Year 1 Key Representations

Find out more…

Watch the **Unit tutorial** before planning each unit.

Read the **planning guides** for suggestions of representations.

Make use of **PD videos** on unit pages and Progression in Calculations page.

Representations of number

Pupils are most familiar with concrete representations of number within 20 which show one to one correspondence, such as cubes, counters, bead strings to 20 and other countable objects. They also recognise numerals and numbers to 20. A ten frame has been used to represent numbers and think about what this shows.
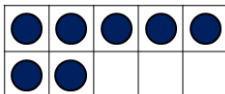
*There are seven counters. Seven is two more than five. Seven is three less than 10.*

There are 11 cubes. 11 is one more than ten.

Ordering numbers

Pupils have explored a number of ways to order and compare numbers practically using representations including a **number track** and a **number line**, within 20. These representations are used to secure counting within 20 and stating one more / one less.

1	2	3	4	5	6	7	8	9	10
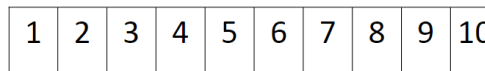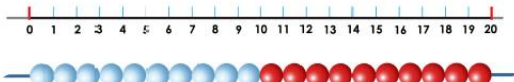
Equations

The phrase 'is equal to' is used consistently to refer to the = symbol. What is on one side of the symbol is equal to what is on the other side. Present equations in different ways to support this:
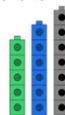
$$2 + 3 = 5$$
$$5 = 3 + 2$$

Comparing numbers

Concrete representations are used to compare numbers, focusing on correct language use. The structure of the representation supports comparison: lining towers of cubes next to one another builds on one-to-one correspondence.

*Five is **less than** seven. Five ones is **fewer than** seven ones.*
*Seven is **greater than** five.*

Representing numbers 11-20

Pupils say, read and write teen numbers. Pupils understand the ten and ones relationship of teen numbers, supported by representations.

*There are fourteen cubes. This is written as 14. 14 is one ten and four ones.*

Part-whole language and representations

Pupils will have had lots of experience partitioning numbers in different ways through exploring concrete representations. They may identify these as parts and should see that numbers can be split in different ways.

A part-whole model is used to represent number bonds, addition and subtraction. Pupils are familiar with the concept of a whole and partitioning this into two or more parts. They explore how to write this relationship as an equation.
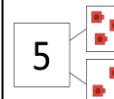
The whole is five. I can partition five into one part of three and one part of two.
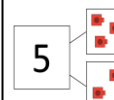
There are three people in one train carriage and two people in another. One part is three and one part is two. The whole is five.

whole = part + part
$$5 = 3 + 2$$

## Counting principles – conservation of number

A key number principle for developing addition and subtraction strategies is to understand that the same number of objects will always have the same value.

There are still seven counters. The position has changed but no counters have been added or taken away.

Counting principles – subitising

Subitising is the ability to identify a group of objects without the need to count. Pupils have explored this and should be confident in subitising up to five objects. Making use of patterns e.g. die faces, triangle shapes can support this.
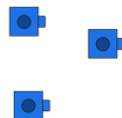
Doubling and halving

Pupils have had opportunities to represent doubling and halving within 20 practically using manipulatives and other countable objects. Some facts may be recalled and pupils may connect this with equal groups.
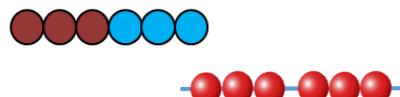
Double three is six. Three plus three is equal to six. Half of six is three.

Development of division

Pupils explore counting in equal groups using manipulatives or pictorial representations.
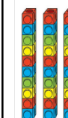
There are three equal groups of 10. 10, 20, 30. There are 30 altogether.

Pupils have explored the concept of equal and unequal grouping and sharing in context using concrete manipulatives.

15 cows can be grouped into five fields in this way. The groups are unequal.

If 15 bags of grain are shared equally between five farmers, each farmer gets three bags.
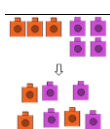
Developing fraction language

The foundations for fractions have been laid through exploration of half full / half empty and associated descriptions. Pupils have also explored doubling and halving without linking specifically to fractions.

The bottle is half full. The bottle is half empty.

Addition and subtraction strategies

Pupils are familiar with addition and subtraction (taking away) using concrete and pictorial representations. A range of contexts for this have been explored. Pupils should be familiar with strategies including count all, count on and count back using representations.

I have four yellow cubes. I add two green cubes. I can count on from four: five, six. There are six cubes.

I have five cubes. I can take away two: four, three. Five take away two is three.

I have three red cubes and four purple cubes. I can put them together and count the whole. There are seven cubes.