

## Routes to numeracy

| Routes to numeracy             |  | Routes for Learning (RfL) routemap   | A steps  | B steps  | C steps  |
|--------------------------------|--|--|--|--|--|
| Strands                        | Elements                                   | Learners have achieved the following.  | Learners are able to:  | Learners are able to:  | Learners are able to:  |
| Developing numerical reasoning | Identify processes and connections         | <ul style="list-style-type: none"> <li>Intentional exploration of the environment [RfL 27]</li> <li>Shared attention [RfL 40]</li> <li>Modifies action when repeating action does not work [RfL 38]</li> <li>Object permanence [RfL 34]</li> </ul> | <ul style="list-style-type: none"> <li>focus attention on objects, manipulating and exploring them using a range of methods</li> <li>show an interest in number activities and counting with an adult, copy some actions, and/or vocalise at appropriate moments</li> <li>use a favourite object in a new or different way after watching an adult do so</li> <li>locate and remove a favourite object from among a collection of different objects</li> </ul> | <ul style="list-style-type: none"> <li>pay attention, respond to and use number words in structured activities led by an adult</li> <li>assist in counting and match identical objects when the task is structured by an adult</li> <li>treat familiar items as similar despite differences in their appearance or their medium of representation (as objects, pictures, etc.)</li> <li>watch an adult order a number of items in a particular way (e.g. cars in a row) then attempt to copy</li> <li>search for all missing items when two or three objects are hidden</li> </ul> | <ul style="list-style-type: none"> <li>use counting and comparing sometimes outside focused teaching activities</li> <li>complete a task requiring several steps</li> <li>select and manipulate objects in order to help solve a problem</li> <li>make an attempt at a simple estimate, e.g. how many objects will fit in a container</li> </ul>   |
|                                | Represent and communicate                  |  |  | <ul style="list-style-type: none"> <li>respond appropriately to some words describing:                             <ul style="list-style-type: none"> <li>quantity, e.g. more</li> <li>size, e.g. big</li> <li>position, e.g. in</li> </ul>                             when applied to real objects</li> <li>sign or indicate to show responses or choices</li> </ul>   | <ul style="list-style-type: none"> <li>respond appropriately to words describing:                             <ul style="list-style-type: none"> <li>quantity, e.g. some, more, a lot</li> <li>size, e.g. big, little</li> <li>position, e.g. in, on, under</li> </ul> </li> <li>demonstrate an awareness of number in activities</li> <li>record by making marks or drawing pictures</li> </ul> |
|                                | Review                                     |  |  |  | <ul style="list-style-type: none"> <li>recognise if the pattern is wrong, where items are in pairs, and put it right by completing the set or removing the odd item</li> <li>interpret written numerals correctly (up to 3) in a practical task, e.g. reads '3' and gives out corresponding number of drinks to others</li> </ul>  |
| Using number skills            | Use number facts and relationships         | <ul style="list-style-type: none"> <li>'Looks' backwards/forwards between two objects (knows two objects are present) [RfL 29]</li> <li>Shared attention [RfL 40]</li> </ul>   | <ul style="list-style-type: none"> <li>anticipate climax in familiar number songs or rhymes (showing emergent recognition of number words)</li> <li>recognise which quantity is greater when numbers are small</li> <li>point to an object or vocalise at an appropriate moment to indicate a number when an adult is counting</li> </ul>  | <ul style="list-style-type: none"> <li>count two or three objects with support</li> <li>recite numbers from 1 to 3</li> <li>associate numerals (1 and 2) with number activities</li> <li>recognise that '2' is more than '1'</li> </ul>  | <ul style="list-style-type: none"> <li>count reliably up to three objects</li> <li>recite numbers from 1 to 5</li> <li>name and order numbers to at least 3</li> </ul>   |
|                                | Fractions, decimals, percentages and ratio |  |  |  |  |
|                                | Calculate using mental and written methods |  |  |  | <ul style="list-style-type: none"> <li>'add more' to, or 'take away' from, a set when the task is structured by an adult, and can re-count to find new total</li> </ul>  |
|                                | Estimate and check                         |  |  |  |  |
|                                | Manage money                               | <ul style="list-style-type: none"> <li>Communicates choice to attentive adult [RfL 37]</li> </ul>  | <ul style="list-style-type: none"> <li>give a coin in exchange for an item after observing others do so in role play shop (may have no notion of coin's value but will engage in the social interaction)</li> </ul>  | <ul style="list-style-type: none"> <li>point to choice of item from two or three in role play shop then give coin(s) in exchange</li> <li>find coins from a limited collection which are the same as ones shown by an adult</li> </ul>   | <ul style="list-style-type: none"> <li>give money in exchange for an item in a real shop when coins and choice are prepared in advance</li> <li>sort coins according to one attribute, e.g. colour, size or shape</li> </ul>   |
| Using measuring skills         | Length, weight/mass, capacity              | <ul style="list-style-type: none"> <li>Selects from two or more items [RfL 36]</li> </ul>  | <ul style="list-style-type: none"> <li>explore the distinctions between objects by putting/holding them together, joining/stacking/breaking them apart/putting them into containers</li> </ul>   | <ul style="list-style-type: none"> <li>find the 'big' object from two otherwise similar items:                             <ul style="list-style-type: none"> <li>where the difference in size is large and the activity is structured by an adult</li> </ul> </li> <li>find one the same from a small collection of objects when the activity is structured by an adult</li> </ul>  | <ul style="list-style-type: none"> <li>independently compare the size of objects by lining them up or holding them together:                             <ul style="list-style-type: none"> <li>find the 'big' one from two objects and order several objects according to their size</li> </ul> </li> </ul>   |
|                                | Time                                       | <ul style="list-style-type: none"> <li>Does two different actions in sequence to get reward [RfL 35]</li> </ul>  | <ul style="list-style-type: none"> <li>show growing awareness of rhythmical patterns and begin to coordinate some sounds with gestures or pointing</li> </ul>  | <ul style="list-style-type: none"> <li>adjust speed of clapping to match a model (faster or slower)</li> <li>anticipate a routine event when it is represented by a picture/symbol or object of reference</li> </ul>   | <ul style="list-style-type: none"> <li>accept a wait for a more favoured activity by referring to a pictorial representation of their day (use the concepts of 'finished' and 'next')</li> <li>use simple pictures to understand the sequence of events and activities in their day</li> </ul>   |
|                                | Temperature                                |  |  |  | <ul style="list-style-type: none"> <li>appreciate the difference of hot and cold</li> </ul>  |
|                                | Area and volume<br>Angle and position      |  |  |  |  |

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| Using data skills  | <p>Collect and record data</p> <p>Present and analyse data</p> <p>Interpret results</p> | <ul style="list-style-type: none"> <li>• Selects from two or more items [RfL 36]</li> <li>• Purposeful action on everyday environment [RfL 24]</li> </ul> | <ul style="list-style-type: none"> <li>• 'gather' and hold onto several objects sharing a particular preferred property, while discarding others</li> <li>• touch, point to or give an object to indicate an 'answer' in a number activity.</li> </ul> | <ul style="list-style-type: none"> <li>• separate from a collection objects which share a common attribute (of their own choosing)</li> <li>• match an object to an identical object and a picture to an identical picture</li> <li>• match a very familiar object to a clear photo of an identical object</li> <li>• manipulate objects or pictures within simple number games and activities – the final position of the items records the solution.</li> </ul> | <ul style="list-style-type: none"> <li>• separate objects which share a specified attribute, e.g. <i>big/little, round</i></li> <li>• consistently match pictures to objects (not necessarily identical)</li> <li>• match related pairs of objects or pictures, e.g. <i>knife and fork, cup and saucer</i></li> <li>• use sorting and ordering to organise objects using them in context but not always correctly</li> <li>• record numbers by matching numerals to sets of objects (up to 3).</li> </ul> |