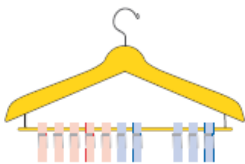
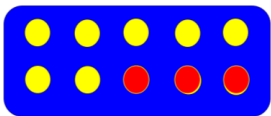


Year 1

Addition

Mental Strategies (addition and subtraction)

Children should experience [regular counting](#) on and back from different numbers in 1s and in multiples of 2, 5 and 10. Children should memorise and reason with number bonds for numbers to 20, experiencing the = sign in different positions. They should see addition and subtraction as related operations. E.g. $7 + 3 = 10$ is related to $10 - 3 = 7$, understanding of which could be supported by an image like this.



$10 = 7 + 3$

Use bundles of straws and Dienes to model partitioning teen numbers into tens and ones and develop understanding of place value.

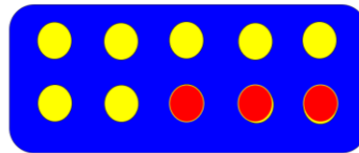
Children have opportunities to explore partitioning numbers in different ways. e.g. $7 = 6 + 1$, $7 = 5 + 2$, $7 = 4 + 3 =$

Children should begin to understand addition as combining groups and counting on.

Subtraction

Mental Strategies

Children should experience [regular counting](#) on and back from different numbers in 1s and in multiples of 2, 5 and 10. Children should memorise and reason with number bonds for numbers to 20, experiencing the = sign in different positions. They should see addition and subtraction as related operations. E.g. $7 + 3 = 10$ is related to $10 - 3 = 7$, understanding of which could be supported by an image like this.

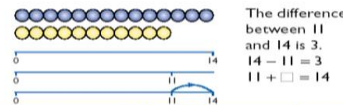


Use bundles of straws and Dienes to model partitioning teen numbers into tens and ones.

Children should begin to understand subtraction as both taking away and finding the difference between, and should find small differences by counting on.



Subtraction as "taking away"



Subtraction as "the difference between"

Vocabulary

Multiplication

Mental Strategies

Children should experience [regular counting](#) on and back from different numbers in 1s and in multiples of 2, 5 and 10. Children should memorise and reason with numbers in 2, 5 and 10 times tables. They should see ways to represent odd and even numbers. This will help them to understand the pattern in numbers.



Children should begin to understand multiplication as scaling in terms of double and half. (e.g. that tower of cubes is double the height of the other tower)

Vocabulary

Ones, groups, lots of, doubling repeated addition groups of, lots of, times, columns, rows longer, bigger, higher etc times as (big, long, wide ...etc)

Generalisations

Understand 6 counters can be arranged as $3+3$ or $2+2+2$

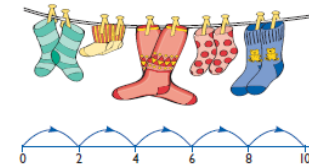
Understand that when counting in twos, the numbers are always even.

Some Key Questions

Division

Mental Strategies

Children should experience [regular counting](#) on and back from different numbers in 1s and in multiples of 2, 5 and 10. They should begin to recognise the number of groups counted to support understanding of relationship between multiplication and division.



$2 + 2 + 2 + 2 + 2 = 10$
 $2 \times 5 = 10$
 2 multiplied by 5
 5 pairs
 5 hops of 2

Children should begin to understand division as both sharing and grouping.

Sharing – 6 sweets are shared between 2 people. How many do they have each?

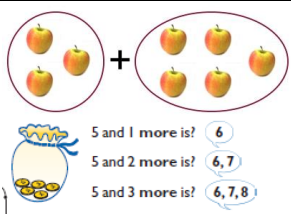


Grouping-
 How many 2's are in 6?



They should use objects to group and share amounts to develop understanding of division in a practical sense.

E.g. using Numicon to find out how many 5's are in 30? How many pairs of gloves if you have 12 gloves?



Vocabulary

Addition, add, forwards, put together, more than, total, altogether, distance between, difference between, equals = same as, most, pattern, odd, even, digit, counting on.

Generalisations

- True or false? Addition makes numbers bigger.
- True or false? You can add numbers in any order and still get the same answer.

(Links between addition and subtraction)
When introduced to the equals sign, children should see it as signifying equality. They should become used to seeing it in different positions.

Another example here...

Some Key Questions

How many altogether? How many more to make...? I add ...more. What is the total? How many more is... than...? How much more is...? One more, two more, ten more...
What can you see here?
Is this true or false?
What is the same? What is different?

Subtraction, subtract, take away, distance between, difference between, more than, minus, less than, equals = same as, most, least, pattern, odd, even, digit,

Generalisations

- True or false? Subtraction makes numbers smaller
- When introduced to the equals sign, children should see it as signifying equality. They should become used to seeing it in different positions.

Children could see the image below and consider, "What can you see here?" e.g.

3 yellow, 1 red, 1 blue. $3 + 1 + 1 = 5$

2 circles, 2

triangles, 1

square. $2 + 2 + 1 =$

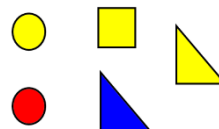
5

I see 2 shapes

with curved lines

and 3 with straight lines. $5 = 2 + 3$

$5 = 3 + 1 + 1 = 2 + 2 + 1 = 2 + 3$



Some Key Questions

How many more to make...? How many more is... than...? How much more is...? How many are left/left over? How many have gone? One less, two less, ten less... How many fewer is... than...? How much less is...?
What can you see here?
Is this true or false?

Why is an even number an even number?
What do you notice?
What's the same? What's different?
Can you convince me?
How do you know?

Children should begin to explore finding simple fractions of objects, numbers and quantities.

E.g. 16 children went to the park at the weekend. Half that number went swimming. How many children went swimming?

Vocabulary

share, share equally, one each, two each..., group, groups of, lots of, array

Generalisations

- True or false? I can only halve even numbers.
- Grouping and sharing are different types of problems. Some problems need solving by grouping and some by sharing. Encourage children to practically work out which they are doing.

Some Key Questions

How many groups of...?
How many in each group?
Share... equally into...
What can do you notice?

Mental Maths expectations

Using the Bead lines – understand number bonds to 10 – addition and subtraction.

Recognise where numbers are on a number line – start with 0 – 10, progress to 20, then 100.

Count 10 more and ten less.