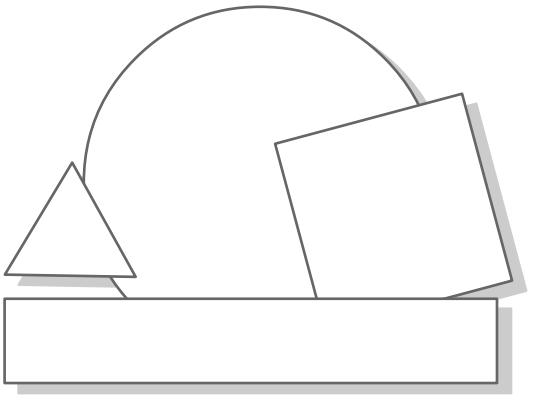
Teacher's Overview
In this KS1 lesson, children will investigate repeating patterns by taking part in a pattern hunt around the school. Finally, they will be introduced to number patterns and will investigate the continuation of a sequence of numbers.

National Curriculum 2014 Links
To recognise and create repeating patterns with objects and with shapes.

KS1 Learning Objective
To investigate patterns with shapes, objects and numbers.

Keywords
pattern
sequence
infinite
rule



Resources
- shape cards (Reference Sheet 1)
- miscellaneous objects for creating patterns
- clipboards

Starter: 0-10 minutes
Give the children four containers and the shape cards from Reference Sheet 1. Ask the children to sort the shapes into the three pots.

Discuss as a class:
- How have they decided to sort the shapes?
- What four types of shapes are there? - circle, triangle, square and rectangle
- What are the properties of each of the shapes? - Triangle has three sides, three corners etc.

Main
Part 1: 10-30 minutes
Stick some of the shapes onto the whiteboard, in a repeating pattern, for the children to see. Discuss with the children:
- What is special about these shapes now?
- What will be the next shape?
- Explain to the children that this is called a pattern.

Demonstrate to children other patterns with objects in the class such as counters, toy cars, etc.

Tell the children that they are now going to go on a pattern hunt around the school, looking for repeating patterns. Instruct children to draw what they see.

Part 2: 30-50 minutes
Write the number sequence on the board 1,2,1,2,1,2,1,2,1,2,1,2,1,2.....

Patterns don't just have to be shapes. This pattern is also called a sequence. Discuss with the children:
- Can they see a pattern with these numbers?
- What number do they think will come next?

Now display 0,1,2,3,4,5,6,7,8,9.....

Can they see a pattern with these numbers? The numbers go up in ones. This is called the rule of the sequence.
What number should come next?
Explain to the children that this number pattern can also be called a sequence and that the dots after the numbers mean that it will go on for infinity / forever. It is an infinite sequence.

Display the sequence 5,6,7,8,9..... Discuss this sequence with the children. Explain that this is also a number sequence. The sequence does not have to start at 0 or 1 it can start at any number and in this case it has started at 5.

Display 0,2,4,6,8,10... counting in twos. Discuss this sequence with the children.
Can they see a pattern with these numbers?
What number should come next?

Split the children into pairs. Ask the children to think of some other sequences. Swap the sequences with their partner and see if they can work out the rule of the sequence.

Plenary: 45-60 minutes
Ask the children to stand up. Call out a sequence e.g 2,4,6,8,------. Miss out one of the numbers on purpose. When the children think that a number has been missed out they should sit down as quickly as possible. The last person standing is out.