Explain computational-thinking methods and their role in mathematical investigation.

Key knowledge | Free preview

Learning target: Explain computational-thinking methods and their role in mathematical investigation.

Matrix-capable technology can generate many states quickly, but a clear state convention and a correct update order are essential. A table exposes convergence more clearly than a single large power. Verify an early step manually and check preserved quantities such as a closed population total. Apparent numerical steadiness should be interpreted relative to a stated tolerance. Abstraction keeps state totals and transition rates; decomposition separates inputs, iteration and checking.

Try the mathematics

Task 1. Enter T=[[0.75,0.25],[0.25,0.75]] and column S0=[[160],[40]] in a matrix tool. Generate S(n+1)=TS(n) for n=0–4, then compare with T^5 S0. State the expected states.

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-o3-cross-kk-01/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Units 3–4; Outcome 3; Key knowledge; bullet 1; p. 93.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u34-o3-cross-kk-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.