

Summary of learning goals

- Students explore the various possibilities for constructing a circular three-pattern using two different colours. They discover that, although the three-patterns may at first look different, they form identical circular patterns.
- Students then create different circular four-patterns and identify similarities and differences between these patterns.

Australian Curriculum: Mathematics (Foundation)

ACMNA005: Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings.

Summary of lessons

Who is this sequence for?

- Foundation students with experience in copying, continuing and creating repeated patterns.
- Students should be familiar with describing patterns and naming them based on the number of elements in the pattern.

Lesson 1: Three Pompoms

The task uses the context of decorating party hats to explore patterns forming a circle. Students look at different arrangements of three pompoms and what patterns are produced when the three pompoms are repeated to make a circle. Students create their own patterns using two green pompoms and one blue, and discover that all possible arrangements look the same when repeated in a circle.

Lesson 2: What About Four?

Students look at the ways four pompoms can be arranged to form a repeating pattern around the base of a party hat. Students recognise the similarities and differences between the various circular patterns.

Reflection on this sequence

Rationale

Children have an intuitive sense of pattern and enjoy creating and exploring patterns of all kinds. The regularity of patterns allows students to explore the structure in mathematics, particularly structure related to number. Understanding pattern is essential to developing concepts related to skip counting, unitising, multiplication and division, and is the foundation of algebraic reasoning.

This resource explores repeating patterns that are constructed using colour. Students are asked to explore the different three- and four-patterns that can be made with a given number of colours, and to identify similarities in the patterns by repeating arrangements around a circle.



reSolve mathematics is purposeful

- Repeating patterns are an important part of early algebraic reasoning.
- Students draw on a context for patterns that can be easily imagined.



reSolve tasks are inclusive and challenging

- The context of a party hat is familiar to students and can be easily imagined and constructed.
- Students use counters to explore possible patterns, enabling them to experiment with different combinations and changing their working as needed.
- Students are challenged to consider the underlying structure of patterns to identify how they are similar and different. They are challenged to find all possible patterns using three or four colours arranged in a circle.



reSolve classrooms have a knowledge-building culture

- Different students will construct different patterns. The collective work of the class allows for a comparison of similarities and differences between the patterns.