A learning chunk is not a session plan. It provides a series of activities 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.

Ordering and comparing numbers

Curriculum references: N1/E1.1, N1/E1.2, N1/E.3, N1/E2.1, N1/E2.2, N1/E2.3

Contexts: The skills of recognising, ordering and comparing numbers are fundamental to many everyday skills and to a wide variety of other maths topics. Learners will use these skills in a range of everyday contexts and will need learning to be related to concrete examples and to their own life experience.

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**More or less? (Entry 1)** • The teacher puts out groups of suitable items (e.g. one type of coin, poker chips, counters, screws, etc.) in turn and divides the items into two groups (sub-group 'A' and sub-group 'B'), so that each sub-group has between one and ten of the items in it. For each group, ask the learners to identify which sub-group has more items in it and to indicate this, e.g. by pointing or by writing 'A' or 'B' on to an individual mini-whiteboard, as appropriate. Afterwards the learners take turns to check the number of items for each sub-group (e.g. by counting items in each sub-group) so that everyone can check their answer. **Differentiation** • Depending on the skills of the learners, there may be similar numbers of items in the two sub-groups or the numbers may vary a lot. Similarly, the items in each sub-group could all be equally spaced or one sub-group could be closely clustered while the others are spaced out.	• Suitable items such as one type of coin, poker chips, counters, screws, etc., to put out in groups.

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Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Extension of 'More or less?' (Entry 2)** • Put out groups of suitable items at different places around the room. Label each place 1, 2, 3, etc. In each place, split the items into two groups (as before, labelling one 'A' and the other 'B'). Ask learners to move around the room with an answer sheet which gives the number of each place and a space to record their answer. Ask them to identify which sub-group in each place has more items in it (A or B). They record this against the right number on their answer sheet for each place they visit. Afterwards, they take agreed places and check the number of items for each sub-group (e.g. by counting items in each sub-group) so that everyone can check their answers. • If appropriate, learners could have a third option available ('A', 'B' or 'Same') if some sub-groups have the same numbers of items. **How many more? (Entry 2)** • An extension of the 'More or less?' activity described above; learners have to say for each sub-group/place they visit how many more they think would be needed (roughly) so that the two sub-groups match exactly. • When learners check (after everyone has answered), they can match the items to check how many extras are needed and just count the 'extras'. This helps to reinforce the bonds up to 10 for addition and subtraction – and to promote/introduce the idea of using 'counting on', which will be useful in subtraction, working out change, etc.	• A variety of suitable items such as coins, poker chips, counters, screws, etc., to put out in groups.

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Most and least? (Entry 1)** • Take in a suitable variety of items. Spread them around the room in groups of up to ten, labelling the groups A, B, C, etc. Ask learners to move around the room in pairs and (without touching the items or counting them directly) note down which group has most items in it and which has the least number of items. **Extension of 'Most and least?' (Entry 2)** • Include groups of items containing more than ten items at a time – up to 100 items. Again learners try to identify the groups with the most/least items – or they try to order the groups according to ascending/descending numbers of items. (Having items of very different sizes and dimensions sometimes, and items of a similar size at other times, can add to the activity.) • Afterwards, the learners can be given group(s) of items to count up the number of items for that group so that everyone can check if they chose the right groups for their 'most' and 'least'. **More or less? – money** • Several coins (or photographs of coins) are projected on to an interactive whiteboard or placed on a table (if it's a small group and all learners will easily be able to see them) and a learner puts them into order of value. e.g. 20p 10p 50p *The learner would re-order the coins 10p, 20p, 50p.* **Extension of 'More or less?' – money (Entry 2)** • Two or more coins, or groups of coins (actual or photographs), each with a value between 1p and £1, are projected onto an interactive whiteboard or placed on the table. The learners have to put them into order of value. e.g. 34p (made up of 20p + 10p + 2p + 2p) 50p 20p *The learner would re-order the amounts as 20p, 34p, 50p.*	• Suitable items to put out in groups around the room. • Visualiser/interactive whiteboard, if required. • Coins • Visualiser/interactive whiteboard, if required. • Selection of coins

Teaching approach	Teaching and learning ideas	Resources

Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Find the pair (Entry 1)**
	• Learners have a set of paired cards which give different numbers of items/symbols in a variety of patterns.
	e.g.
	
	  * * * * * * *
	                                            *
	                                         * *
	
	• The cards are placed face down and learners take it in turns to turn over two cards. If they show the same number of items, the learners keeps both cards; if not, they turn them back over and the next learner takes their turn.
	• When all cards are 'claimed', the learner with the most cards in their collection is the winner.
	
	Which is bigger? (Entry 1)
	• The group use a pack of cards and learners each have an agreed number of 'lives'. Learners take it in turns to turn over a card. Each learner has to guess if their card will be bigger or smaller (or 'higher' or 'lower') than the previous one. If they are wrong they lose a 'life'.
	
	e.g. If the previous card is a 9 (of spades), they might guess 'lower'.
	If the card they turn over is a 10, they lose a life. If it is an 8 they don't.
	
	• This continues until learners have no lives left and are 'out'. The one left when everyone else is 'out' is the winner.
		• Sets of paired cards showing amounts between 0 and 10 in different patterns.
		
		• Pack of cards

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Variation on 'Which is bigger?' (Entry 2)** • The teacher shows (or says) two numbers and the learners have to indicate which is bigger e.g. by pointing to left/right. e.g. 45 54 *Here the learners would indicate right to show 54 is bigger than 45.* **What's missing?** • The teacher projects sequences of numbers on to the whiteboard and the learners have to decide which number is missing from the sequence. e.g. 5 6 7 9 10 *Learners would identify 8 as the missing number.* • If appropriate, this activity can be done with the numbers of the sequence mixed up and placed randomly, so learners have to search for the sequence first and then identify the missing number. **Variation on 'What's missing?' (Entry 2)** • The sequence of numbers projected on to the whiteboard extends beyond 10 (up to 100), and the learners have to decide which number(s) is/are missing from the sequence. e.g. 28 29 30 32 33 34 36 *Learners would identify 31 and 35 as missing numbers.* • Once the teacher is sure the learners have the idea of this activity, they present the numbers mixed up so that learners have to sequence them and then decide the missing one(s).	

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Exchanging numbers** • Learners work in pairs; one has several numbers to read out to the other (about three or four numbers, each between 0 and 10). The second learner writes each number down. They swap roles and the second learner gives (different) numbers, while the first learner writes them down. Together they compare what their partner wrote with the original numbers they had. **Exchanging telephone numbers (Entry 2)** • Learners work in pairs. One has several numbers to read out to the other. The second learner writes these down. They swap roles and the second learner gives (different) numbers, while the first learner writes them down. Together they compare what their partner wrote with the original numbers they had. • This activity could also be done using other everyday sequences of numbers, if appropriate, such as numbers in the format of typical bank account details or National Insurance numbers. **Reading and remembering numbers (Entry 2)** • As a group, discuss ways to divide numbers up to help read them (if giving them to other people) or to help in learning and remembering them. Is it best to divide them into chunks of two, three or four digits? Try different options and see what different learners prefer. Talk about ways to look for patterns in different numbers to help to remember them – and that this might influence the number of digits you put together in chunks. Give examples and model this. • Discuss and share any other strategies learners use to help them remember important numbers. Stress the importance of keeping certain personal information safe from other people, e.g. your PIN number. If you can't remember a number and want to write it down to remind yourself, what can you do to help make it safer?	• Sets of numbers between 0 and 10 for learners to exchange. • Two sets of telephone numbers for learners to exchange.

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Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Checking items in stock (Entry 2)** • Learners work in pairs, but this time they have stock codes and numbers of items of stock to exchange. One learner has a list of the stock items (not in numerical order) and how many of each are in stock. The other has a list of just the stock numbers (listed in numerical order) for different items. They have to find the item given using its stock number and mark beside it how many of that item are in stock. Start this activity with short stock code numbers and small numbers of items. You can build up to bigger numbers if appropriate. **Taking orders (Entry 2)** • Using a takeaway menu or similar, divide learners into pairs to write down the orders for several meals by using the list to identify the individual items ordered. e.g. If part of the order is number 32, they would look up and note down what dish that is. **Sort them out (Entry 2)** • In pairs, give learners some data to sort into numerical order, e.g. stock codes, postcodes, National Insurance numbers, employee numbers, etc. Ask them to check their ordered list against a sorted version of the same numbers. **Extension of 'Sort them out'** • With learners with more skills, you could ask them to sort addresses, sorting them into different streets and then by odd and even numbers within each street.	• Stock lists giving codes of items. • Stock record sheet showing for different items how many are in stock. • Takeaway/restaurant menus and lists of orders. • Lists of relevant numbers for learners to sort into numerical sequence.

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and to build their confidence in working out different types of calculations.	**Join them together (Entry 1)** • Check that learners are confident with the idea of using 'counting on' and discuss in the group how they (can) use this when adding two sets of things together. For example, if two families come together for a trip, you start from the number in one family to count on to add up the total number of entrance tickets needed. e.g. If I have a family of 5 and my friend has a family of 3. *The total number of tickets we need is my family = 5 6 7 8.* • At Entry 2, apply this same idea to count on to work out/check change. **Check them off (Entry 1)** • Discuss with learners examples of situations when they need to check they have the right number of items or people. For example, on a trip (checking if the right number of people have got on/off a coach, checking items of luggage) or for a meal (checking if there are enough places for everyone and if everyone has a portion for each course). **Extension of 'Check them off' (Entry 2)** • In small groups, ask learners to check food orders against the number of people in different groups. Sort the food for each group in order by course and then check that there are the right number of starters, main courses and sweets for each group. What would they do if the numbers didn't match the number of people in a particular group?	• List of the names of people in a group. • List of the orders for the whole group (mixed up).
Problem-solving/ investigations – to develop learners' awareness of the relationships between the operations.	**Ordering instructions (Entry 1)** • In pairs or small groups, ask learners to order a set of mixed up instructions or activities in a sequence (e.g. daily routine), using the numbering on them to help. Learners have a sequence with each numbered item on a different card. Working in small groups one learner takes out one of the cards in the sequence and the others then have to decide which is missing (and, if appropriate, what that instruction/ activity might be). Learners then check with the learner who has the missing card.	• Sequence of instructions, activities or directions on separate cards for learners to re-order.

Teaching approach	Teaching and learning ideas	Resources
Problem-solving/ investigations – to develop learners' awareness of the relationships between the operations.	**Showing the sequence of things (Entry 2)** • Encourage learners to look at notices and signs they frequently see and to highlight examples of numbers in words or digits. As a group, discuss how sometimes people use roman numerals to number things and, working together, see if the group can order these into a sequence. Discuss also how sometimes other words are used in written text to indicate a sequence of things, e.g. firstly, next, lastly. Encourage learners to search for examples of these in appropriate texts. **Finding information (Entry 2)** • It might be useful to discuss as a group, and to model to the group, how you can work out roughly where in the book to look for information by looking at how many pages there are, and working out what will be halfway. e.g. Supposing the book is 600 pages, so halfway is about 300. If I want page 433 it will be past halfway. If I open the book at page 560, 433 will be **before** that. • Using a book index, learners work in pairs or small groups to identify which section or page number they need to look at to find information about specific topics. e.g. Learners could use the Yellow Pages to look up vets by having a copy of the appropriate page of the index with several items highlighted, one being 'Veterinary surgeons'. They use this to look up the appropriate page and then try to find a vet with a phone number local to them (their local STD code) and write down the name, address and number. **Introducing tallies (Entry 1)** • Introduce the idea that people sometimes use a tally system to keep track of the number of things. Show learners how to mark things in a tally using groups of five. Check learners are confident that two fives add up to make a total of ten. Encourage them to practise making tallies of up to ten to match groups of items provided and to check (and correct) existing tallies against numbers of items provided in a group. Ask learners to convert tallied amounts into numerals (and words, if appropriate).	• Examples of text that include sequencing words. Simple narrative versions of instructions or directions. • Yellow Pages or other suitable directories or books with an index.

Teaching approach	Teaching and learning ideas	Resources
Problem-solving/ investigations – to develop learners' awareness of the relationships between the operations	**Tallies (Entry 2)** • Discuss situations when people use a tally system marking things in groups of five. Check learners are confident at counting in fives to add up this type of tally. Encourage them to practise making tallies of this sort for relevant contexts and to count up pre-existing tallies, e.g. the stock checking activity above could be adapted to show tallies for the number of items of stock left. **Dates and times (Entry 1)** • Using a numbered list of months (or calendar/diary, if appropriate) encourage learners to identify the order of given months. Look at whether certain months are 'before' or 'after' a particular one, e.g. is March (3) before or after August (8)? • Using a clock face or simple timesheet showing 1–12, encourage learners to put activities in order of time. **Dates and times (Entry 2)** • Using a calendar/diary encourage learners to identify the order of given dates (given in the format that gives the months as a number, e.g. 23/6/89). Order a sequence of birth dates to put a group of people in order of their age. • Look at whether certain given dates are 'before' or 'after' a particular one, e.g. a learner's own birthday. • Using a daily diary or timesheet, encourage learners to put activities in order of time, e.g. putting appointments into a booking sheet.	• Simple calendar/ diary/list showing the twelve months. • Clock face/timesheet showing each hour over a twelve-hour period. • Variety of diaries, calendars, timesheets and appointment sheets.

Teaching approach	Teaching and learning ideas	Resources
Integration of IT	• Using a spreadsheet will enable learners to sort numbers into ascending or descending order, which may be useful in self-checking their answers to activities that include sequencing numbers. • In a wordprocessing application they can use the 'Word count' function to check entries in a list against the number of items, e.g. items in a shopping list, number of people listed by name. Similarly they could use the 'Format number' function to count up the number of entries, if each is on a new line, e.g. food orders. They could use these to check if the number of orders and people tally, for example. • They can use the calendar in Microsoft® Outlook to explore some of the activities around date and time.	• IT with spreadsheet and a wordprocessing application.
Embedded/ contextualised activities – to encourage learners to practise/use the skills they are learning in contexts most relevant to them.	• These foundation skills are important in a number of everyday situations and to the development of skills and confidence in other areas of maths. Everyday and work contexts in which these skills may typically arise include: phone numbers, stock codes, catalogue codes, food bar codes, finding addresses, checking numbers of people/items in specific situations, finding information in directories/libraries, etc.	• Embedded Materials: Family Health – FH 2:6 (p. 95), FH 2:12 (p. 107) • *Skills for Life* Learner Materials – *SfL* LM/NE1 Unit 4
Application of skills – to build learners' confidence to apply the skills they are learning in real life contexts and to reflect on this.	• Ask learners to make a note of examples of situations where they see numbers used as codes or of numbers longer than four digits. Discuss these as a group in the next session. • Encourage learners to identify personal numbers it would be useful to remember. Discuss the importance of keeping personal information such as PIN numbers, account details, etc., safe.	