Strand: Pattern and algebraic reasoning
Number
Band: Primary years
Standard: 2
Year Level: 3

Key Idea
Students identify, describe, construct, represent and predict patterns and relationships when working with data, measuring and calculating. They relate these patterns and relationships to their everyday lives. [F] [Id] [T] [KC1] [KC2] [KC6]

Students develop their understanding of the four operations (addition, subtraction, multiplication and division) and the relationships between them. They use mathematical terminology, symbols and conventions to communicate their understanding to others. [T] [C] [KC2]

Outcome
2.10 Represents and communicates patterns with everyday and mathematical language, including symbols, sketches, materials, number lines and graphs. [C] [KC2]

2.6 Represents and compares rational numbers in a variety of ways, describing relationships among them. [In] [T] [KC2]

2.7 Describes, represents and applies operations with whole numbers. [T] [C] [KC2]

Task/Activities
1. Construct square patterns with matchsticks.
2. Identify, describe and predict continuing pattern.
3. Explain the pattern using squares, hexagons and octagons.

Examples of evidence towards achievement of outcomes
Students:
- Represent patterns with drawings and symbols.
- Identify and describes patterns.
- Predict patterns and relationships with numbers.
- Construct, represent and predict patterns and relationships with a variety of shapes.
Patterns with matchsticks

1. Make this square with matchsticks
   Now make this.
   And this.

Use matchsticks to show how many matchsticks will you need to make
   7 squares? ________________
   15 squares? ________________

Explain the pattern you have discovered
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

2. Make this hexagon with matchsticks
   Now make this

How many matchsticks do you need to make 3 hexagons? _________________
   5 hexagons? _________________

Explain the pattern you have discovered
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

3. What is the pattern for a repeating eight-sided figure?
   Make it, draw it and explain your pattern.