

## Algebra - Sample Lesson Plan

**Grade:** 1

**Topic:** Patterns

**Subtopic:** Creating Patterns

**Duration:** 60 minutes

**Specific Objectives:** *By the end of the lesson, students should be able to*

- Create patterns with objects and geometric figures
- Work in cooperative groups

### ***Prerequisite Knowledge***

Identifying shapes, counting, identifying colours.

**Materials:** unifix cubes, beads, string, attribute blocks, objects that can be used to create a pattern, paint, Styrofoam cups, construction paper

### ***Content Summary:***

A pattern is a regularity in the world or in a manmade design. As such, the elements of a pattern repeat in a predictable manner. A geometric pattern is a kind of pattern formed of geometric shapes and typically repeated like a wallpaper design.

### ***Engage:***

The teacher will create a pattern using her hands and will have his/her students complete the pattern. The teacher will create the pattern by clapping his/her hands and snapping his/her fingers.

*For example, the teacher claps twice, snaps twice, claps twice. Then students are expected to continue the pattern by snapping twice and then clapping twice.*

The teacher will ask students to explain how they were able to complete the pattern. The teacher will repeat this task using three snaps and three claps.

### ***Explore and Explain:***

- Students will work in groups of three. Groups will be given attribute blocks, unifix cubes or similar objects which they will use to create a pattern. *To start the process, the teacher will demonstrate building patterns using two attribute pieces as shown below. The teacher can project this image or use large cut-outs on the white board. For each step she will ask students to suggest the next piece in the pattern.*



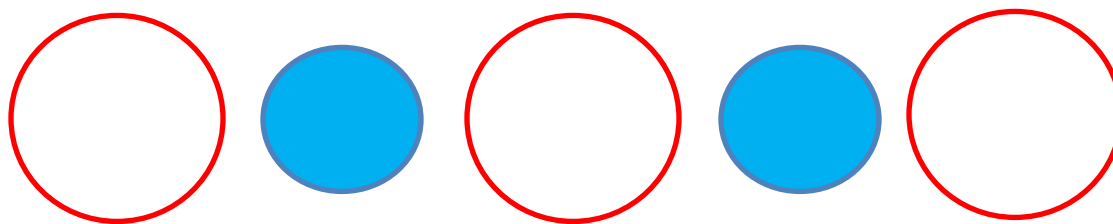
- Each group will be asked to create their own pattern using 10 pieces (of attribute blocks, unifix cubes...). Students will be asked to draw a picture of the pattern they created. The teacher will walk around to supervise the groups and listen to their discussions.
- The teacher will then instruct students to create a new pattern using the same pieces. The teacher will ask guiding questions so as to get students to create different types of patterns using the same objects. For instance, if a group created the pattern: blue, red, blue, red, blue, red. The teacher may ask: *“Can you create a new pattern using the same number of objects and the same colour?”* The group may now come up with blue, blue, red, blue, blue, red.
- If this type of thinking is not evident, the teacher may ask *“What if I started off with two reds, can you think of what could come next? Is it a pattern if you have more than one pieces of the same color side and side?”*
- Each group will be asked to share their pattern/patterns with the class and talk about their pattern.

***Elaborate:*** Students will be asked to use beads to create a pattern along a string. The resulting product will be a beaded bracelet.

### ***Evaluate:***

Students will be asked to design a pattern using a Styrofoam cup and two paint of different color (for example: red and blue). They will dip one side of the cup in one color and stamp it on their construction paper. They will then place the other side of the cup in the other color paint and use it to stamp their construction paper. If necessary, the teacher may decide to cut the Styrofoam cups so as to reduce the possibility of students messing up their clothing.

*Keep in mind that one side of the cup is the top of one cup (the part you drink from) and the other side is the bottom (the part that sits on the table). Below is a possible design – remember that students are free to create any pattern they choose.*



Evaluation:

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