Lesson 11 Overview

Factors and multiples

Activity	Time (min)	Description/Prompt	Materials
Introduction	10	Begin the lesson by checking students' understanding of the terms 'factors' and 'multiples' to provide you with some understanding of what they already know. Introduce the context of chocolate bars and show students a '6 by 4' 24 piece chocolate bar (referred to as a 24-bar). Ask students to work in pairs to find other possible configurations of 24-bars. Students use the context of a 24-piece chocolate bar (24-bar) to explore the factors of 24.	Mini whiteboards Squared paper (optional) Slides 2–4
Discuss	10	Ask students with different rectangular arrays to share their thinking. Discuss how finding all possible 24-bars gives the factors – and factor pairs – of 24, emphasising how the relationship between factors and multiples is evident in the dimensions and area of a rectangular array. Exploring this connection supports students in developing an understanding of mathematical structure.	Slides 5–8

Explore	40	Introduce the context of packing chocolate bars in trays. The trays are represented as labelled rectangles rather than rectangular arrays. This exposes the direct connection with the two dimensional area model and supports students in making connections between different mathematical concepts. Ask students to work in pairs on the main task, taking turns when completing the 'Chocolate factory' handout, to encourage a collaborative culture where students work together and share their understanding. Students find the dimensions of a 96-tray that can be used to pack different 24-bars. They then explore trays that can be used to pack both 24-bars and 30-bars.	'Chocolate factory' handout Squared paper (optional) '24-bars' and '96-trays' handouts (optional) Slides 9–19

Review	20	Once students have completed the tasks, hold a class discussion. Ask a pair of students (identified as you circulated during the exploration activity) to describe their approach to the 'Chocolate factory' tasks and explain their thinking. Discuss different approaches and identify any common understanding. Reinforce key mathematical concepts that students have been working with. Students may want to find out whether their chosen tray is correct, but the focus of this discussion should be on the connections made and any struggles they faced.	Slides 20–27
Practice question	10	Distribute to each student a copy of the 'Practice question' handout (or display the question on the board). Give students a couple of minutes to work on the question individually and then discuss their thinking.	'Practice question' handout Slide 28