

## Calculation in the Early Years

By the end of Reception, children will be assessed against the ELGs. The goals relevant to calculation are:


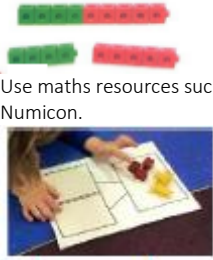
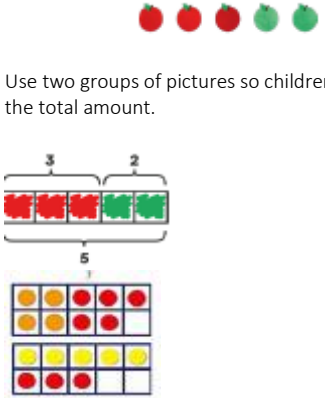
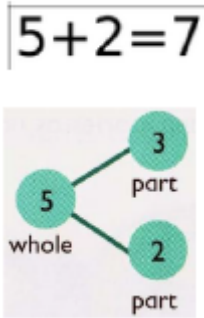
### Number

- Have a deep understanding of number to 10, including the composition of each number.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

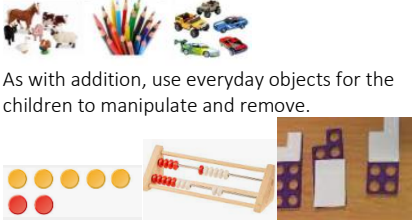

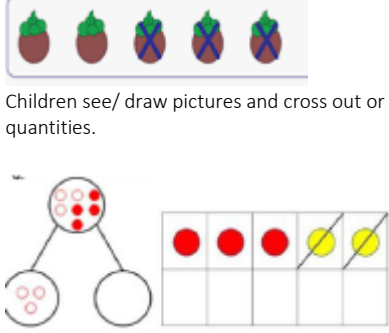
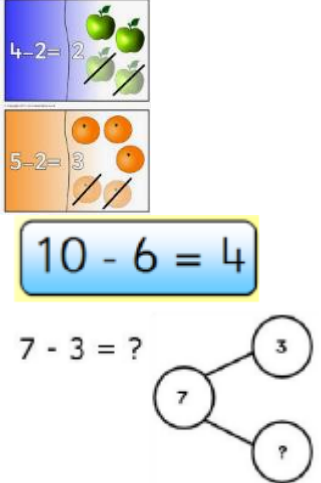
Calculations will be taught in a purposeful, practical way through play as well as teacher-led activities and as much as possible, through real-life contexts. Children will develop their learning further through purposeful play and independent exploration of the classroom and outdoor environment.

We use concrete resources to introduce concepts and move on to pictorial and then abstract concepts when children are ready.





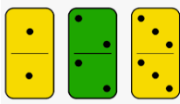

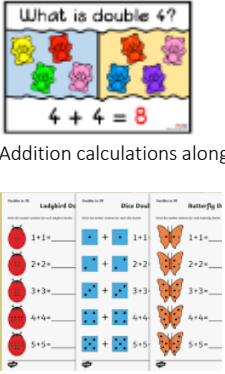
## Addition

| Objectives  | Concrete  | Pictorial  | Abstract   |
|---|---|--|--|
| <p>Knows that a group of things change in quantity when something is added.</p> <p>Find the total number of items in two groups by counting all of them.</p> <p>Says the number that is one more than a given number.</p> <p>Finds one more from a group of up to ten objects.</p> <p>In practical activities and discussion, beginning to use the vocabulary involved in adding.</p> <p>Solve problems including doubling.</p> |  <p>Use toys and classroom resources for children to physically manipulate.</p>  <p>Use maths resources such as cubes, counters or Numicon.</p> <p>Use tens frames or part, part whole diagrams with manipulatives.</p> |  <p>Use two groups of pictures so children can count the total amount.</p> <p>Use bar models or pictorial versions of ten frames.</p> |  <p>Use symbols and numbers to form a calculation (there is no expectation for children to write number sentences).</p> |




## Subtraction

| Objectives   | Concrete  | Pictorial  | Abstract  |
|--|---|--|---|
| <p>Knows that a group of things change in quantity when something is taken away.</p> <p>Find one less from a group of up to ten objects.</p> <p>In practical activities and discussion, beginning to use the vocabulary involved in subtracting.</p> |  <p>As with addition, use everyday objects for the children to manipulate and remove.</p> <p>Use specific maths resources such as counters, Numicon, rekenreks etc.</p>  <p>Use visuals such as tens frames with manipulatives to support learning.</p> |  <p>Children see/ draw pictures and cross out or cover quantities.</p> <p>Use visual supports such as part, part whole or tens frames.</p> |  <p>Expose children to symbols and numbers related to subtraction (there is no expectation for children to write number sentences).</p> |

# Multiplication

| Objectives                                | Concrete  | Pictorial  | Abstract   |
|---|---|--|--|
| <p>Solve problems involving doubling.</p> |  <p>Counting and other maths resources for children to make 2 equal groups.</p>  <p>Real life examples of doubling/adding two equal groups.</p>  |  <p>Pictures that encourage children to see concept of doubling as adding two equal groups.</p>   |  <p>Addition calculations alongside pictures.</p> |

# Division

| Objectives   | Concrete   | Pictorial  |
|--|--|--|
| <p>Solve problems including halving and sharing.</p> <p>Halving a whole.</p> <p>Halving a quantity of objects.</p> |   <p>Give children opportunities to cut real-life objects in half and to share concrete manipulatives between two or more plates/rings etc.</p> |  <p>Pictures and icons that encourage children to see concept of halving and sharing.</p> <p>Part, part whole or bar models to show equal parts.</p> |