

# BIFOLD BOXES: Sequence Overview

## Summary of learning goals

Students use proportional reasoning to explain how changing the size of a square will affect the size of a box folded from that square.

**Australian Curriculum: Mathematics (Year 5)**

**ACMMG111:** Connect three-dimensional objects with their nets and other two-dimensional representations.

**ACMMG115:** Apply the enlargement transformation to familiar two-dimensional shapes and explore the properties of the resulting image compared with the original.

## Summary of lessons

**Who is this Sequence for?**

Students familiar with calculating and comparing areas of shapes.

**Lesson 1: Bifold Boxes**

Students fold origami boxes from proportional paper squares and compare the dimensions of the boxes.

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We value your feedback after these lessons via our website.

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## Reflection on this sequence

### Rationale

In this task students draw on their knowledge of three-dimensional objects and explore their nets in a whole new context. This task requires students to recognise when two measures are proportional. They are encouraged to physically manipulate their paper squares and origami boxes to recognise and demonstrate proportional relationships.

### reSolve Mathematics is Purposeful

- Students recognise a proportional relationship between area and volume. Students use this relationship to make predictions and to form explanations.

### reSolve Tasks are Inclusive and Challenging

- Many ways for students to explore the relationship between the dimensions of the paper and the boxes, including arithmetic, geometry, and physical manipulation.
- Students engage in a hands-on task, with multiple methods of instruction for origami folding provided.

### reSolve Classrooms Have a Knowledge Building Culture

- Students make different findings and compare across class.