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.

Halves and quarters

Curriculum reference: N2/E2.1

Context: There are many everyday phrases that involve 'half' (and to a lesser extent 'quarter') and learners can use their work/life experience to help them understand these simple fractions. They may also need to divide items or amounts into halves or quarters – or to describe the proportions of different parts that make up a half or a quarter of a whole.

Teaching approach	Teaching and learning ideas	Resources
Whole group warm up/mental maths activities – to get the learners active and build their confidence with working with halves and quarters.	**Number trails** • Teacher creates a short sequence of cards, each with the answer to a question on it and a new scenario. The next card in the sequence gives the answer to the question and sets a new question. The final card in the sequence gives the question that matches the answer on the first card. • Mix up the cards and give one or more cards to each learner. One person (possibly the teacher) reads out their question and the person who has the answer to that question calls out the answer and then reads the new question from their card. To complete the trail all learners should get a go. e.g. Answer: 12 Next question: What is half of £6? *The learner who has a card with the answer £3 should stand up and then read out their new question.*	• Number trail sequence(s) involving halves and quarters.

Teaching approach	Teaching and learning ideas	Resources

Whole group warm up/mental maths activities – to get the learners active and build their confidence with working with halves and quarters.	**Same or not?**
	• The teacher gives more than one calculation. Learners have to indicate if the two are the same or not. They could do this by calling out, visually indicating (e.g. thumbs up/thumbs down), or by writing 'Same'/'Not same' on an individual whiteboard.
	
	    e.g. *half of 12* *2 x 3*
	
	Variation on 'Same or not?'
	• The teacher writes sets of four fractions on the whiteboard (one set at a time) and the learners have to pick the 'odd one out'.
	
	    e.g. *half of £16* *£8 + £8*
	                  £4 x 2 *£16 ÷ 2*
	
	Which is bigger?
	• The teacher gives two amounts involving fractions. The learners have to choose which they think is bigger and indicate this, e.g. visually by holding out the appropriate hand to show left/right.
	
	    e.g. *quarter of 12* *half of 16*
		• Individual white boards and wipe off pens, if required.
		
		• Whiteboard

Teaching approach	Teaching and learning ideas	Resources
Discussion and work in pairs/small groups – to get learners involved in practical activities to build their skills using halves and quarters, so they feel able to use them in everyday situations	**Fractions in everyday use** • Discuss examples of when we use fractions in common phrases, e.g. 'half time', 'half full', 'quarter of an hour'. As a group, collect as many examples as possible. Discuss how much these amounts are for different examples, e.g. half time in football is 45 minutes (half of 90); in rugby it is 40 minutes (half of 80). • As a group, make up a table giving half (and quarter) of the common amounts that arise from the discussions. The examples that learners come up with will depend on their context and life experience, e.g.	• Examples of everyday materials showing examples of 'half' and 'quarter'. • Strips and circular scales showing half and quarter points. • Examples of scales, measuring jugs, tape measures, etc., might be useful.

		Half	*Quarter*
Hour	60 minutes	30	15
Metre	100 cm	50	25
Pound (lb)	16 oz	8	4

• Discuss with learners when and where we see or use fractions in everyday/working life. Ask learners to look for examples of fractions between sessions and bring in appropriate materials/examples, e.g. sale notices, adverts, etc. Discuss these as a group. What fractions are most common in the context(s) learners are involved in?
• Discuss how learners approach dividing into half/quarter, e.g. measure it, estimate, use trial and error, find a quarter by dividing in half and then in half again. When does it matter if you divide accurately and when is it not so important?

Teaching approach	Teaching and learning ideas	Resources
	How many? • Look at typical items made up of a numbers of parts, e.g. chocolate bars made up of individual chunks, food items divided into portions, packs of chocolate biscuits, etc. How many parts will each person get if there are only two of you? What if you are dividing between four people? e.g. If a chocolate bar has 20 blocks, how many will each person get in each case? *Relate this to half and a quarter of the number of blocks: ½ of 20 is 10, ¼ of 20 is 5. Explore this for bars containing different numbers of blocks.* **Scales and gauges** • Use strips of cards marked to show halves and quarters. Ask learners, working together in pairs or small groups, to mark in the half and quarter amount for different everyday examples. Encourage learners to think about length, weight, capacity and any scales or gauges they might see/use. e.g. *If the strip represents one metre, what would be half way?* *What about the petrol gauge in your car? How many litres make up a full tank? What's half a tank?* • Use circles with a scale marked round the edge to show the half and quarter points. Use this to explore similar ideas, including time and weights.	

Teaching approach	Teaching and learning ideas	Resources
Problem-solving/ investigations – to develop learners' awareness of the relationship between halves, quarters and whole parts, and to link to future skills/topics.	**Part of a whole** • Have available a range of different shapes such as long strips of card, rectangles, squares, triangles, hexagons and circles. As a group, discuss how it is easier to divide some shapes into a half or quarter than others. Which are the easy shapes and why? • Encourage learners to fold card/paper to work out a half (and a quarter) of different shapes. Can some shapes be folded in different places to divide in half while others have to be folded in the same place? • Learners could try dividing the shapes into halves or quarters and then cut up the parts to check how similar the sections from one shape are. • What about dividing irregular shapes? Discuss how you could approach this.	• Card/paper cut into a variety of shapes.
Integration of IT	• Use spreadsheets of different examples of data, e.g. number of men/women in a group, numbers of residents in different age groups (under 25, 25–50, 50–75, 75+) in a road. Encourage the learners to use software to explore how different sets of data can be represented as a pie-chart (or a bar-chart). Start by providing data (or ask learners to work out the amounts) in which the proportions are halves/quarters of the total. • Later, if appropriate, encourage learners to comment on more varied data in charts by using phrases such as 'a quarter of', 'slightly more than a half of', 'about a quarter of'. • Use simple graphics software (e.g. Paint) to create, divide and colour simple shapes into halves and quarters.	• IT and appropriate spreadsheet applications. • Simple graphics software

Teaching approach	Teaching and learning ideas	Resources
Embedded/ contextualised activities	• Learners may be dividing items or quantities into two or four parts in a range of contexts, but may not make the connection between this and 'working out a half' (or quarter). Typical examples include sharing food between people, special offers in the shops, using spatial skills in horticulture, using time in sports contexts, cooking and medicines, etc.	• *Skills for Life* Learning Materials: *SfL* LM/NE2, Units 2 and 3. • Embedded Materials: – E2E, Ee 4:11 (booking appointments) – Family health, FH 1:12 (keeping appointments), FH 2:19 (shopping for value).
Application of skills	• Encourage learners to keep a log of everyday activities/phrases they encounter over a couple of weeks that involve 'half' or 'quarter' – or other common fractions. As a group, discuss the question: How common are fractions in everyday/working life?	