



Making Necklaces

Stage	Strand	Strand Unit
1	Algebra	Patterns, Rules and Relationships

Learning Outcomes	Maths Concepts
Through appropriately playful learning experiences children should be able to explore, extend and create patterns and sequences.	- A pattern is an arrangement of elements organised according to a defined structure or rule. - Repeating patterns are made up of units of repeat and do not contain random elements.

Learning Maths

This experience enables learners to recognise the structure or rule determining the arrangement of elements in a pattern. Learners are invited to reproduce a string of beads that shows a repeating pattern such as *blue, blue, red, blue, blue, red*. Elicit the “pattern” by asking learners to chant aloud the sequence of colours. Encourage learners to identify the ‘unit of repeat’. The ‘unit of repeat’ is the group of elements that repeats¹, e.g. blue, blue, red in this necklace. Learners then extend their string of beads by repeating the pattern identified. The task can be extended by using a variety of repeating patterns and extending the number of elements in the pattern, e.g. three colours.

Understanding and Connecting	Communicating	Reasoning	Applying and Problem Solving
<i>The learner</i>			
Interacts and collaborates with peers, to identify the unit of repeat within a repeating pattern.	Expresses their ideas and shares their thinking with others to describe the unit of repeat and the repeating pattern.	Argues and justifies their thinking, when describing the repeating pattern.	Investigates and explores ways to identify, extend and create repeating patterns.

¹ Van de Walle, Karp, Bay-Williams, (2014) Elementary and Middle School Mathematics: Teaching Developmentally.



Teaching Maths		
Fostering Productive Disposition		Encouraging Playfulness with Mathematics
Facilitate learners to find patterns and make connections with repeating patterns in other curricular areas, e.g. clapping patterns in music, movement patterns in P.E. (jump, skip, jump, skip etc).		Signal when learners encounter repeating patterns in spontaneous play and exploration in other curricular areas. Provide opportunities for learners to explore and experiment with repeating patterns, by providing a wide range of resources (beads, buttons, cubes), visual supports and technologies to enable learners to create, copy, repeat patterns.
	Emphasising Mathematical Modeling	
	Facilitate learners to build, test and apply mathematical models.	
Using Cognitively Challenging Tasks		Promoting Maths Talk
Select, design or modify the task to appropriately stretch and deepen the learners' understanding of repeating patterns using actions, different objects or shapes, e.g. square, triangle, circle, square etc. Include other attributes, e.g. size, colour etc. The number of elements in the unit of repeat can be extended, e.g red, blue, green.		Allow wait time and time for sustained interactions, collective sharing and reflection when creating and discussing patterns, unit of repeat and change.
Assessing Maths		
- Does the learner recognise patterns ? - Can the learner identify the unit of repeat in patterns? - Can the learner copy, extend and create repeating patterns?		
Source		
Adapted from Necklaces First Steps in Mathematics, Number Book 2 , p 203		