Understand the assumptions and conditions that make an investigation or model valid.

Key knowledge | Free preview

Learning target: Understand the assumptions and conditions that make an investigation or model valid.

A practical geometry model should connect the objective to measurable constraints. Use volume to test capacity and exposed area to estimate material, keeping units consistent. Simplifying assumptions such as zero wall thickness and ideal shapes should remain visible. Comparing two feasible designs is different from proving an optimum among every possible design.

Try the mathematics

Task 1. Two closed cylindrical containers have dimensions A: radius 3 cm, height 10 cm; B: radius 4 cm, height 6 cm. Required capacity is at least 290 cm^3. Compute volumes and total surface areas and choose the feasible option.

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/aspire-internal-gm-u2-o2-cross-kk-04/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Unit 2; Outcome 2; Key knowledge; bullet 4; p. 40.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u2-o2-cross-kk-04. This is an internal identifier, not an official VCAA code.

Free preview: share intact with attribution, without charging. Full resource rights are not included.

Original independent practice. Not published or endorsed by VCAA. The activity is not an official SAC, examination or complete treatment of every clause of a broad curriculum requirement.