



Patterns – Identify the Repeat

P.3.5

Word Wall: pattern, repeat, copy, create, identify, sort, classify, pattern of two, pattern of three, pattern of four

Introduction

Students will copy, continue, create and identify the repeating part of a pattern.

Resources

- Collections of real world materials, for example: buttons, leaves, shapes, counters, plastic fruit, stones, beads.
- Bracelets (party favours) or large rubber bands or paper plate with centre cut away.



Time / Classroom Organisation

This activity may be introduced in a small group as a 20 minute focused teaching and learning event. Students should also be given opportunities to play with the resources, making their own repeating patterns and identifying the repeating part.

Australian Curriculum---Year Prep

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

Proficiency Strand:

Fluency – continuing patterns
Reasoning – creating patterns

Activity Process--- Identify the Repeat

1. Using the real world materials, create a simple ABABABAB repeating pattern. Ask the students to copy the pattern.



2. Ask: *What part of this pattern is repeating?* Physically separate the pattern into its repeating elements:



3. Place a ring around the repeating elements



4. Ask the students to place rings around the repeats in their patterns.
5. Ask: *How many repeats are in this pattern?* (4). Count each repeat with the students.
6. Say the repeating pattern pausing for the repeat: *blue orange.....blue orange.....blue orange.....blue orange.*
7. Ask: *How many elements (things) are in each repeat?* Stress that it is a 2 2 2 2 pattern.
8. Encourage the students to make other AB (2) patterns using different materials. Repeat the process of separating the repeating elements and counting how many repeats and how many elements.
9. Repeat the above sequence for patterns with three elements, for example: ABBABBABBABBABB

Source: E deVries and E Warren, 2009

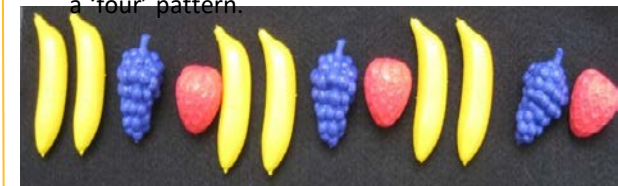
10. Repeat the above sequence for patterns with three elements, for example: ABBABBABBABBABB



Source: E deVries and E Warren, 2009

Activity Process---Two, Three and Four Patterns

1. In pairs, students make a 'two' pattern by placing two different coloured counters beside each other and repeating these several times.
2. Students name the pattern as a 'two' patterns, as there are two elements that repeat.
3. Students are then asked to make a 'three' pattern by placing three different coloured counters beside each other and repeat this several times.
4. Students name the pattern as a 'three' pattern by placing three different elements that repeat.
5. The students are then asked to make and name a 'four' pattern.



source

http://k6.boardofstudies.nsw.edu.au/files/maths/maths_k6_ws.pdf



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Variations & Extensions

1. Patterning with a base plate

Resources: Base plate, counters or paddle pop sticks



- Make an AB pattern on the base plate.
- Ask the students to copy your pattern. Starting from the left, 'read' the pattern pausing for the repeat.
- Count the number of repeats
- Count the elements in each repeat
- Join on another base plate on each end and continue the pattern both ways.



Source: E deVries and E Warren, 2009

2. Printed patterns

Resources Paint, stamps, paper.

Create patterns using paint and stamps. Ask students to draw a circle around the repeat. Discuss the number of repeats and the number of elements in each repeat.



Digital Resources

<http://www.ideal-resources.com.au/index.php>

	Circle Patterns (Preset) Continue the pattern by selecting a colour and then clicking on a coloured bead.
	Circle Patterns (Create) Talk about, recognise and create patterns within these interactive activities. Select a colour and then click on a bead. Create a pattern by repeating this process.
	Shape Patterns (Preset) Continue the pattern by selecting a colour and a shape then clicking on an uncoloured bead.
	Shape Patterns (Create) Select a colour and a shape and then click on a bead. Create a pattern by repeating this process.

Contexts for Learning

Play:

Use dyed pasta or coloured beads and ask students to create necklaces or bracelets that have a repeating colour pattern.

Investigation:

Go on a pattern hunt around the school. Take photos of the patterns that you can see and make a class book about patterns in the school.

Real life experience:

Have a pattern day at school, where students are required to wear clothing that has a repeating pattern on it.

Routines and Transitions:

When lining up ask students to organise themselves into a pattern (girl, boy, girl, boy or girl, girl, boy, girl, girl, boy)

Assessment

Using real world materials, create a simple ABABAB repeating pattern:

Ask: *What is the repeating part of the pattern? How many repeats are there? How many elements are there in each repeat?*



Background Reading

Students are most likely to recognise the significance of pattern when their attention is regularly drawn to it in the context of real life situations, play and investigations as well as the more structured patterns of the classroom.

Pattern: an arrangement of shapes, objects, numbers or colours

Repeating pattern: a repeated arrangement using shapes, letters, sounds, objects, movement

Element: each object in the pattern

Repeat: the repeating part of a pattern: the repeat is circled:



Source: *First Steps in mathematics: Number.2010*. Port Melbourne: Rigby. p 200.

Links to Related MAGs

P.1.7 – Body Patterns

P.2.7 – Patterns – copy continue create

P.45 – Patterns on 5x5 grid

P.46 – Patterns – missing elements

1.1.4 – Structure and pattern of 100s board

1.3.6 – Growing Patterns



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