

# Curriculum evening 2017

## Maths

Nascot Wood Infant & Nursery School  
January 2017



# Aims and objectives

- We want children to think and reason mathematically in order to solve a range of problems, underpinned by a fluent understanding of the number system.



# Fluency

- Children are taught how the number system works and how to carry out basic number calculations. We encourage the children to continually practise and use this understanding so that they become fluent in using it. Being mathematically fluent also involves choosing efficient methods and procedures, and working flexibly to become better at making decisions about which is best to use.



# Problem solving

- We teach the children to apply their mathematical knowledge to solve a range of problems. The children need to be taught the strategies and systems in which to solve problems in an efficient way. This links very much with fluency because the more efficient the children are at using a range of strategies the more capable they will be at unpicking and solving problems.



# Reasoning

- Children are encouraged to talk about their maths learning and to use what they know to reason, explain and justify their work. They are taught the correct maths terminology and are expected to use these in their everyday maths sessions. The children are encouraged to develop their own strategies and to share these. We use learning partners within the mathematics classroom. Talking with others allows the children to develop a range of ideas and to understand that often in Maths there are different ways / methods of reaching an answer / conclusion. We encourage the children to verbalise their ideas and to give reasons behind their thinking.



# Use of manipulatives

- Children are taught how to use a range of manipulatives to support their learning at every stage. They learn to use a variety of concrete apparatus which allows them to gain a visual and tactile understanding of a new concept. As the children become secure with this they learn to represent their maths through pictures and diagrams and finally to use more abstract notation such as symbols. (Concrete, pictorial, abstract – CPA). All children should access this approach regardless of ability or stage of learning.



# Manipulatives

- These are practical equipment used to support a child's visual understanding of a mathematical concept. Some examples are:
- bead strings
- base ten blocks (Dienes)
- tens frames
- multilink



# Using tens frames

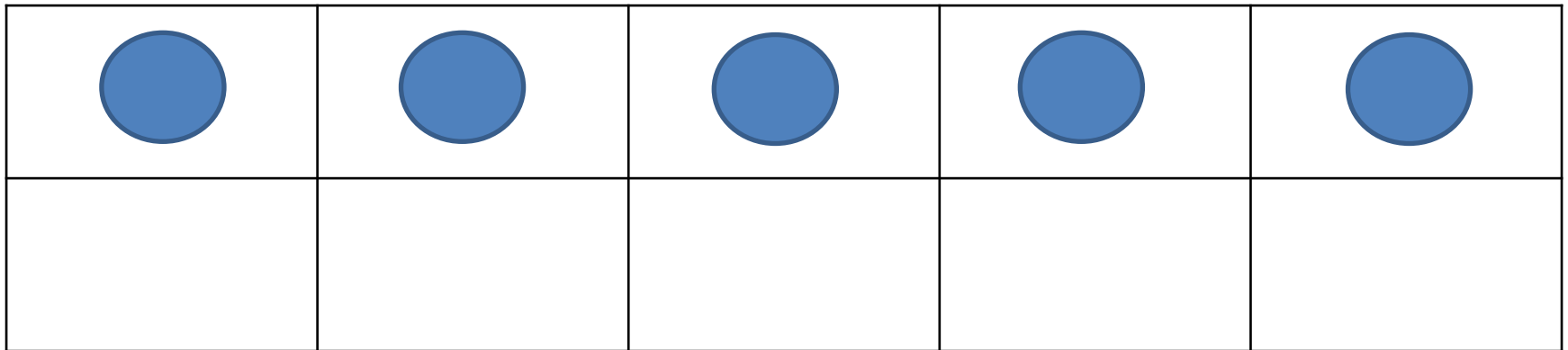
- A tens frame is made up of 10 squares.
- It allows children to represent numbers up to 10 and beyond, and to calculate answers.



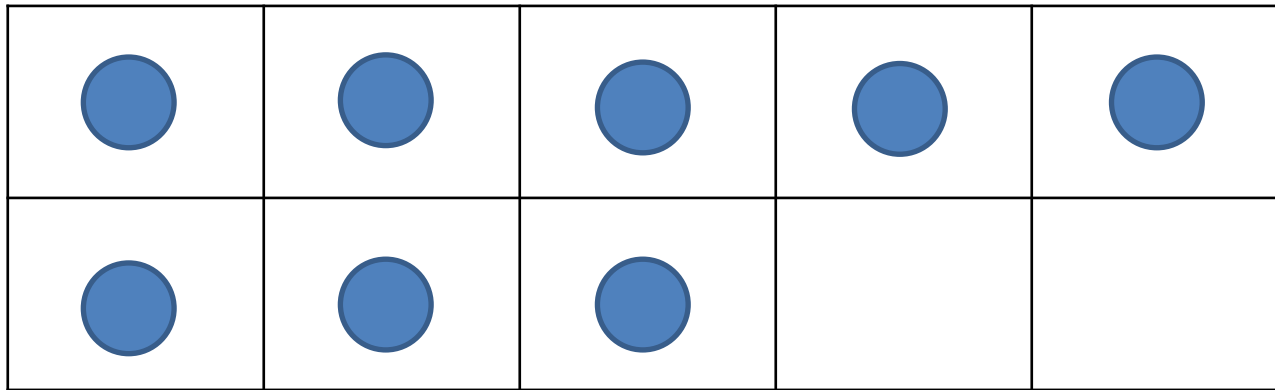


# Showing numbers

This represents 5

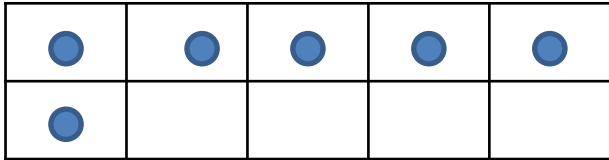


- This represents 8

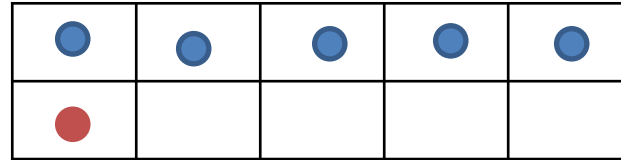


# Number bonds

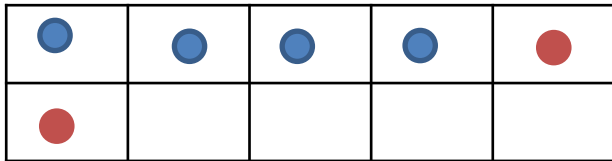
- Number bonds for 6



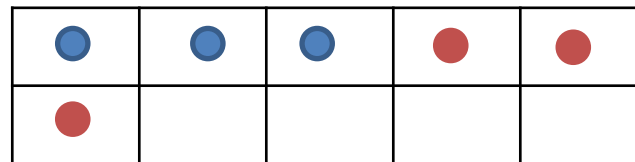
$$6 + 0 = 6$$



$$5 + 1 = 6$$



$$4 + 2 = 6$$

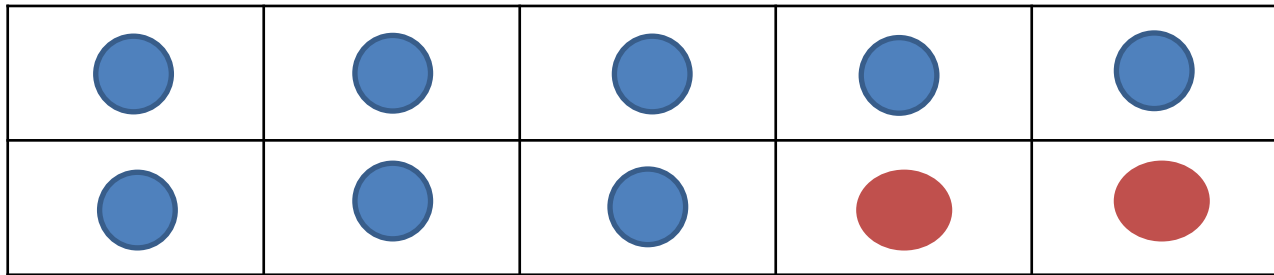


$$3 + 3 = 6$$



# Adding using tens frames

- $8 + 4 =$

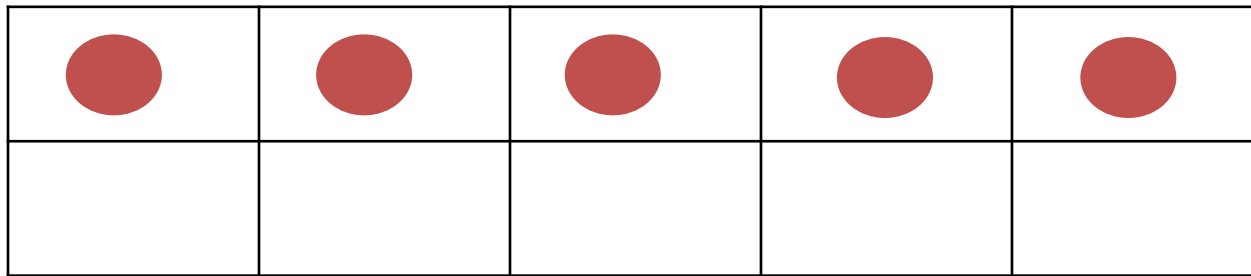
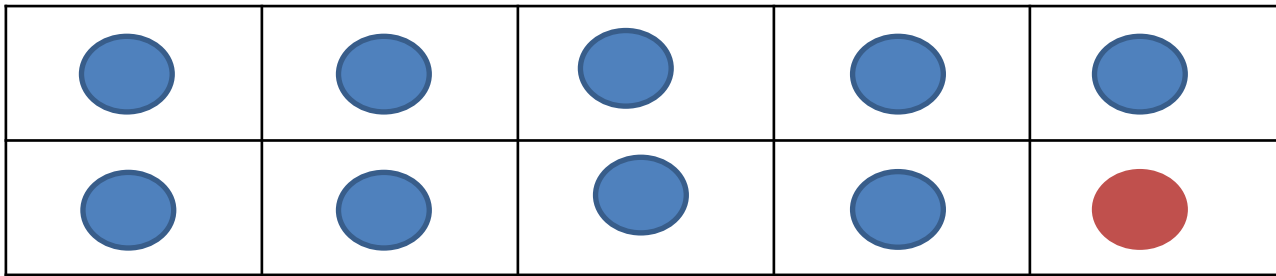


- Children can see that 2 more is needed to make the ten and then 2 more is equal to 12.
- $8 + 2 + 2 = 12$



# Subtracting

- $15 - 6 =$

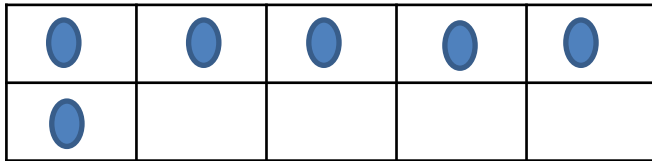
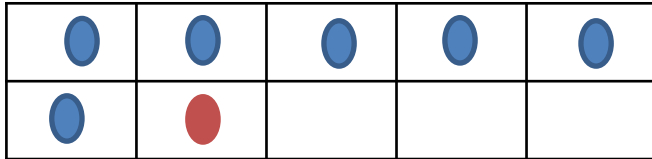


- Children can subtract 5 to make 10 then subtract the extra 1.
- $15 - 5 - 1 = 9$



# Adding near doubles

- $7 + 6 =$



- Children use their knowledge of doubles to help them  
eg  $6 + 6 + 1 =$



# Examples of reasoning activities.



# True and False

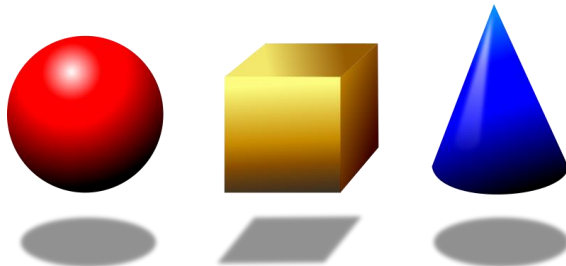
- Triangles
- Sort statements into true and false.
  - All triangles have 3 sides.
  - Some triangles have curved sides.
  - All triangles have 4 corners.
  - Some triangles have 2 longer sides and 1 shorter side.
  - Triangle sides are always the same length.
  - Triangles never have curved sides.
  - Triangle sides are sometimes different lengths.





# Odd one out.

- 3D shapes.
- Choose three 3D shapes.  
Decide which is the odd one out and explain why.



- The cube could be the odd one out because it has only flat faces.
- The sphere could be the odd one out because it has no vertices.
- The cone could be the odd one out because it is the only shape with both curved and flat faces.



# Always Sometimes Never

- Are the following statements about number always true, sometimes true or never true?
- How do you know?

When you add two numbers you can change the order and the answer will be the same	If you add 2 odd numbers the answer will be an odd number.
When you add 10 to a number the answer is a multiple of 10	When you subtract one number from another number you can change the order and the answer will be the same.



# Always Sometimes Never

If you put two squares together you get a rectangle.	3D shapes have more than four faces.
When you cut a square in half you get a rectangle.	Four sided shapes are called squares.
Three sided shapes are called triangles.	Quadrilaterals can have 5 sides.



# Forming conclusions

- Try out examples and form a conclusion.
- What happens if you add 2 odd numbers together?
- eg  $3 + 3$                        $5 + 5$   
 $11 + 11$                        $15 + 15$   
 $7 + 7$                        $21 + 21$
- You always get an even number.



# Complete the pattern and explain choices.

- 3 6 9 12 \_\_\_ \_\_\_

- The next numbers are 15 and 18 because it increases by 3 each time.

- 3 13 23 33 43 \_\_\_ \_\_\_

- The next numbers are 53 and 63 because it increases by 10 each time.

- And finally one for you to ponder...

- 1 2 3 2 4 6 4 8 12 8 \_\_\_ \_\_\_

