**Title: Mosaic Math: Integrating math and history**

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**Overview**

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| **Lesson Overview**  | Students will count and categorize shapes of their self portrait mural. Then students will compare the number of shapes used on other self portraits and themselves. This is an extension of a previous lesson (“Mosaic Self Portrait”) as they investigate their own identity. |
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| **Grade Level/****Course** | Elementary (K-2) |
| **Standards** | **Math Standard: 3. Data Analysis, Statistics, and Probability**a. Represent and interpret data. (CCSS:1.MD)i. Organize, represent, and interpret data with up to three categories.(CCSS: 1.MD.4)ii. Ask and answer questions about the total number of data points howmany in each category, and how many more or less are in onecategory than in another. (CCSS:1.MD.4)**Math Standard: 4. Data Analysis, Statistics, and Probability**1, Shapes can be described by their attributes and used to represent part/whole relationships. Students can:a. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. (CCSS: 2.G.1)b. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (CCSS: 2.G.1) |
| **Time Required**  | Multi-class |
| **Topic** | Culture/identity issues |
| **Time Period** | 1980s-90s; 2000-2013 |
| **Tags (key words)** | Category, data, graph (picture and bar), tally marks, compare, count, shapes, more than, less than, equal, culture, identity,primary resources |

**Preparation** *(Links to worksheets, primary sources and other materials):*

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| **Materials** | * **Self portraits from previous lesson** <http://teachbocolatinohistory.colorado.edu/wp-content/uploads/2017/12/Mosaic-Self-Portrait_-Who-Are-We_.docx>
* **Counting Shape Organizer**
* **Graph paper**
* **Color pencils**
* **Pencils**
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| **Resources/Links** | The power of Unity  <http://teachbocolatinohistory.colorado.edu/wp-content/uploads/2017/12/The-Power-of-Unity-talk-1.pdf> |

**Lesson Procedure** *(Step by Step Instructions):*

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| * In preparation for this lesson teacher will have the completed self portrait from each student from the self portraits lesson. Students have already studied names of shapes.
* Write the objective for the lesson and go over it with the students.
* Model with your own self portrait what is expected that students do by counting and categorizing shapes using a tally mark table. <https://docs.google.com/document/d/17ZBHD1ZKj-aDlDH3d7R4qobgkKSM_4bzFIARO4EL1Z4/edit>
* Have students count and categorize the shapes used in their self portraits using the table to organize their data.
* Gather students to the front and continue to model how to graph the data from the table by asking students their data

 <https://docs.google.com/document/d/1iM2Azet7zJJ-FWY8yhsVLN2GsHFoBqbi9ybfMIqjQLs/edit>* When finished each student will create a picture or bar graph using their own data results.
* Model how to compare each other’s graphs by using the following sentence stems.
* Use the following sentence stems:

 Name used less name of shape than Name  Name used more name of shape than Name Name used equal name of shape as Name * Students should be paired with their learning buddies and share their graphs so that they can learn from each other data in order to be able to compare their results.
* After they have finished learning about each other’s graph, students will orally practice comparing their results using the sentence stems.
* When finished, students will share their observations with the whole class.
* We will display the self portrait, and the graphs in the classroom’s wall.
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**Evaluation/Assessment:** *(Methods for collecting evidence of student learning)*

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| Students will be assessed when counting and graphing the results of their own self-portrait.Students will also be orally assessed when sharing the results after they compare themselves with others.**Extensions:** This lesson could be extended by having students analyze who used more triangles, squares, rectangles, etc. in each of their self portraits.  |