



## TEACHER PAGE

### Lesson: Shapes and Patterns - Kaleidoscope

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**New Arizona Math Strand 4 Geometry and Measurement**

**Grade 3**

**Articulated 4M31-O1** Build geometric shapes with other common shapes e.g. tangrams, pattern blocks, geoboards)

**Old Arizona Math Standard 4 Geometry**

**Grades 1-3**

**4M-F2-PO1** Predict how shapes can be changed by combining or dividing them

#### Materials:

Pattern blocks are needed for an activity center or enough for the whole class for experimentation. Also put out markers, pencils, rulers, and paper to draw patterns. Display several Kaleidoscopes.

**Learning Objectives:** The students will be able to:

1. recognize a square within a pattern
2. demonstrate understanding attributes of squares by constructing a pattern using squares
3. show analysis and comparison skills by inventing patterns of squares and other shapes.

#### Overview:

The students will learn about patterns and experiment with making patterns using squares first as a foundation and then adding other shapes to the squares. They will be shown pictures of patterns – teachers need to have examples to show. Then, each student will complete the lesson. For the follow-up, select one of the following activities:

1. Pattern block activity center: students will explore and create or draw patterns.
2. Making a kaleidoscope (Dig Deeper section in the online lesson. The teacher needs to be familiar with the procedure in advance in order to prepare the necessary materials and assist students. This lesson is also available with English narration and has a script.

#### Content:

Pattern blocks are tools to assist students in predicting the change in shapes upon combining many and various shapes or by dividing them.

#### Follow-up, extensions:

Students will have the opportunity to build a kaleidoscope using geometric shapes and other shapes in the DIG DEEPER section of the online lesson. Students research and experiment with building patterns by combining shapes and dividing shapes. Display and demonstrate Kaleidoscopes for student discovery. SO WHAT has an online book of actual Kaleidoscope images. Name all the shapes in the TALK ABOUT IT Kaleidoscope image.

#### Assessment:

Students will correctly construct 2 or more different patterns using the squares only. Teachers are invited to continue this with various shapes and combinations of shapes.

#### Teachers:

Take advantage of web searches on your topic for rich sites to assist students

