With and without replacement

Key skills | Free preview

Learning target: Design simulations that estimate selection probabilities with and without replacement.

Replacement changes the second-stage probabilities. A valid digital simulation must update the available composition after a draw when replacement is absent. Use independent uniform numbers for successive draws, but apply the correct threshold at each stage. Short run estimates can differ from exact probabilities; that variation is expected and does not by itself indicate an error.

Try the mathematics

Task 1. A bag has two red and one blue ball. Give a uniform-number simulation for two draws with replacement and for two draws without replacement. Find the exact probability of two reds in each case.

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-u2-o1-ks-14/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Unit 2; Outcome 1; Key skills; bullet 14; p. 55.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u2-o1-ks-14. This is an internal identifier, not an official VCAA code.

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