Solving an applied calculus problem

Key skills | Free preview

Learning target: Use computational thinking, algorithms, models and simulations to solve a contextual problem.

A technology-assisted solution should connect the context, model, computation and interpretation. State the variable and its valid domain before choosing an algorithm. Record enough inputs and settings to reproduce the result, then test it independently. Rounding is a final reporting decision; it should not replace the more accurate internal values needed for verification.

Try the mathematics

Task 1. Use technology to solve the pump problem $R(t)=t\,e^{(-t)}$ on $[0,4]$. Give the maximum rate and total volume, then explain why the two outputs have different units.

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-mm-u34-o3-ks-01/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 3; Key skills; bullet 1; p. 104.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o3-ks-01. 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.