

Mosaic Math

Fifth Grade + ELA/Drama

CORE SUBJECT AREA

Math

ART FORM + ELEMENTS

Visual Art

Shapes

Balance

MSCCR STANDARDS

CCSS.MATH.CONTENT.5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule, “Add 3” and the starting number 0, and given the rule “Add 6” and the starting terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

MSCCR CREATIVE ARTS STANDARDS

VA:Re9.1.5.a. Recognize differences in criteria used to evaluate works of art depending on styles, genres, and media as well as historical and cultural contexts.

VA:Cr1.1.5a Combine ideas to generate an innovative idea for art-making.

VA:Cr1.2..5a Identify and demonstrate diverse methods of artistic investigation to choose an approach for beginning a work of art.

DURATION

45 minutes

OBJECTIVES

TSW generate ordered patterns.

TSW evaluate artwork in cultural context.

MATERIALS NEEDED

Black paper for background

Paper in multiple colors

Glue

Scissors

Sheet of paper

Pencil

VOCABULARY

Pattern

Unit

System

Sequence

Organic shape

Mosaic

RECOMMENDED RESOURCES

Star Tile image found at

<https://www.philamuseum.org/collections/permanent/39953.html?mulR=1076659720|2>

Tile Mosaic Panel Image found at

<https://www.philamuseum.org/collections/permanent/44463.html?mulR=756657128|1>

LESSON SEQUENCE

Introduction

TTW will display an image of the 13th century Islamic tile “Star Tile”



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TTW explain to the student that this tile is an example of a pattern.

TTW review with the student that a pattern is a design or form that repeats itself in an organized manner.

TTW introduce the student to the three elements of a pattern: unit (what shape makes the pattern; for example, a star or a flower), sequences (how the units repeat themselves), and system (how the repetition is organized; for example linear, spiral, on top of one another, etc.).

The teacher and the student will identify the three elements of a pattern together using the image of “Star Tile.”

TTW explain to the student that patterns are found in art just as they are found in other places, such as in mathematics and the natural world.

The teacher and the student will discuss the three elements of a pattern as found in math (for examples, numbers are the units of your patterns, they can repeat in sequences in which the same number is added to other numbers, how numbers in numerical patterns are organized, etc.)

The teacher and the student will discuss patterns as they are found in the natural world (DNA, nature, etc.).

TTW explain to the student that following the elements of a pattern creates balance in art.

TTW tell the student that balance in art is when artists arrange the elements of the artwork in a way that they are distributed equally across the artwork and are visually pleasing to look at.

The teacher and the student will discuss how “Star Tile” is balanced.

Transition

TTW display the image of “Tile Mosaic Panel.”

TTW explain to the student that a mosaic is a work of art that is created using pieces of tile or glass that are attached to a surface with glue or tile grout.

TTW split the student into small groups or pairs.

TSW work with their groups or partners to identify the three elements of a pattern as they are found in this artwork.

The teacher and the student will engage in a discussion about the different elements of a pattern as they are found in the “Tile Mosaic Panel” (responses may vary based on how the students interpret the artwork.)

The teacher and the student will discuss the different things they see used as units in the artwork (vines, swirls, stars, etc.)

TTW explain to the student that the tiles can be analyzed to understand the culture of the Islamic people in the middle east.

TTW explain to the student that Islamic patterns did not contain images of people as Islam teaches that creating images of people is a form of worship and that they believed people should not worshipped.

TTW explain to the student that Islamic art normally contains organic shapes, or non-geometric shapes that are found in nature, such as leaves, stars, and flowers.

Description

TTW tell the student that they are going to generate a pattern by creating their own Islamic tile mosaics/

TTW distribute materials (black paper, colored paper, glue, scissors) to the student.

TSW begin by planning the different elements of their pattern: what unit(s) do they want to include, the sequence of their pattern, and the system of their pattern.

TTW model planning her elements on the board.

TSW plan their own elements and will write them down on a sheet of paper.

TSW create their tile using paper, scissors, and glue.

TSW design and cut out the different units of their pattern and will glue them onto their paper using an organized system and sequence.

TTW model this process on the board.

As the students create their art, the teacher will monitor and provide guidance and support where needed.

When the student artwork is complete, the teacher will display all the student artwork in a mosaic panel fashion.

EXTENDED LEARNING ACTIVITIES

The student can view each other's artwork and identify how their classmates used the different elements of a pattern.

SOURCES

Original plan found

https://www.philamuseum.org/doc_downloads/education/lessonPlans/Coomn%20Core%Math%20And%20Islamic%20Art.pdf Modified by Allison Nester