Explain abstraction, decomposition, pattern recognition and algorithms in mathematical investigations.

Key knowledge | Free preview

Learning target: Explain abstraction, decomposition, pattern recognition and algorithms in mathematical investigations.

Computational thinking separates a model's state, inputs and repeated update. A spreadsheet makes each iteration visible, but its cell formula must reproduce the intended recurrence and starting index. Keep parameters in labelled cells, check early rows by hand and explain what each output means. The instructions below specify expected results; they do not claim a particular device was operated.

Try the mathematics

Task 1. Model V0=2000 and V(n+1)=0.9V(n)-50. In a spreadsheet put n=0 in A2, 2000 in B2, =A2+1 in A3 and =0.9*B2-50 in B3. Fill A3:B3 down to row 6. Report the values and describe the decomposition and repeating step.

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-u1-o3-cross-kk-01/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Unit 1; Outcome 3; Key knowledge; bullet 1; p. 33.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u1-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.