Understand the general mathematical form of the unit’s models and techniques.

Key knowledge | Free preview

Learning target: Understand the general mathematical form of the unit’s models and techniques.

A network model depends on its objective. A minimum connector chooses a tree linking all required sites, while a shortest route concerns a specified journey. Interpret edge weights as the correct cost or distance, check whether direction matters and explain why the chosen algorithm matches the question. A mathematically optimal answer is conditional on the graph containing the available options.

Try the mathematics

Task 1. A campus network has edges AB=4, AC=2, BC=1, BD=5, CD=7, CE=3 and ED=1. First find the least total cable length connecting all sites. Then find the shortest walking distance from A to D, using the same weights.

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-u34-o2-cross-kk-03/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Units 3–4; Outcome 2; Key knowledge; bullet 3; p. 92.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u34-o2-cross-kk-03. 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.