

Repeating patterns with colour and shape

Repeating patterns are patterns that have a 'repeating unit' or 'unit of repeat'.

If the objects in the pattern are an identical shape (e.g. beads), the repeating unit might be defined by colour. For example, in the pattern red-yellow-red-yellow-red-yellow, the repeating unit is red-yellow.

If the objects in the pattern are different shapes, an example pattern might be square-oval-square-square-oval-square-square-oval-square. In this example, the repeating unit is square-oval-square.

Understanding non-number patterns such as these can support learners later to notice repeating elements in the number system such as odd-even-odd-even.

In these activities, students explore the attributes of colour and shape and apply these to interpret, continue and create repeating patterns.



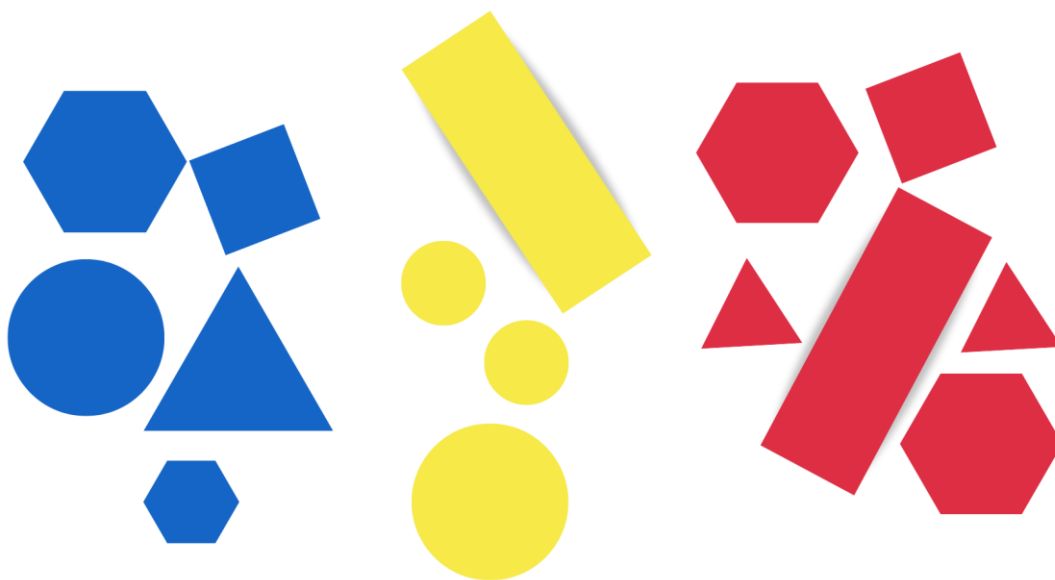
Part 1: Sorting

Teacher notes

Set up: Give pairs of students a set of about 20 objects. These can be collections of small toys (such as teddies or dinosaurs), attribute blocks or container lids.

Explore: Ask students to sort the objects into groups according to an attribute of their choice. The grouping of toys may be based on colour, size or type, while the grouping of attribute blocks may be based on colour, shape, size or thickness. For the lids, the groupings may be based on material (eg plastic or metal) or shape (eg rectangular or round).

Give students opportunities to describe the basis on which they sorted their objects. This helps to develop their language of attributes of shape (eg triangles, squares, circles), colour (eg red, yellow) and size (eg small or large).





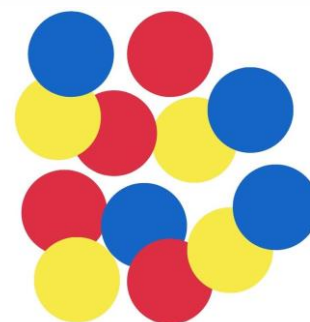
Part 2: Recording patterns

Teacher notes

Why this activity: This activity improves students' fine motor skills, emphasises that writing conventionally begins on the left and moves horizontally across the page as well as strengthening awareness of pattern.

Materials:

- Blank page
- Coloured pencils, or coloured circle stickers, or coloured paper circles and paste



Explore: Give students a number of coloured circle shapes and ask them to make a pattern.

The pattern can be recorded in one of three ways:

- pasting coloured circle stickers onto a piece of paper
- colouring circle shapes drawn on paper
- drawing and colouring their own circles

This activity can be repeated using different shapes such as triangles and squares or combinations of shapes.



Part 3: Forming and extending patterns

Teacher notes

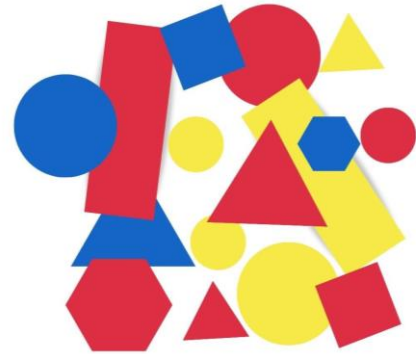
Set up: Give students attribute blocks.

Explore: Ask them to make a pattern. Some students may choose a pattern based on shape (triangle, square, circle, triangle, square, circle ...) while others may choose a pattern based on colour (red, blue, red, blue ...).

Invite students to explain the basis on which they built the pattern. Encourage them to state the attribute as well as describe the sequence of blocks.

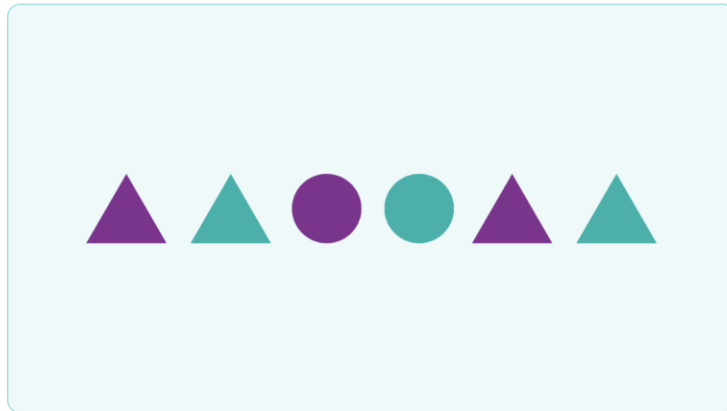
Now ask students to make a new pattern, swap them and try to extend each other's patterns. Support students to recognise and extend the patterns that others have created. Describing and explaining to each other is the key purpose of the activity.

For the pattern below, a student may choose to focus only on shape (ignoring size and colour) and say, 'My pattern keeps going triangle, square, circle. I chose them because of their shape.'

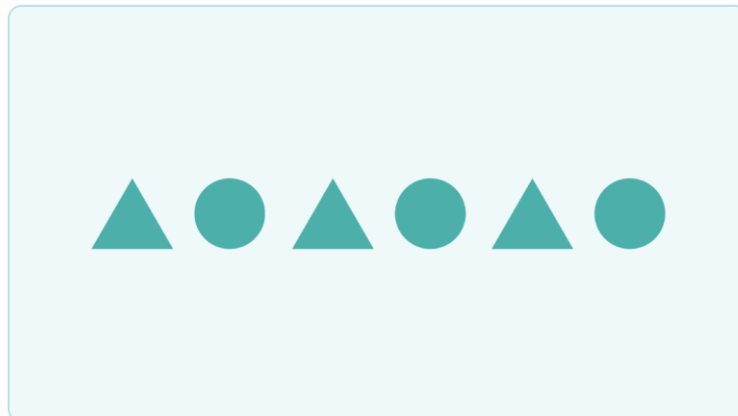




Some students may be able to combine two different attributes in their pattern. In the pattern below, the colours are red, yellow, red, yellow... and the shapes are triangle, triangle, circle, circle....



If students have difficulty focusing on a stated attribute in a pattern, give them a limited set of blocks. If the colour and the size are the same then students can focus on the shape. For example, *'My small green shape pattern is a triangle, then a circle, then a triangle, then a circle.'*





If the blocks are the same colour and shape students can focus on the size. For example, *'My pattern is a small square then a medium square then a large square.'*

