Choose matrix or network methods for an extended contextual investigation.

Key skills | Free preview

Learning target: Choose matrix or network methods for an extended contextual investigation.

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-ks-03/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Units 3–4; Outcome 2; Key skills; bullet 3; p. 93.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u34-o2-cross-ks-03. This is an internal identifier, not an official VCAA code.

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