

Integrated Lesson Plan – Culminating Activity

Name: Gina Fuss

Content Standards:

Math

1.1.7 2000 – Recognize when a shape is divided into congruent (matching) parts.

Visual Art

1.8.2 2008 - Create a work of art utilizing concepts, subject matter, or the sign systems, such as words or numbers, of another discipline.

Learning Objectives:

- Students will grasp the concept of congruency – a shape divided into equal or matching parts
- Students will be able to visually conceptualize the concept of congruency by creating a piece of artwork that is separated into equal parts.
- Students will become familiar with using modeling clay to create a visually appealing piece of artwork that utilizes the core math standard.
- Students will use measuring tools to accurately divide their creation into equal parts.

Description of the Core Content Lesson:

The lesson I will teach will be one that teaches my students what congruency is. I will begin by describing what congruency means pertaining to geometric knowledge and measurement skills. I will use examples of basic shapes such as a square, rectangle, or circle. The examples will be shown on the projector as two-dimensional cut outs that will further be cut into congruent parts.

Procedure:

- 1) Define congruency
- 2) Using a square take the measurements of all the sides and measure the distance between each side.
- 3) Using knowledge of fractions show students how to accurately divide the square into two equal parts.
- 4) Then take it a step further and divide the two halves of the square in half.
- 5) Take measurements of the new divided pieces showing that they are all equal to one another.
- 6) Relate the measurements back to the concept of congruency
- 7) Repeat the process with other shape examples.
- 8) Also show an example using a letter of the alphabet such as “A” or “T”

I will then pass around three-dimensional objects (in this case Hershey bars) that can easily be separated and measured. The students will get an introductory hands-on experience during the lesson. They will first separate the object in half and then divide those halves in half.

Description of the Visual Activity:

For the hands-on visual activity students will create a basic shape (square, rectangle, or circle) out of modeling clay. They can use paint or food coloring to add color and originality to their shape. They will take measurements of the shape using centimeters. They will then mathematically figure out where they should separate the shape to create two equal halves. They will then cut the shape according to their measurements to create two equal halves. They will then re-measure the two pieces and determine where to cut each half in half so they end up with four equal pieces of their original shape. Magnets will then be placed on the back of each piece so that they can attach the piece to their refrigerator at home to further be able to interact with the concept of congruency.

Materials:

- Quick dry modeling clay (Crayola)
- Plastic cutting utensils (Kiddi Kutter child safe knives)
- Food coloring
- Paint (Tempera, watercolors)
- Paint brushes
- Magnets
- Scissors
- Glue
- Ruler
- Pieces of cardboard to work on
- Rubber gloves
- Aprons

Integration Rationale:

The core content standards integrated in this lesson were the math standard to have students recognize when a shape is dividing into congruent parts and the visual arts standard of creating a work of art that utilizes concepts, subject matter, or the sign systems, like numbers or words, of another discipline. The hands-on visual activity of creating a piece of artwork that illustrates the concept of congruency meets the needs of both content standards that were to be met in this lesson.

The visual activity is an instructional strategy where the teacher interacts with the student on an individual and personal level since each student's creation is different from the others. This activity is an individual activity so the student has the opportunity to personally interact with the core standard content and can use their own ideas and creativity to make the piece of artwork. The learning environment is set up during the hands-on activity to promote student self-reflection on their interests and to further cultivate their motor skill development and creativity.

The visual activity reinforces student engagement with the standards and learning objectives since the student is required to interact with the standard on a personal hands-on level. Student creativity is appreciated therefor creating a learning environment where the student's interests are put first. The student is allowed to produce an original creation which will allow the student to feel that his or her project holds importance and value. The student will more likely remain engaged in the lesson since they are required to interact with the material on a personal level.

The benefits of this activity are that many different concepts are intertwined in the process of creating this project. Students are able to measure, use a standard unit of measurement, work with fractions, and like connections are able to be made and incorporated even without directly pointing out that the student is using those skills. However, the benefits of this activity are not only focused on intellectual progress but also reach out to physical developmental skills such as motor development and craftsmanship skills. Students are using their coordination skills along with their intellectual skills to create an original piece. Students are able experiment with different tools and materials. They are also able to experience an enriched learning experience that can help build self-confidence in one's creative abilities. Students can feel appreciated for who they are by being able to express themselves through art.

Rubric:

CATEGORY	4	3	2	1	Score
Mathematical Concept - Congruency and Measurement	Created shape is divided into four equal parts.	Created shape is divided into four parts that are almost equal.	Created shape is divided into two equal parts.	Created shape is divided into unequal parts.	
Measurement Accuracy	Student has taken the concept of congruency and applied it in a way that is totally his/her own. The student's personality/voice comes through.	Student has taken the concept of congruency as a starting place. The student's personality comes through in parts of the painting.	There is little evidence of creativity but the project is completed.	There is little evidence of creativity but the project is completed.	
Time/Effort	Class time was used wisely. Much time and effort went into creating the original piece. It is clear the student worked hard on this project.	The student used most of class time wisely. An average amount of effort was put into creating the original piece.	Class time was not always used wisely. Minimal effort was put into the piece.	Class time was not used wisely and the student put in no additional effort.	
Use of materials	Student typically keeps painting materials and area clean and protected without reminders. The student shows great respect for the materials and his fellow students.	Student typically adequately cleans materials and work area at the end of the session without reminder, but the area may be messy during the work session. Student shows respect for materials and fellow students.	Student adequately cleans and takes care of materials if reminded. Occasional spills and messy work area may be seen. Shows some respect for materials and fellow students.	Student deliberately misuses materials AND/OR does not adequately clean materials or area when reminded. Shows little respect for materials or fellow students.	