steps of 4 and 5.

- 2, 7, 12, 17... 78, 76, 74, 72...
Describe each pattern. What is the rule?
What are the next three numbers in each sequence?
- Fill in the missing numbers in this sequence:
5, 9, □, 17, 21, □, □

Create sequences with a given constraint:
for example, make a sequence which has the numbers 7 and 16 in it.

Use, read and begin to write: *multiple*.

Recognise that multiples of:

- 100 end in 00;
- 50 end in 00 or 50;
- 10 end in 0;
- 5 end in 0 or 5;
- 2 end in 0, 2, 4, 6, 8.

Respond to questions such as:

- Ring the numbers which are multiples of 5:
15 35 52 55 59 95
- Count in 50s to 1000, then back to zero.
Write three different multiples of 50.
- What is the multiple of 10 before 140?
What is the multiple of 100 after 500?
What is the next multiple of 5 after 195?

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Read and write numbers in figures and words

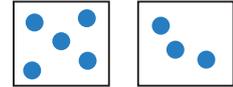
Know what each digit in a number represents, and partition a number into a multiple of 10 and ones (TU), or a multiple of 100, a multiple of 10 and ones (HTU)

As outcomes, Year 1 pupils should, for example:

Read and write numbers to at least 20.
Respond to questions such as:

- This card says 'fifteen'.  What does this one say? 
- Find the card with '12' or 'twelve', with '0' or 'zero' on it...
- Point to 9 on the number line, on the clock face, in this pack of shuffled cards... on a telephone, computer keyboard...
- Read numbers such as: 3, 5, 9... 14, 20, 26...
- Write numerals from 0 to 9 correctly, tracing from top to bottom.

For example, write a numeral to go with each of these dot patterns.

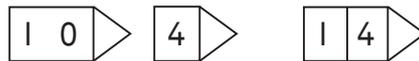


- Write numerals on a blank number line, clock face...
- Write in figures, then words:
eight... seventeen... zero...

Understand and use in practical contexts:
units or ones, tens, digit...

Know what each digit represents in numbers from 10 to 20.

Know, for example, that 14 is 10 and 4, and $14 - 4 = 10$,



and represent 14 on an abacus.

Exchange up to 20 pennies for 10p and 1p coins:
for example, give 14p in 10p and 1p coins.

Respond to questions such as:

- Say what the digit 1 in 14 stands for. And the 4?
(They represent 10 and 4.)
- Say which number is the same as:
one ten and seven ones (units);
two tens (and no ones or units).
- In one step:
make 6 into 16;
make 14 into 4.
- What number needs to go in each box?
 $14 = \square + 4$
 $12 = 10 + \square$

Begin to partition larger numbers. For example:

$$34 = \square + 4$$
$$42 = 40 + \square$$

As outcomes, Year 2 pupils should, for example:

Read and write numbers to at least 100.
Respond to questions such as:

- What number is on this card? 
- Find the card with '70' or 'seventy' on it...
- Point to 63 on the number line, on the 100 square, in this pack of shuffled cards...
- Read these numbers:
3, 5, 11, 19, 32, 50, 94, 700...
- Read these words:
*one, two, three... nineteen, twenty...
thirty, forty...
hundred, thousand...*
- Write in figures, then words:
*seventy...
forty-nine...*

Understand, use and begin to read:
*units or ones, tens, hundreds, digit, one-digit number,
two-digit number, three-digit number... place value...*

Know what each digit in a two-digit number represents.

Recognise 0 as a place holder in two-digit multiples of 10 such as 50, 90, 10...

Know, for example, that 68 is $60 + 8$,



and represent 68 on an abacus.

Exchange up to 100 pennies for 10p and 1p coins:
for example, give 68p in 10p and 1p coins.

Respond to questions such as:

- Say what the digit 6 in 64 represents.
And the 4? (*They represent 60 and 4.*)
- Say which number is equivalent to:
six tens and four ones (units);
nine tens and no ones (units).
- In one step (operation):
make 5 into 75;
change 49 to 9.
- Explain what number needs to go in each box.
 $64 = \square + 4$
 $53 = 50 + \square$

As outcomes, Year 3 pupils should, for example:

Read and write numbers to at least 1000.
Respond to questions such as:

- What number is on this card? 
- Find the card with '260' or 'two hundred and sixty' on it, with '206' or 'two hundred and six' on it...
- Read these numbers:
14, 32, 50, 117, 461, 302, 875...
- Read these words:
*forty-two...
one hundred and two...
three hundred and sixty-four*
- Write in figures, then words:
*one hundred and sixty-seven...
four hundred and nine...
three hundred and fifty...*

Use, read and begin to write:
*units or ones, tens, hundreds, digit, one-digit number,
two-digit number, three-digit number... place value...*

Know what each digit in a three-digit number represents.

Recognise 0 as a place holder in three-digit numbers such as 430, 506...

Know, for example, that 537 is $500 + 30 + 7$,



and represent 537 on an abacus.

Exchange pennies for £1, 10p and 1p coins:
for example, give 364p in £1, 10p and 1p coins.

Respond to questions such as:

- Say what the digit 3 in 364 represents. And the 6?
And the 4? (*They represent 300 and 60 and 4.*)
- Say which number is equivalent to:
four hundreds, five tens and six ones (units);
nine hundreds and two ones (units).
- In one step (operation):
make 478 into 978; make 326 into 396;
change 707 to 507; change 263 to 203.
- Explain what number needs to go in each box.
 $364 = \square + 60 + 4$ $472 = 400 + \square + 2$
- Make the biggest/smallest number you can with these digits: 2, 5, 3. Now read the numbers.

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Understand and use the vocabulary of comparing and ordering numbers, including ordinal numbers; use the = sign to represent equality; compare two given numbers, say which is more or less, and give a number lying between them

As outcomes, Year 1 pupils should, for example:

Understand and use in practical contexts:
ordinal numbers: *first, second, third, fourth...*
how many...
as many as, the same number as...
equal to, more than, less than, fewer than, greater than, smaller than, larger than...
most, least, smallest, largest...
order, first, last, before, after, next, between, half way between...
Use the = sign to represent equality.

Respond to questions such as:

- Who is the first, last, third... in this queue?
- What is on the fifth page of this book?
- Point to the seventh bead in this line.
- What is the twelfth letter of the alphabet?

Respond to questions such as:

- Which is less: 15 or 19?
- Which is more: 12p or 21p?
- Are there enough cups for these saucers?

- Pat has 6 pens. Alice has 8 pens.
Who has fewer pens?
How many more pens has Alice than Pat?

- Find page 16 in this book of 24 pages.

- Tell me a number between 14 and 19.

- Write the numbers between 3 and 9 on the number track.

1	2	3					9	10
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- Write a number in the box so the three numbers are in order.
$$2 \quad \square \quad 7$$

- The time is between 3 o'clock and 8 o'clock.
What time could it be?

- The classroom is between 10 and 15 strides wide.
How many strides across could it be?

As outcomes, Year 2 pupils should, for example:

Understand, use and begin to read:
 ordinal numbers: *first, second, third, fourth...*
how many...
as many as, the same number as...
equal to, more than, less than, fewer than,
greater than, smaller than, larger than...
most, least, smallest, largest...
order, first, last, before, after, next, between,
half way between...
 Use the = sign to represent equality.

Respond to questions such as:

- Write today's date.
- What date is your birthday?
- What is the third month of the year?
- What position is the fourth black bead?



Respond to questions such as:

- Which is less: 36 or 63?
- Which is shorter: 18 metres or 15 metres?
- Which is more: 31 kg or 37 kg?
- Which is less: 67p or 76p?
- Ali has 16 pens. Ben has 28 pens.
Who has fewer pens?
How many more pens has Ben than Ali?
- Find page 67 in this book of 112 pages.
- What even numbers lie between 15 and 20?
- Write a number in the box so the three numbers are in order.

25 31

- What number is half way between 10 and 20?



- What number is half way between 9 and 13?
- A number lies between 38 and 42.
What could it be?
- This ribbon is between 30 cm and 40 cm long.
How long could it be?
- My cake cost between 90p and £1.
What could it have cost?

As outcomes, Year 3 pupils should, for example:

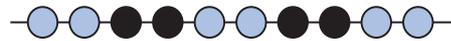
Use, read and begin to write:
 ordinal numbers: *first, second, third, fourth...*
 and abbreviations: *1st, 2nd, 3rd, 4th...*
how many... as many as, the same number as...
equal to, more than, less than, fewer than,
greater than, smaller than, larger than...
most, least, smallest, largest...
order, first, last, before, after, next, between,
half way between...
 Use the = sign to represent equality.

Respond to questions such as:

- What position is the sixth black bead?



- What colour would the 19th bead be in this pattern of beads?



Respond to questions such as:

- Which is more: 216 or 261?
- Which is longer: 157 cm or 517 cm?
- Which is lighter: 3.5 kg or 5.5 kg?
- Which is less: £4.63 or £3.46?
- Jo has 47 stamps. Ny has 92 stamps.
Who has fewer stamps?
How many more stamps has Ny than Jo?
- Find page 167 in this book of 320 pages.
- What even numbers lie between 415 and 420?

- What number is half way between 40 and 60?



- What number is half way between 40 and 50?
Between 300 and 400? Between 7 and 8?
- This string is between 90 cm and 140 cm long.
How long could it be?
- This watch cost between £6 and £7.
What could it have cost?

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Say the number that is 1, 10 or 100 more or less than any given number

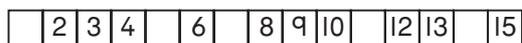
As outcomes, Year 1 pupils should, for example:

Use and apply knowledge of adding and subtracting 1 or 10 in a variety of contexts.

Respond to questions such as:

- What is 1 more than 6? Than 9? Than 19? Than 24?
What is 1 less than 8? Than 20? Than 25?
- What number is one before 7? After 6?
- What number is 10 more than 6? 10 less than 17?
What is 10 more than 17? 10 less than 30?
- An apple costs 7p.
An orange costs 10p more.
What does the orange cost?

- Fill in the missing numbers on this number track.



- Write the correct numbers in the boxes.

$$\begin{aligned} 7 &= \square + 7 \\ &= \square + 6 \\ &= \square + 5 \\ &= \square + 4 \\ &= \square + 3 \\ &= \square + 2 \\ &= \square + 1 \\ &= \square + 0 \end{aligned}$$

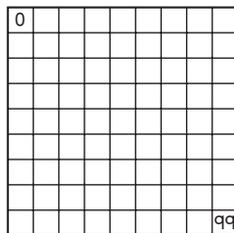
As outcomes, Year 2 pupils should, for example:

Use and apply knowledge of adding and subtracting 1 or 10 in a variety of contexts.

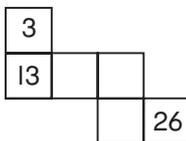
Respond to questions such as:

- What is 1 more than 53? Than 89? Than 112?
What is 1 less than 82? Than 60? Than 120?
- What number is 10 after 43? 10 before 78?
What is 10 more than 96? 10 less than 102?
- Aziz has saved 10p more than me.
I have saved 65p.
How much has Aziz saved?

- Pick up a card from a pack of two-digit numbers. Write the number in the correct place on this 0 to 99 square.



- This is part of a 100 square. Fill in the missing numbers.



- Write the correct numbers in the boxes.

$$\begin{aligned}
 64 &= \square + 4 \\
 &= \square + 14 \\
 &= \square + 24 \\
 &= \square + 34 \\
 &= \square + 44 \\
 &= \square + 54
 \end{aligned}$$

- Write the correct number in each box.

$$70 \xrightarrow{10 \text{ more is}} \square \qquad \square \xrightarrow{10 \text{ more is}} 50$$

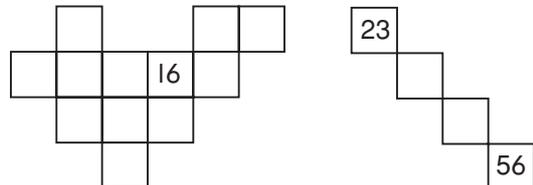
As outcomes, Year 3 pupils should, for example:

Use and apply knowledge of adding and subtracting 1 or 10 or 100 in a variety of contexts.

Respond to questions such as:

- What is 1 more than 485? Than 569? Than 299?
What is 1 less than 756? Than 340? Than 500?
- What number is 10 after 437? 10 less?
100 more? 100 less? 1 more? 1 less?
- Jack walks 645 metres to school.
Suzy walks 100 metres less.
How far does Suzy walk?

- These are parts of a 100 square. Fill in the missing numbers.



- Write the correct number in each box.

$$500 \xrightarrow{100 \text{ more is}} \square \qquad \square \xrightarrow{100 \text{ less is}} 7$$

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Order a set of familiar numbers and position them on a number line and, where appropriate, a 100 square

As outcomes, Year 1 pupils should, for example:

Order numbers in real contexts in science, design and technology, geography, history, physical education...

Put in order sets of walnuts in jars, sticks of cubes, pens in pots...

Respond to questions such as:

- Put these shuffled cards in order:
from 1 to about 12;
from 1 to 30.
- Write a number on each blank card so that the numbers are in order.

7		9	10		12
---	--	---	----	--	----

15		19		22
----	--	----	--	----

- Which two numbers have been changed over?

3	4	8	6	7	5
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- Put these in order, largest/smallest first:

7, 2, 9, 4;

17, 6, 15, 7, 12, 22;

12p, 9p, 2p, 15p.

- I have ten cards. I want them to be in order.
Write where these numbers go:
7, 5, 9, 3...

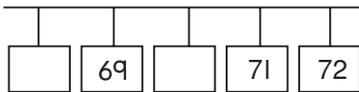
1									10
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As outcomes, Year 2 pupils should, for example:

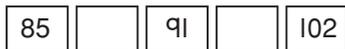
Order numbers in real contexts in science, design and technology, geography, history, physical education...

Respond to questions such as:

- Put these shuffled cards in order:
from 35 to about 45;
from 0 to 100.
- Fill in the missing numbers on this number line.



- Write a number on each blank card so that the five numbers are in order.



- My cards from 10 to 30 were in order. Two have been changed over. Which two are they?
- Put these in order, largest/smallest first:
27, 16, 85, 72, 52;
50p, 45p, 54p, 40p, 55p.
- This is a 0 to 100 line marked in tens. Write where these numbers go on the line: 20, 60, 90...



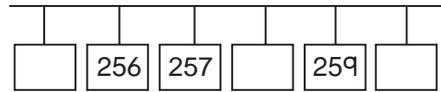
Position one- and two-digit numbers on a 100 square (see page 13).

As outcomes, Year 3 pupils should, for example:

Order numbers in real contexts in science, design and technology, geography, history, physical education...

Respond to questions such as:

- Put these shuffled cards in order:
from 95 to about 105;
from -10 to 10.
- Fill in the missing numbers on this number line.



- Write a number on each blank card so that the five numbers are in order.



- My cards from 90 to 120 were in order. Two have been changed over. Which two are they?
- Put these in order, largest/smallest first:
136, 258, 285, 163, 208;
£1.50, £5.50, £2.30, £3.20, £5.30;
67 cm, 121 cm, 107 cm, 70 cm, 160 cm.
- This is a 0 to 100 line marked in tens. Mark where these numbers go on the line: 28, 65, 92... Label each number.



Position one- and two-digit numbers on a 100 square (see page 13).

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Understand and use the vocabulary of estimation and approximation, and give a sensible estimate for a number of objects

As outcomes, Year 1 pupils should, for example:

Understand and use in practical contexts:
guess how many, estimate...
roughly, nearly, close to, about the same as...
too many, too few, enough, not enough...

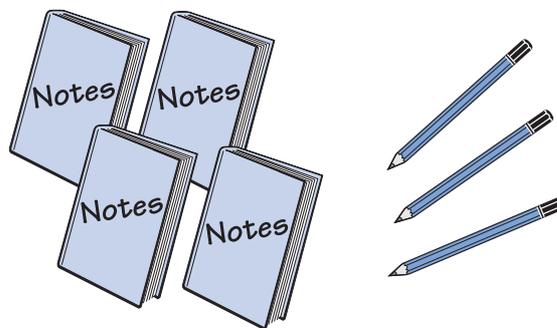
Make estimates of numbers and measurements in a range of practical contexts, including those arising in other subjects.
For example:

- Estimate a number of objects up to about 30.
Guess, for example, the number of:
counters in a pile, penny coins in a purse,
small toys in a jar, shells in a collection...



- Estimate whether there are enough:
pegs for these coats, cups for these saucers,
knives for these forks, chairs for these children,
pencils for these notebooks...

Now check. Are there too many or too few?



See also estimating measurements (page 74).

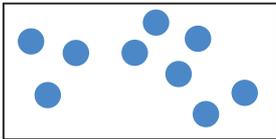
As outcomes, Year 2 pupils should, for example:

Understand, use and begin to read:
guess how many, estimate...
round, nearest...
roughly, nearly, close to, about the same as...
too many, too few, enough, not enough...

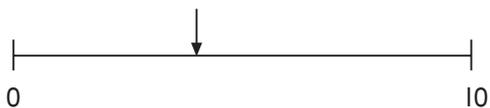
Make estimates of numbers and measurements in a range of practical contexts, including those arising in other subjects. For example:

- Estimate a number up to about 50, then more. Estimate, for example, the number of: potatoes in a bag, buttons in a box, mixed coins in a purse, spots on a card...

Explain how the estimate was made.
 For example: *I can see two groups of about five.*



- Record estimates on a number line and find the difference between the estimate and the actual number.
- Estimate the position of a point on a line. For example, estimate the whole number marked by the arrow. How did you decide?



See also estimating measurements (page 75).

As outcomes, Year 3 pupils should, for example:

Use, read and begin to write:
guess how many, estimate...
round, nearest...
roughly, nearly, close to, approximately...
too many, too few, enough, not enough...

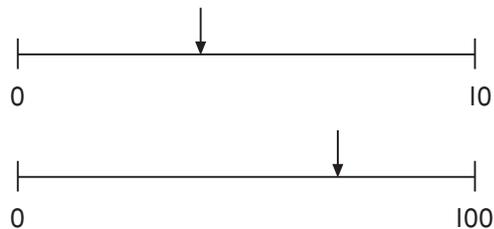
Make estimates of numbers and measurements in a range of practical contexts, including those arising in other subjects. For example:

- Estimate a number up to about 100. Estimate, for example, the number of: red sweets and green sweets in a jar, lines on the left page and the right page of a book, leaves on a twig...

Explain how the estimate was made and justify why it is reasonable.

Talk about different strategies for getting estimates.

- Record estimates on a number line and find the difference between the estimate and the actual number.
- Estimate the position of a point on a line. For example, estimate the whole numbers marked by the arrows. How did you decide?



See also estimating a simple fraction (page 23) and estimating measurements (page 75).

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Round a number to the nearest 10 or 100

As outcomes, Year 1 pupils should, for example:

As outcomes, Year 2 pupils should, for example:

Begin to round numbers less than 100 to the nearest ten. For example:

- 33 is closer to 30 than 40.
The nearest ten to 33 is 30.
- 37 is closer to 40 than to 30.
The nearest ten to 37 is 40.
- 35 is half way between 30 and 40.
We say that the nearest ten to 35 is 40, because we round up when the number is half way between two tens.

When finding information in a book, say, for example, whether page 34 in a book is closer to page 30 or closer to page 40, and why.

As outcomes, Year 3 pupils should, for example:

Round numbers less than 100 to the nearest ten. For example:

- 33 is 30 rounded to the nearest ten.
- 37 is 40 rounded to the nearest ten.
- 35 is 40 rounded to the nearest ten.

Begin to approximate by rounding any three-digit number to the nearest hundred. For example:

- 433 is closer to 400 than to 500.
433 is 400 rounded to the nearest hundred.
- 856 is closer to 900 than to 800.
856 is 900 rounded to the nearest hundred.
- 650 is half way between 600 and 700.
We say that the nearest hundred to 650 is 700, because we round up when the number is half way between two hundreds.

Round measurements made in other subjects, or found in information books, to the nearest 10 units, and begin to round them to the nearest 100 units. For example:

- Peter's ice melted in 28 minutes, which is 30 minutes to the nearest 10 minutes.
- London to Glasgow is 418 miles, or 400 miles to the nearest hundred miles.

See also rounding up or down after division (page 51).

NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Recognise and find simple fractions;
recognise the equivalence between them;
compare two simple fractions in practical
contexts

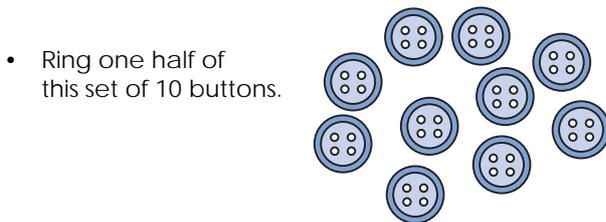
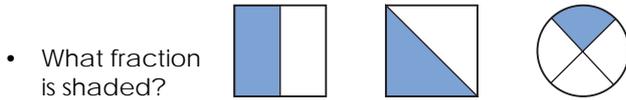
As outcomes, Year 1 pupils should, for example:

As outcomes, Year 2 pupils should, for example:

Understand, use and begin to read:
part, fraction...
one whole, one half, one quarter...

Recognise and write $\frac{1}{2}$, $\frac{1}{4}$, as one half, one quarter.

Respond to questions such as:



- Say half of any even whole number to 20.
- Find one quarter of 12 biscuits, of 8 pencils...
- Find half of: this bar of chocolate squares, these 14 pennies, these nine biscuits... half of the 30 children in the class...

- Say what fraction of a cake each person will get when it is divided equally between two or four people.

See also making whole, half and quarter turns (page 89), and telling the time (page 79).

Recognise what is not one half or one quarter. For example, explain why:

- these shapes are not divided into halves;



- this jar is not half full.

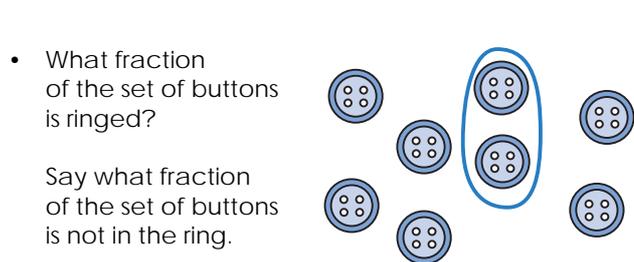


As outcomes, Year 3 pupils should, for example:

Use, read and begin to write:
part, fraction, one whole, one half, one quarter, three quarters, one third, two thirds, one tenth...

Recognise $\frac{1}{10}$ as one tenth, and know that it means one whole divided into 10 equal parts.

Respond to questions such as:



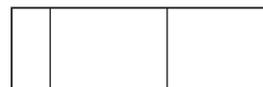
- Find half of each of the numbers to 30. What is $\frac{1}{10}$ of 20? What is three quarters of 20?

- Complete the shading on this diagram so that one half of it is shaded.



- Write a fraction to show how much each person gets when:
 1 cake is divided equally among 10 people;
 5 cakes are divided equally between 2 people.
- Take 20 cubes. Make a shape which is $\frac{1}{2}$ red and $\frac{1}{10}$ blue.

Recognise what is not $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{10}$. For example, explain why this shape is not divided into thirds.



NUMBERS AND THE NUMBER SYSTEM

Pupils should be taught to:

Recognise and find simple fractions; recognise the equivalence between them; compare two simple fractions in practical contexts (continued)

As outcomes, Year 1 pupils should, for example:

As outcomes, Year 2 pupils should, for example:

Recognise that one whole can be broken into two identical halves or four identical quarters, and that two halves or four quarters will make one whole.

For example:

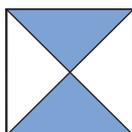
- Fold this piece of paper in half. Now unfold it. How many parts are there?
Now fold the same piece of paper into quarters. How many parts are there?

Recognise that:

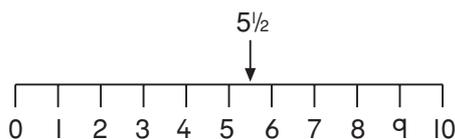
- two quarters are the same as one half;
- three quarters and one quarter make one whole.

For example, recognise that:

- this whole shape consists of four equal quarters;
- two quarters or one half of the shape is shaded.



Begin to position halves on a number line. For example, place $5\frac{1}{2}$ on a number line, and recognise that it lies mid-way between 5 and 6.



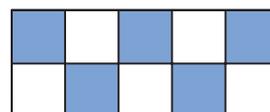
As outcomes, Year 3 pupils should, for example:

Know that:

- two quarters are the same as one half;
- one half is equivalent to five tenths;
- ten tenths make one whole;
- one whole is three quarters plus one quarter, three tenths plus seven tenths...;
- one quarter is half of one half.

For example, recognise that:

- this whole shape consists of ten tenths;
- five tenths or one half is shaded.



Position simple fractions on a number line.

For example, make a line to 10 showing whole, half and quarter numbers. Count on or back along sections of the line in steps of one half, one quarter.

Answer questions such as:

- What number is half way between 3 and 4?
Between $2\frac{1}{2}$ and 3?
- Tell me any number between 6 and 7.

Recognise that on a number line:

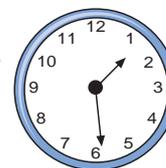
- one half is greater than one quarter;
- one half is less than three quarters;
- three quarters lies between one half and one whole.

Estimate a fraction. Respond to questions such as:

- Roughly how much of this cake has been eaten?



- About what time is it?



- This jar holds 100 sweets when it is full. Some have been eaten. About how many are left?



- Choose any number on a number line to 100. Estimate where half that number is.