





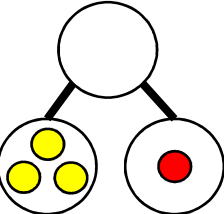


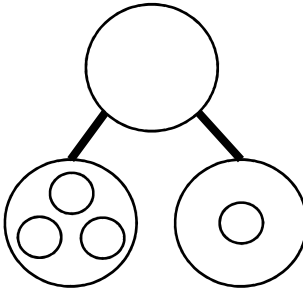
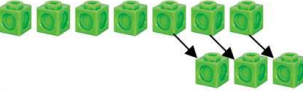
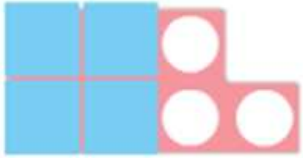
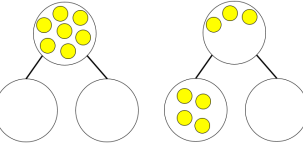
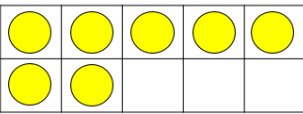
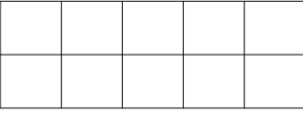
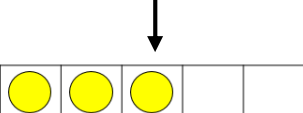
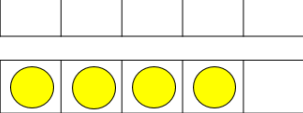


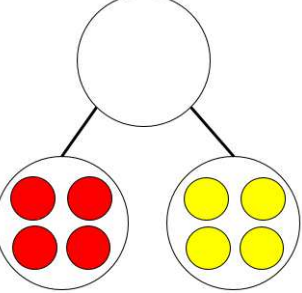
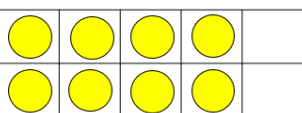
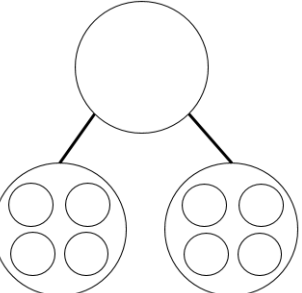
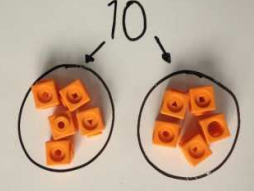
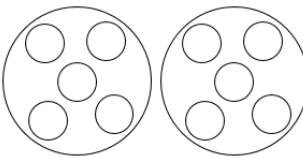


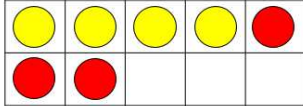




 <b>Cardinality and Counting (A)</b>	 <b>Comparison (B)</b>	 <b>Composition (C)</b>	 <b>Pattern (D)</b>	<b>Addition</b>	<b>Subtraction</b>	<b>Multiplication</b>	<b>Division</b>
<b>Reception</b>	<ul style="list-style-type: none"> <li>Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0</li> <li>Increasingly confident at putting numerals in order 0 to 10 (ordinality)</li> <li>Engages in subitising numbers to four and maybe five</li> <li>Counts out up to 10 objects from a larger group</li> <li>Matches the numeral with a group of items to show how many there are (up to 10)</li> </ul>	<ul style="list-style-type: none"> <li>Uses number names and symbols when comparing numbers, showing interest in large numbers</li> <li>Estimates of numbers of things, showing understanding of relative size</li> </ul>	<ul style="list-style-type: none"> <li>Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects</li> <li>Begins to conceptually subitise larger numbers by subitising smaller groups within the number, <i>e.g. sees six raisins on a plate as three and three</i></li> <li>In practical activities, adds one and subtracts one with numbers to 10</li> <li>Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and “+” or “-”</li> </ul>	<ul style="list-style-type: none"> <li>Spots patterns in the environment, beginning to identify the pattern “rule”</li> <li>Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat</li> </ul>	<p>Adding numbers within 5</p> <p><b>3 + 1 = 4</b></p> <p><b>Concrete</b></p>     <p>Combine both ‘parts’ to make the ‘whole’.</p>  <p>Place a counter on the number 3 and count on 1.</p> <p><b>Pictorial</b></p>  	<p>Subtracting numbers within 5</p> <p>Begin with subtracting from numbers less than 5 – follow the same process as outlined below.</p> <p><b>7 - 4 = 3</b></p> <p><b>Concrete</b></p>       	<p>Doubling</p> <p><b>Double 4 is 8 or 4 + 4 = 8.</b></p> <p><b>Concrete</b></p>     <p><b>Pictorial</b></p>  <p><b>Abstract</b> (mental strategy – counting on) ‘Put 4 in your head and count on 4’</p>	<p>Halving</p> <p><b>Half of 10 is 5; Share 10 into 2 equal groups.</b></p> <p><b>Concrete</b></p>  <p>Count how many are in each group = 5.</p> <p><b>Pictorial</b></p> 

					<p>Touch count the counters and combine at the top.</p>  <p><b>Abstract</b> (mental strategy – counting on) 'Put 3 in your head and count on 1.'</p> <p>4</p>  <p><math>3 + 1 = 4</math></p> <p>Adding numbers within 10.</p> <p><b><math>4 + 3 = 7</math></b></p> <p>Follow the same process as above. N.B. When using a tens frame, see the example below.</p> 	<p>Place 7 counters on the tens frame and</p>  <p>Place a counter on the number 7 and count back 3.</p> <p><b>Pictorial</b></p>  <p><b>Abstract</b> (mental strategy – counting back) 'Put 7 in your head and count back 4.'</p>  <p>6 5 4 3</p>	 <p>5 6 7 8</p>	
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- Suggested activities
- (A) Play games such as hide and seek that involve counting, forwards and backwards.
  - (A) Discuss the order of numbers in context, e.g. finding a page number.
  - (A) Enjoy subitising games and sustained shared thinking about number, indoors and outdoors.
  - (A) Encourage cardinal counting by saying how many there are after counting (...6, 7, 8. There are 8 balls).
  - (A) In everyday activities, ask children to count out a number of things from a group (e.g. Could you get seven cups for snack time?)
  - (A) Jump with children along a number track, counting each jump or counting on.
  - (A) Sing counting songs and count together forwards and backwards, sometimes starting from different numbers and in different step sizes. Discuss numbers coming before, after and between and stress patterns.
  - (A) Plan opportunities to order mixed-up numerals. • (B) Model comparing numbers in problems about fair shares.
  - (A) When counting groups as part of routines, e.g. self-registration with ten-frames, dinner chart etc., record the final total as a label for children to see.
  - (A) Subitise with children, talking about how they see numbers of things made up in a variety of arrangements (e.g. recognising odd and even numbers).
  - (A) Build counting and ways of representing numbers into everyday routines.
  - (A) Provide opportunities for children to match a number of objects to the numeral, including zero, and display number lines to 100 at child height.

- (B) Pose everyday estimation problems and establish mental estimation benchmarks, e.g. more or less than 10.
  - (C) Talk with children about the strategies they have used to solve a problem. Spot opportunities to playfully pose composition problems for children to explore.
  - (C) Talk to children about the marks and signs they use to represent and communicate their thinking. As appropriate, model and discuss informal and standard ways (e.g. using arrows, plus and minus signs).
    - (C) Begin to model calculations in mathematical stories and number rhymes and in real contexts, using a range of ways of representing (e.g. five-frames). Use both informal and standard ways to record these, including tallies and symbols. Discuss children's own graphical strategies to solve problems, using some vocabulary of addition and subtraction.
  - (D) Encourage children to notice and appreciate a range of patterns involving repetition and symmetry in the environment, including traditional patterns from a range of cultures.
  - (D) Model using symbols to represent a pattern in other ways (e.g. using a spot/cross/dash pattern of symbols and doing a twirl/jump/glide in response).
  - (D) Make deliberate mistakes when creating patterns alongside children and playfully challenge them to fix the problem.
  - (D) Make border patterns where the repeating pattern continues around an object or frame.
  - (D) Provide opportunities for printing patterns using a variety of objects.
  - (D) Using photos, challenge children to copy and continue patterns.
  - (D) Invite children to create a pattern with the same structure using different objects (e.g. instead of a red/blue/blue pattern, create a sheep/cow/cow pattern).
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- Encourage children to make predictions and visualise the outcome in stories, rhymes and songs if one (or two) is added or taken away.
  - Involve children in voting, e.g. for books to read at story time, using linking cubes with children's names on.
  - Discuss examples and display large numbers including hundreds, thousands and a million.
  - Set up an estimation station where everyone records guesses; later count and order the guesses.
  - Provide numeral cards for children to order on a washing line.
  - Play subitising games which involve quickly revealing and hiding numbers of objects, perhaps showing numeral cards and fingers.
  - Drop marbles into a tin and ask the children to listen (without looking) to count how many there are.
  - Provide dice, board and card games, sometimes involving older children, families and members of the local community.
  - Provide resources to make "staircase" patterns which show that the next counting number includes the previous number plus one.
  - Display children's mathematical representations, including explanations of the children's meaning making.