



Move On Up: Learning Chunk – Entry 1 numeracy

A learning chunk is not a session plan. It provides a series of teaching and learning ideas around a skill(s) area. It is intended that teachers can select and adapt the ideas to meet the requirements of their learners in different contexts.

Length, width and height

Curriculum references: MSS1/E1.4, MSS1/E1.3, MSS1/E1.5, MSS1/E1.6

Contexts: Learners will use measuring in a wide variety of everyday and vocational contexts and will find it useful to build their confidence in recognising length, width and height and in estimating and comparing different distances. They can also develop their awareness of other units of measurement and the transferable skills of working in metric measures.

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and to build their confidence with working with length, width and height and with comparing lengths.	More or less? <ul style="list-style-type: none">Take in a suitable variety of items of different length. Spread them around the room in pairs labelling one in each pair A and the other B. Ask learners to move around the room in pairs and (without touching the items or holding them directly side by side) note down for each pair of items which is longer/wider/taller. Variation on 'More or less?' <ul style="list-style-type: none">Divide learners into small groups and give each group a number of items. Ask them, by estimating, to order their items in order of length/width/depth/height. When they have decided on their agreed order, they can then put them side by side to check if they ordered the items correctly. This activity has the useful advantage that it is very easy to provide differentiated options, so learners with greater skills can be in a small group together and can be given more items to order and items that are closer in dimensions to one another.	<ul style="list-style-type: none">A variety of items of different lengths.

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	<p>Extension of ‘More or less?’</p> <ul style="list-style-type: none"> Repeat this activity but use items with different weights or capacities, e.g. different items from the supermarket with their weights covered up or jars and containers. Ask learners to move around the room in pairs and note down for each pair of items which they think weighs more/holds more. As a whole group compare answers and discuss if there were any pairs that learners found more difficult than others. 	<ul style="list-style-type: none"> A variety of everyday items of different weights. A variety of jars and containers.
<p>Whole group warm up/mental maths activities – to get the learners active and to build their confidence with working with length, width and height and with comparing lengths.</p>	<p>Is this the right one?</p> <ul style="list-style-type: none"> The teacher holds up an item in a particular length, e.g. a screw or a nail. The learners have a range of similar options to choose from, some of which are the same length, some longer, some shorter. They choose one item which they think is the same length as the teacher’s item. They then compare to see if they are right – and if not how close they are. (If appropriate they could then choose an alternative which is a closer match.) <p>Variation of ‘Is this the right one?’</p> <ul style="list-style-type: none"> The same idea can be extended to widths of suitable items such as screws, diameters of holes in washers/nuts, etc. <p>Which is bigger?</p> <ul style="list-style-type: none"> The teacher names two items or shows pictures of two items. The learners have to choose which they think is longer, taller, wider or bigger (as requested for each pair) and indicate this (e.g. visually by holding out the appropriate hand to show left/right). e.g. car man <i>If learners were asked ‘Which is taller?’, they would indicate ‘man’.</i> <i>If they were asked ‘Which is bigger?’, they would indicate ‘car’.</i> 	<ul style="list-style-type: none"> Everyday items that typically come in different lengths such as screws, nails, pictures, photos. Everyday items that typically come in different widths/diameters such as screws, washers, nuts. Pictures of everyday items of different sizes.

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	<p>Variation on ‘Which is bigger?’</p> <ul style="list-style-type: none"> The teacher shows two items and asks the learners to compare them in some way, e.g. ‘The wardrobe is taller than the cupboard.’ If this is done verbally, possibly one learner could be picked for each pair shown and then others add any other suggestions of ways to compare them. 					
<p>Discussion and small group/pair work – to get the learners involved in practical activities which will build their skills length, width and height, so they feel able to use these in everyday situations.</p>	<p>Ways to describe it</p> <ul style="list-style-type: none"> As a group, discuss all the different ways they can think of to describe and compare the size of things (e.g. bigger, taller, smaller, fatter, narrower, longer, wider, deeper, etc.). It might help to have examples of everyday items to help generate ideas (such as a swimming pool to elicit depth as well as length and width). If appropriate, pair words together to show typical opposites (e.g. tall/short, fat/thin). This could be reinforced using a ‘Find the pair’ activity. <p>Find the pair (opposites):</p> <ul style="list-style-type: none"> Learners have a set of paired cards which give pairs of opposites. e.g. <table border="1" data-bbox="667 970 1361 1141"> <tbody> <tr> <td data-bbox="667 970 981 1029">long</td> <td data-bbox="1048 970 1361 1029">short</td> </tr> <tr> <td data-bbox="667 1082 981 1141">tall</td> <td data-bbox="1048 1082 1361 1141">deep</td> </tr> </tbody> </table>	long	short	tall	deep	<ul style="list-style-type: none"> Sets of paired cards showing opposites.
long	short					
tall	deep					

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	<ul style="list-style-type: none"> The cards are placed face down and learners take it in turns to turn over two cards. If they show opposites the learner keeps both cards; if not they turn them back over and the next learner takes their turn. In the above example, if the cards turned over were the first and second cards the learner who turned them over would keep them; if the cards picked were the second and third cards shown, they would turn them back over without 'winning' any cards. When all cards are 'claimed', the learner with the most cards in their collection is the winner. 	
<p>Discussion and small group/pair work – to get the learners involved in practical activities that will build their skills in length, width and height, so they feel able to use these in everyday situations.</p>	<p>Estimating amounts</p> <ul style="list-style-type: none"> As a group, discuss examples of when you need to think about the length, width, height and depth of different things – and examples of when it is important if something is 'bigger', 'too big', 'not big enough', etc. Identify examples of things they may typically informally 'measure' or judge the amount of in everyday situations, e.g. cooking ingredients, pouring drinks, food portions, weights of people and pets, clothes sizes, filling kettles, watering plants, etc. <p>Will it fit?</p> <ul style="list-style-type: none"> Provide items that learners can use in small groups/pairs to judge if the items will 'fit' into a given space. <ul style="list-style-type: none"> Example 1: Books on to a shelf, to be sorted into those that are too tall and those that will fit. Example 2: Notices on to a board (or photos of different sizes into an album or graphics on to a page). Example 3: Screws and pieces of wood, sorting the screws into those appropriate to use for that width of wood and those that are too long or too short. 	<ul style="list-style-type: none"> Suitable everyday items to fit with/inside a given space, e.g. books on to a shelf, graphics on to a page, screws with a specific width of wood.

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	<p>Variation on ‘Will it fit?’</p> <ul style="list-style-type: none"> Learners are asked to judge how many/which items will fit into a given space, e.g. tins or containers to go in a box/selection of boxes. 	<ul style="list-style-type: none"> Suitable everyday items to fit with/inside another item such as containers into boxes, items into a suitcase, notices on to a board, etc.
<p>Discussion and small group/pair work – to get the learners involved in practical activities that will build their skills in length, width and height, so they feel able to use these in everyday situations.</p>	<p>Estimating distance and height</p> <ul style="list-style-type: none"> Mark out a specific distance appropriate to the learners’ skills and the space available, e.g. about a 10 metre distance (although this does not need to be measured). Take away the marker indicating the agreed distance and ask learners to take it in turns to estimate the same distance. Mark each learner’s estimate in some way (without influencing the later learners too much). Then compare the estimates to the original distance. Who estimated closest? Who went further/who the least far? Do a similar activity but marking a height and then asking the learners to estimate that height. Discuss who went highest/who lowest, etc. 	<ul style="list-style-type: none"> Markers to indicate learners’ distances if needed.
<p>Problem-solving/ investigations – to develop learners’ awareness of comparing size and length and to build foundation number skills that will transfer to other topics.</p>	<p>Comparing the length, weight and capacity of things</p> <ul style="list-style-type: none"> Discuss how easy learners find it to judge the relative length, etc., of things when they need to. Is it easier if the two items to compare are both available (e.g. side by side)? Discuss examples of when the two things might not be available in the same place to directly compare (e.g. when you are buying curtains for a window, you can’t take the window to the shop with you). If appropriate, extend these thoughts by discussing if there are examples when they need to think about the relative weight and capacity of things. 	

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	<ul style="list-style-type: none"> Identify also some examples of ways they could use in everyday situations to help compare two lengths or distances, e.g. comparing the length of a field, garden or of rooms by using a piece of string or counting out the number of paces; judging the spaces between planting rows using a cane of a set length to judge if the rows are the right distance, or need to be closer/further apart. If appropriate, extend this (in preparation for Entry 2 work) by discussing how people compare and possibly measure things – and talk about any units of measurement they have heard of. 	
<p>Problem-solving/ investigations – to develop learners’ awareness of comparing size and length and to build foundation number skills that will transfer to other topics.</p>	<p>Laying it out</p> <ul style="list-style-type: none"> Using pre-prepared scale plans and scale bits of cards representing the sorts of items you may want to fit into a space, ask learners to explore room layouts (for different rooms). Note: In this activity the learners do not need to think about the scales/measurements involved; they only think about which things or combinations of things will fit and where. Alternatively (as appropriate), ask learners to do a similar thing but focus on possible arrangements of beds in a garden and planting items (with different heights and spreads) into a choice of beds. <p>Variation on ‘Laying it out’</p> <ul style="list-style-type: none"> Working in small groups, encourage learners to explore variation between different people/containers/items. For example, ask each member of the group to perform an agreed action related to length/height, etc. (e.g. all in the group stepping ten paces or reaching up as high, or as wide, as they can). Mark where each group member gets to and then as a group reflect on the difference between different members of their group by comparing how far each person has gone. Before they do the activities get them to estimate who they think will go furthest and who least far, highest, etc. 	<ul style="list-style-type: none"> Scale plans of relevant places/spaces, e.g. room or garden. Scale pieces to represent appropriate items to fit into the above space, e.g. pieces of furniture.

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<p>Problem-solving/ investigations – to develop learners’ awareness of comparing size and length and to build foundation number skills that will transfer to other topics.</p>	<p>How much is left?</p> <ul style="list-style-type: none"> Use two strips of card marked out into ten equal parts and labelled to show from 0 up to 10 in intervals of 1. Place them side by side so that the 0 on one strip is next to the 10 on the other, as shown below: $\begin{array}{r} 0 \text{-----} 10 \\ 10 \text{-----} 0 \end{array}$ Ask the learners questions and get them to use the strips to explore the bonds up to 10 and to practise simple additions and subtractions. Use similar strips showing amounts between 0 and 100 in multiples of 10: $\begin{array}{r} 0-10-20-30-40-50-60-70-80-90-100 \\ 100-90-80-70-60-50-40-30-20-10-0 \end{array}$ These two activities are useful to develop awareness of relative lengths, but also help to build foundation skills such as an awareness of important number bonds which are used in a wide range of topics including money skills – and later, in measuring. 	<ul style="list-style-type: none"> Strips marked into ten equal intervals.
<p>Embedded/ contextualised activities – to encourage learners to practise/use the skills they are learning in contexts most relevant to them.</p>	<ul style="list-style-type: none"> Learners will use comparisons of size and measurement skills in a number of everyday and vocational contexts, including clothes sizes, sharing portions between family members, buying items in different sizes, comparing distances between places, comparing heights and sizes of people, animals and items, etc. 	<ul style="list-style-type: none"> <i>Embedded Materials:</i> Family health – FH4:3–4:8 (pp. 185–195) <i>Skills for Life</i> learner materials – LM/NE1 Unit 4

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<p>Application of skills – to build learners’ confidence to apply the skills they are learning in real life contexts and to reflect on this.</p>	<ul style="list-style-type: none"> • Ask learners to keep a log of any comparing of lengths/widths /heights/ depths they do between sessions and discuss these as a group. • Ask learners to look at items in the shops and try to identify examples of items that give the impression of being bigger than they are, e.g. two similar items where one looks bigger than the other, but they actually contain the same amount. Discuss these as a group in a future session. Why does this happen? How do shops and manufacturers use it to their advantage? • Check if learners know clothes sizes relevant to them and ask them to look at clothes in their size and other sizes between sessions. Look at catalogues (clothes, furniture, accessories, etc.), if appropriate, and check they could identify and order the items they like in the right colour and size. 	<ul style="list-style-type: none"> • Some examples of items that look bigger than they are, which you can use with learners when you discuss this task so they know what type of examples you want them to find when they look for other examples. • Catalogues