

ARTS IMPACT SUMMER SCHOOL

MATH/VISUAL ART LESSON – THIRD GRADE

About Faces and Fractions

Artist/Mentor: Debbie Gilbert, Teachers: Jill Barrett and Rachal Marcus



Draws eyes
approximately
ways down the face.



Draws nose
approximately way
between eyes and
chin line.

Problem to Solve: How can a face be represented proportionately?

Understanding: Representing the human face can begin with division of the face into fractions, followed by recording differences noted through observation.

Brief Description of Task/Project

Students create a self-portrait using fractions to draw an image/diagram of a face. *This lesson is best taught in more than one session.*

Target Learning and Assessment Strategies

Knowledge and skills: *The student:*

Target: Identifies one-half.

Criteria: Finds one-half of something in the classroom.

Target: Makes a facial self-portrait.

Criteria: Draws their face with the eyes approximately ways down the face, bottom of the nose ways between the eyes and chin line, and the lower edge of the mouth ways between the bottom of the nose and chin line.

Target Uses line to represent attributes of hair.

Criteria: Represents hair with interrupted, spiral/looping, straight or curved lines as appropriate to represent hair attributes.

Target: Controls pressure with drawing tools.

Criteria: Creates even tone to show smooth areas of face with pencil techniques.

Evidence of Student Learning
drawing

Instructional Strategies for the Teacher and Student

Day One:

1. Teacher: **Reviews fractions.** *Prompts: What is a fraction? Show me half of something in the room? (when you divide something down the middle, you get two halves)*

Student: Finds halves. Embedded Assessment: Criteria-based teacher checklist

2. Teacher: **Asks students to make self-portrait as well as they can based on current knowledge.** *Prompts: Lets do an experiment: draw yourself as accurately as you can. Introduces Frida Kahlo, Self Portrait.* Marks halves (low tack-taped) on top of the print to demonstrate halves. *Prompts: When you draw a face it can be divided into fractions to place the eyes, the nose, and the mouth. Let's take a look at Frida Kahlo's self-portrait. Where are her eyes? I'm going to divide the shape of the face into one-half. Her eyes are halfway down her face. I'm going to divide the space between the eyes and the chin in one-half. The bottom of her nose is halfway between her eyes and chin. I'm going to divide the space between the nose and chin in one-half again. The lower edge of her mouth is halfway between the bottom of her nose and the bottom of her chin. Now let's take a look at the self-portrait you drew first, look at the portrait of Frida Kahlo with tape lines and also look at yourself in the mirror...what do you see? What are the differences?*

Student: Creates base-line self-portrait, responds to proportions measured with fractions in Frida Kahlo, *Self-Portrait* and compares original self-portrait with image in mirror and poster.

3. Teacher: **Introduces Judith Leyster, Self-Portrait.** *Prompts: Here is another self-portrait. Is this artist's face exactly the same proportion of halves? Let's check to see. How are her face proportions the same or different than Frida Kahlo's?*

Student: Responds to proportions observed in fractions in Judith Leyster's *Self-Portrait* and other students.

Day Two:

4. **Teacher:** Guides students as they observe and draw their facial proportions as seen in mirrors. Prompts: Think about the shape of your face. What shape is it? (oval) Observe the shape of your face carefully, draw it, and then lightly draw a line halfway down. Place your eyes at the halfway line. Divide the space between the eyes and the chin in half. Lightly place the bottom of your nose and draw its shape. Divide the space between the nose and the chin. Place and draw the shape of your mouth. Prompt: Let's do a practice run!

Student: Draws two preliminary drawings of their face. Chooses one to develop further. *Embedded Assessment:* Criteria-based student self-assessment

5. **Teacher:** Demonstrates making adjustments to facial proportions to show the differences in each of our faces. Demonstrates using lines in fine tipped black marker to define facial features and erasing pencil axis lines. Pen lines also define spiral, broken, looping for hair attributes. Prompt: Each of us is different. How is the placement of your eyes different from your classmate's eyes? How can lines describe your hair?

Student: Adjusts preliminary drawing of facial proportions, and adds lines to show hair.

Day Three:

6. **Teacher:** Demonstrates creating tone for smooth areas using colored pencils. Prompt: Carefully maintaining pressure on a drawing tool can help you create a smooth even tone. Practice creating a range of tones and keeping pressure constant before you work into your self-portrait.

Student: Uses colored pencil techniques to add color to portrait.

7. **Teacher:** Leads criteria-based group critique. Prompt: What do you notice that is the same about your classmate's self-portrait and their face?

Student: Assesses own art and the art of classmates. *Embedded Assessment:* Criteria-based group critique

Vocabulary

- diagram
- fraction
- halves
- interrupted line
- oval
- proportion
- representational
- self-portrait
- spiral/looping line

Selected Resources

Visual Art Resources: TPS Art Prints: Take 5 Prints: Women Artists Frida Kahlo, *Self-Portrait*; Judith Leyster, *Self-Portrait* Eric Bashor: *Robert Fucci, I, II, III, IV, V* 1999 TAM permanent collection
Art Materials: pocket mirrors 9 x 12 in. 60# white sulphite paper, fine-tipped black markers, multicultural Lyra colored pencils H pencil, art gum erasers.

Student Applications of Learning

Student recognizes and draws human body proportions.

Essential Learnings

MEL 1.1 number sense: fractions
AEL 1.1 concepts: proportion
AEL 2.3 applies a creative process: gathers information for self-portrait

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Target: Controls pressure with drawing tools.

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ASSESSMENTS CHECKLIST

Student	Fractions	Facial Fractions ARTISTIC			Line Type	Skills and Techniques	Total Points 6
	MATHEMATICAL RESPONSE Finds half of something in room	MATHEMATICAL RESPONSES			ARTISTIC RESPONSE uses interrupted, spiral/looping, straight or curved lines to represent hair attributes	ARTISTIC RESPONSE creates even tone to show smooth areas of face with pencil techniques	
		position of eyes _ ways down face positions bottom of nose	_ ways between eyes and chin positions lower edge of mouth	_ ways between nose and chin line			
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
Total							
Percentage							
Mean							
Median							

Teacher Comments:

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About Faces and Fractions

Dear Family:

Your child participated in a math and art lesson using fractions to create **representational self-portraits** in **proportion**.

1. We looked at self-portraits by Frida Kahlo and Judith Leyster. We talked about the **proportions** of their faces.
2. We looked at the way the human face can be divided into **fractions**. The eyes are about **one-half** way down between the very top of the head and the bottom of the chin. The bottom of the nose is about one-half way down between the eyes and the bottom of the chin. The bottom edge of the mouth is about one-half way down between the bottom of the nose and the bottom of the chin. We made a **diagram** of the face.
3. We used mirrors to look closely at our own faces. We considered our heads as basically **oval** shapes with some differences. We considered how our faces are only slightly different than the one-half divisions seen in an average face. We drew our heads lightly in pencil to make a **preliminary drawing**, and then used fine-tipped markers to define the features of our self-portrait. We added hair attributes using lines that described our hair: **spiral/looping lines, interrupted/broken lines**, curved and straight lines. We created **tone** using colored pencils to show smooth areas.

At home you might look together at the proportions of your faces. You could make a portrait of each other.

How are the proportions of our faces the same? How are they different? How can I use line to show attributes of the person I am drawing?

UNDERSTANDING

***Representing the human face
can begin with division of the face into fractions,
followed by recording differences noted through observation.***