Year 1			
	Concrete	Pictorial	Abstract
Year 1 addition			
Given a number, identify one more and one less.

Identify and represent numbers using objects and pictorial representations including the number line. | Children add one more person or object to a group to find one more.
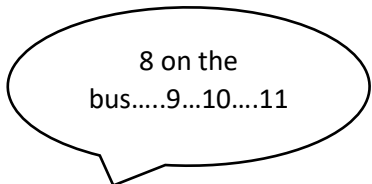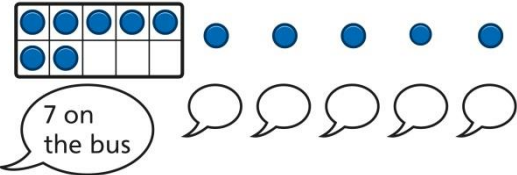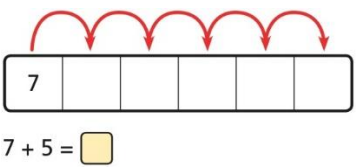
Understanding part-part-whole relationship
Sort people and objects into parts and understand the relationship with the whole.

Equal to, more than, less than, fewer, most, least | Children add one more cube or counter to a group to represent one more.

Children draw to represent the parts and understand the relationship with the whole.

The parts are 1 and 5. The whole is 6. | Use a number line to understand how to link counting on with finding one more.

one more

One more than 6 is 7.
7 is one more than 6.

Learn to link counting on with adding more than one. |
| Read, write and interpret mathematical statements involving addition (+) and equals (=) signs | Children use knowledge of counting to 20 to find a total by counting on using people or objects.

8 on the bus…..9…10….11 | Children use counters to support and represent their counting on strategy.

7 on the bus | Children use number lines or number tracks to support their counting on strategy.

7

$7 + 5 =$ |

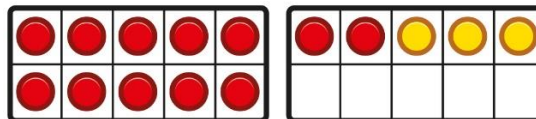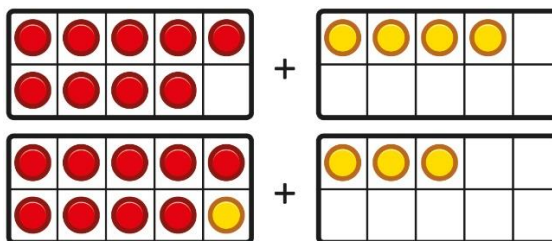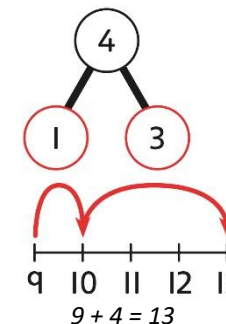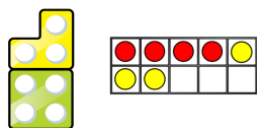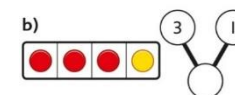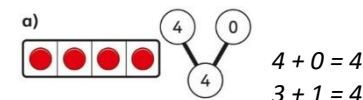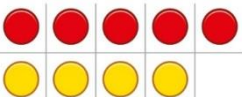| Add one digit and two-digit numbers to 20, including zero	Children use bead strings to recognise how to add the 1s to find the total efficiently. *2 + 3 = 5* *12 + 3 = 15* Children use a bead string to complete a 10 and understand how this relates to the addition. *7 add 3 makes 10.* *So, 7 add 5 is 10 and 2 more.*	Children represent calculations using ten frames to add a teen and 1s. *2 + 3 = 5* *12 + 3 = 15* Children use counters to complete a ten frame and understand how they can add using knowledge of number bonds to 10. .	Children recognise that a teen is made from a 10 and some 1s and use their knowledge of addition within 10 to work efficiently. *3 + 5 = 8* *So, 13 + 5 = 18* Use a part-whole model and a number line to support the calculation. *9 + 4 = 13*
Represent and use number bonds and related subtraction facts within 20	Break apart a group and put back together to find and form number bonds.	Double-sided counters: Red-Yellow counters can be used to help children find out about different ways of making the same number. They may also start to spot patterns. 6 + 0 = 6 5 + 1 = 6 4 + 2 = 6 3 + 3 = 6 2 + 4 = 6 1 + 5 = 6 0 + 6 = 6 The concrete or pictorial representations of number facts should always be linked to the abstract (i.e. the number sentence it relates to).	Use a part-whole model alongside other representations to find number bonds. Make sure to include examples where one of the parts is zero. a) 4 + 0 = 4 3 + 1 = 4 b)
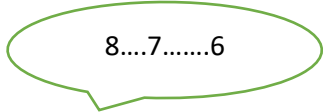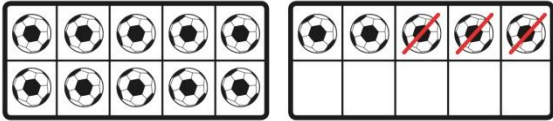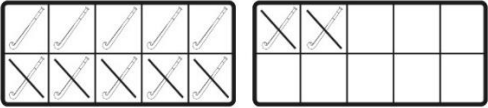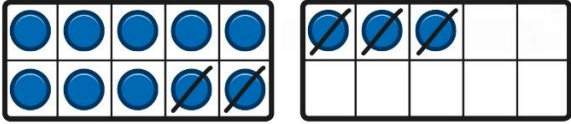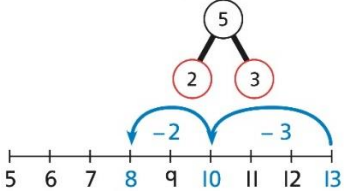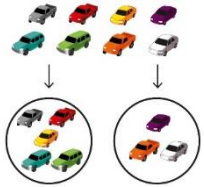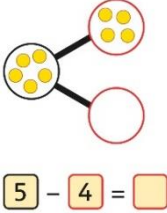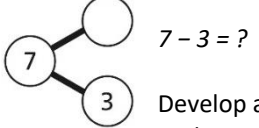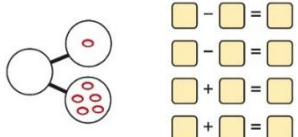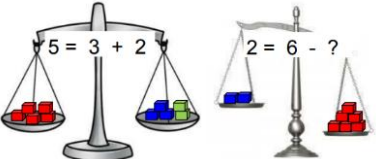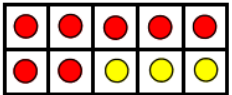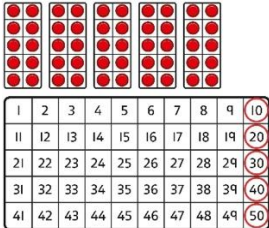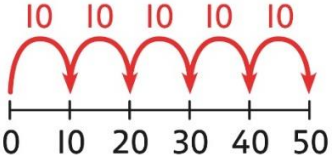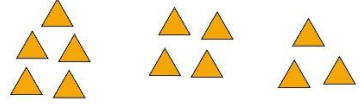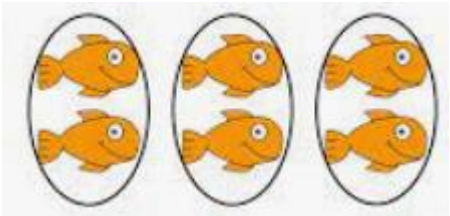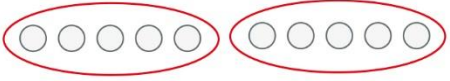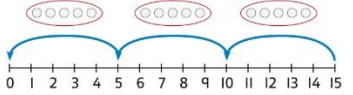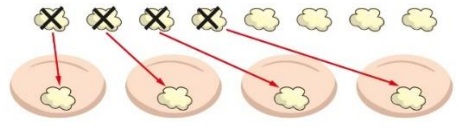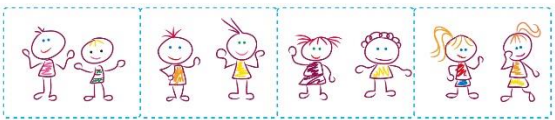
Year 1 subtraction			
Identify and represent numbers using objects and pictorial representations including the number line. Counting back Taking away	Arrange objects and remove to find how many are left. *1 less than 6 is 5.* *6 subtract 1 is 5.*	Draw and cross out or use counters to represent objects from a problem. $9 - \square = \square$ There are $\square$ children left.	Children count back to take away and use a number line or number track to support the method. *8….7…….6* *9 – 3 = 6*
Identify and represent numbers using objects and pictorial representations including the number line. Finding the difference	Arrange two groups so that the difference between the groups can be worked out. *10 is 7 more than 3.* *3 is 7 less than 10.* *The difference between 10 and 3 is 7.*	Represent objects using sketches or counters to support finding the difference. *5 – 4 = 1* *The difference between 5 and 4 is 1.*	Children understand 'find the difference' as subtraction. *10 – 4 = 6* *The difference between 10 and 6 is 4.*
Represent and use number bonds and related subtraction facts within 20 Subtract one digit and two-digit numbers to 20, including zero	Understand when and how to subtract 1s efficiently. Use a bead string to subtract 1s efficiently. *5 – 3 = 2* *15 – 3 = 12* For example: 12 – 7 Arrange objects into a 10 and some 1s, then decide on how to split the 7 into parts.	Understand when and how to subtract 1s efficiently. *5 – 3 = 2* *15 – 3 = 12* Represent the use of bonds using ten frames.	Understand how to use knowledge of bonds within 10 to subtract efficiently. *5 – 3 = 2* *15 – 3 = 12* Use a number line and a part-whole model to support the method. *13 – 5*

	7 is 2 and 5, so I take away the 2 and then the 5.	*For 13 – 5, I take away 3 to make 10, then take away 2 to make 8.*	
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = * - 9	Separate a whole into parts and understand how one part can be found by subtraction. *8 – 5 = ?*	Represent a whole and a part and understand how to find the missing part by subtraction. 5 – 4 =	Use a part-whole model to support the subtraction to find a missing part. *7 – 3 = ?* Develop an understanding of the relationship between addition and subtraction facts in a part-whole model.
Understand that the equals sign (=) is a sign of equivalence.	Many children develop the misconception that the answer to a calculation is on the right-hand side of the equals sign. Scales can be used to help children explore the idea that both sides of a calculation must balance. 5 = 3 + 2 2 = 6 - ?	Children should start to see that addition and subtraction are related operations. For example: 7 + 3 = 10 is related to 7 = 10 - 3. This understanding can be supported with a tens frame:	It is important that the children experience the equals sign (=) in different positions. By writing calculations either side of the equals sign (e.g., 2+4=5+1), the children will not just interpret it as meaning 'the answer'.
Solve missing number problems.			Children must be able to complete missing number problems, where

			the 'missing number' can be placed in all possible positions: $7 + \square = 9$ $\square - 3 = 11$ $\square = 8 + 5$
Year 1 addition and subtraction vocabulary	addition, add, forwards, put together, more than, total, altogether, distance between, difference between, equals = same as, pattern, odd, even, digit, counting on, subtraction, subtract, take away, minus, less than, most, least.		
Year 1 multiplication			
count in multiples of twos, fives and tens	There are 5 pens in each pack … 5…10…15…20…25…30…35…40…	100 squares and ten frames support counting in 2s, 5s and 10s.	Use a number line to support repeated addition through counting in 2s, 5s and 10s.
solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	Children arrange objects in equal and unequal groups and understand how to recognise whether they are equal.	Children draw and represent equal and unequal groups.	*Three equal groups of 4.* *Four equal groups of 3.*
Year 1 division			

solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations, and arrays with the support of the teacher	Learn to make equal groups from a whole and find how many equal groups of a certain size can be made. Sort a whole set people and objects into equal groups. *There are 6 fish altogether.* *There are 2 in each group.* *There are 3 groups.*	Represent a whole and work out how many equal groups. *There are 10 in total.* *There are 5 in each group.* *There are 2 groups.* Half of 8 is 4. $8 \div 2 = 4$ Children should be shown that halving and dividing by 2 are the same.	Children may relate this to counting back in steps of 2, 5 or 10.
	Share a set of objects into equal parts and work out how many are in each part. 	Sketch or draw to represent sharing into equal parts. This may be related to fractions. 	*10 shared into 2 equal groups gives 5 in each group.*
Year 1 Multiplication and division vocabulary	Ones, groups, lots of, doubling repeated addition, groups of, lots of, times, columns, rows, longer, bigger, higher, times as (big, long, wide >etc), share, share equally, one each, two each, group, groups of, lots of, array.		