Solve problems involving the volume and surface area of right...

solve problems involving the volume and surface area of right prisms and cylinders using appropriate units

Learning intention

- solve problems involving the volume and surface area of right prisms and cylinders using appropriate units

Teach and model

- analysing nets of objects to generate short cuts and establish formulas for surface area
- determining the amount of material needed to make can-coolers for a class fundraising project and working out the most cost-efficient way to cut out the pieces
- finding different prisms that have the same volume but different surface areas, making conjectures as to what type of prism would have the smallest or largest surface area

Check understanding

- Explain the main idea in solve problems involving the volume and surface area of right... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.