

Lesson plan

Converting between metric and imperial units

1. Lesson objectives

- Use graphs and ratio tables to convert between units of measure
- Understand how to use double number lines to provide insight into solving conversion problems
- Use approximation to check conversion calculations

2. Functional Skills Level 2 curriculum

Measures, shape and space

14 convert between metric and imperial units of length, weight and capacity using
a) a conversion factor and **b)** a conversion graph

3. Lesson plan

This is an overview of the lesson. More notes can be found in the notes in the lesson slides.

Activity	Purpose of this activity	Time (min)	Guidance	Materials
Introduction	To introduce the concept of converting between metric and imperial units and to assess prior knowledge	15	Introduce the context of the lesson and the objectives. Check learners' knowledge of the units on a tape measure, and how it can be used to show approximate equivalence between metric and imperial units. Make the link with a ratio table and how this can be used to calculate approximate equivalences.	Slides 1–3 Mini whiteboards
Explore 1	To carry out a collaborative exploration and the use of graph to develop the construction/use of double number lines	20	In pairs, using the graph provided, learners calculate how much 500 cm is in inches and are asked to construct tables or to use a double number line to explain their thinking. This graph activity is an important building block for the construction and use of double number lines. Blank or partially filled tables can be used for differentiation – as scaffolding – if required.	Slide 4 Unit conversion graph handout Mini whiteboards
Discuss	To explore problem-solving approaches using a double number line	10	Groups give feedback on how they calculated the conversion of 500 cm to inches. You can demonstrate this for learners using the table and double number line, either on the whiteboard or by using an app (for example, GeoGebra).	Slides 5–8 GeoGebra (optional)

Activity	Purpose of this activity	Time (min)	Guidance	Materials
Explore 2	To reiterate the concept of converting between units and to highlight common misconceptions	10	This is a 'spot the mistake' activity, to highlight misconceptions. Learners work independently at first, then share their work and ideas. They discuss and explain.	Slides 9–10
Explore 3	To extend the approach to two-stage questions and other metric–imperial conversions	15	This question builds on the previous question and extends the approach to calculations involving gallons per mile and conversions between gallons and litres. This also introduces a two-stage question.	Slides 11–13
Practice	To apply the learning to an exam question	15	Learners work independently. Depending on time and ability of learners in the group, you may choose to do only one or two of questions with the class. When they have completed the questions, ask learners whether they have used a different approach when converting between metric and imperial units to that used prior to the lesson. How has their thinking changed? What have they learned about multiplicative structure? Discuss where else this approach may work. Where have they used it before? Where would they use it in future?	Slides 14–21 Exam questions handout
Review	To review the lesson and recap what has been covered	5	Ask learners to identify what has been discussed during the lesson.	Slide 22