Parents Count Too
Helping your child with – Patterns and Algebra

Patterns occur in many everyday situations. Algebra is one way in which to represent a pattern. To recognise a pattern, children need to have a clear understanding of what a pattern is. In mathematics, the term pattern is talking about a repeating pattern. In the early years of Primary school, children will learn to recognise, make, describe and continue repeating patterns. They will need to recognise how many parts (or elements) make up a pattern. Initially these patterns may be created from shapes, objects or pictures before moving to number patterns. As children progress through the primary years, they will learn to find missing numbers in patterns and discover relationships between addition and subtraction and multiplication and division. They will also describe patterns in words and be able to determine a rule to describe a pattern. Students in secondary school will learn to use letters to represent numbers and to appreciate that a letter can stand in place of the number of objects.

For example, students will initially learn relationships between numbers such as, $3+4 = 4+3$. To describe the general relationship, 3 and 4 could be replaced by the letters a and b, so that we could say, $a+b = b+a$

The letters a and b represent any two numbers of objects. The number of objects could change but the relationship would remain the same.

What can you do at home?

With young children:

- Discuss the numbers on houses in the street and ask your child to describe what is happening to the numbers as you walk along the street.

- Look at samples of wall paper and talk about the pattern. *How many parts or elements make up the pattern? Where does the pattern start? How many times is it repeated across the paper?*

- Have your child make wrapping paper that has a repeating pattern stamped onto it.

- Play games involving body actions such as clapping and stamping your feet. Ask your child to repeat the pattern and then to make up a pattern for you to repeat.

- Have your child use beads, buttons or pegs to make a repeating pattern and tell you about the pattern. Patterns could be based on colour, size, shape, or items (e.g. peg, peg, spoon, peg, peg, spoon). Ask your child to describe the pattern and to tell you how many objects make up each pattern.

- Use the same materials placed randomly and ask your child to explain to you if it is a pattern.
- Ask your child to make as many different patterns as he or she can from three blue, three white and three red pegs.

With older children:

- Help your child create beaded jewellery.
- Teach your child to knit. Decreasing or increasing the number of stiches usually follows a pattern.
- Landscaping and house designs will often include elements of pattern. For example, many fences or paved areas include a patterned arrangement. Ask your child to describe the pattern.

- Look for patterns in the numbers on a calendar. Why do these patterns occur?
- When driving for long distances in the car play number games to investigate - patterns such as, *Guess my number (x)*. For example, -
    - *My number (x) is between 20 and 5; it is an even number and a multiple of 3.*
- When watching sporting games calculate scores or investigate combinations of - scoring possibilities. For example: -
    - The Swans scored 4 goals and 3 behinds in the first quarter. How many points did they score? -
    - The Bulldogs scored 12 points in the first half. What combinations of - tries and goals will give this score?