

Prisms and cylinders · Learner workbook

Pearson Edexcel GCSE Mathematics 1MA1 · L035 · Week 12 · 60 minute lesson

Connect & Check → Share → Present → Apply → Recall & Review

Calculate prism and cylinder volumes from cross-sectional area and length.

Share | In pairs, predict the first step for this problem: A triangular prism has cross-section base 6 cm and height 4 cm, with length 10 cm. Find its volume. Compare your reasons before using the worked model.

Present a worked example and explain

A triangular prism has cross-section base 6 cm and height 4 cm, with length 10 cm. Find its volume.

Apply independently

A cylinder has radius 3 cm and height 8 cm. Give its volume exactly.

Apply and justify

A prism has volume 210 cm^3 and cross-section area 15 cm^2 . Find its length.

Optional extension: stretch and challenge

Choose these when the independent work is secure. Show a method and justify the answer.

Stretch

A prism has a trapezium cross-section with parallel sides 4 cm and 8 cm and height 3 cm. Its length is 11 cm. Find the volume.

Deep challenge

A cylinder and a triangular prism both have cross-sectional area 24 cm^2 and length 7 cm. Compare their volumes and explain.

Recall & Review without notes

Return to the Apply question with a fresh method or check. Record a corrected error and a question for the next lesson.

Recall & Review: feedback and extension integration

Lesson L035: Prisms and cylinders

Objective: Calculate prism and cylinder volumes from cross-sectional area and length.

Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain one check, correct one error and record the next practice step.

What Went Well (WWW)

I selected the correct geometric fact, theorem, formula or transformation and used a clear diagram with appropriate labels and units.

Even Better If (EBI)

I will name the fact or theorem, show the substitution or construction step and check whether the size, direction and units of the result are reasonable.

Integrated stretch and deep challenge

Stretch: A prism has a trapezium cross-section with parallel sides 4 cm and 8 cm and height 3 cm. Its length is 11 cm. Find the volume.

Deep challenge: A cylinder and a triangular prism both have cross-sectional area 24 cm^2 and length 7 cm. Compare their volumes and explain.

My next-step response
