**Fraction Paper Sculpture**

**3rd grade**

**35 minutes**

**Visual Art Objectives**

1. Create a 3-dimensional paper collage by attaching cut paper in a variety of colors to a dark background.
2. Develop visual awareness of relationships between objects of different lengths within a composition.

**Math Objectives**

1. Use a ruler to measure and then cut strips of paper from a whole part (12 inches) to sizes that are fractions of the whole (6 inches, 4 inches, 3 inches, etc.)
2. Compare the whole length of paper to pieces that represent fractions of the whole length.

**Standards**

[CCSS.MATH.CONTENT.3.NF.A.1](http://www.corestandards.org/Math/Content/3/NF/A/1/)  
Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.

National Arts Standards

Anchor Standard #2. Organize and develop artistic ideas and work.

Anchor Standard #3. Refine and complete artistic work.

**Vocabulary:** Whole, half, quarter, third, sculpture, 3-dimensional

**Anticipatory Set 5 min**

Hold an **art discussion** using works from NOMA’s collection. Such as *Forever* by Odili Donald Odita or *Scramble: Ascending Yellow Values, Descending Spectrum* by Frank Stella.

Ask questions like:

* What shapes do you see?
* How are these shapes related to each other?
* What sizes are the shapes?
* How does the artist show us differences in size?
* What do you think is represented here?

Tell students that they will create a paper sculpture using cut paper.

**Group Practice 10 min**

* *Prepare ahead of time* – Using bulletin board paper or poster board, cut strips of colored paper in lengths of 24, 12, 6, 4, 3 and 3 inches (or longer, as long as the lengths represents fractions of the longest strip). There should be one piece of the longest paper, 2 strips of the size that represents ½, 3 strips of 1/3, etcetera.
* Students will work in groups of 3 – 4 students to compare the lengths of the strips and write down equivalent parts in a notebook or worksheet.
* Working together, students will create a paper sculpture. They will use tape to attach the folded paper to a desk or table.

**Individual Practice 15 min**

**Procedures**

Students will create their own paper sculpture.

* Students will measure and cut one 12 inch strip of paper using a ruler and scissors.
* Each student will need a sheet of black paper for the base and an assortment of multi-colored paper to cut into strips.
* Students will measure and cut lengths of paper that equal ½, 1/3, ¼. Each size should be in a different color. Each size should have enough pieces to equal the whole. (For example, 2 strips of paper that are 6”, 3 strips of paper that are 4”)
* Ask students to check their work by placing the strips alongside each other for comparison.
* Students will create a 3-dimensional sculpture from paper on the black base. Remind students that 3-dimensional means that they should have height, depth and length. The sculpture should come off of the page, not lay flat.
* Students should use all of their strips of paper.
* Students will write the numerical fractions on the black paper next to the colored strip that represents that fraction.

**Closure 5 min**

Ask 2 – 3 students to volunteer to describe their sculpture. Students should point out the length that equals one whole and then examples of ½, 1/3, ¼. Ask the following questions:

* How would you describe your sculpture?
* Where is your whole? Halves? Thirds? Fourths?
* What shapes did you make?
* How are these shapes related to each other?

**Extension**

Combine the students’ sculptures to create one large class sculpture.

Ask students to double the size of each piece of paper.

Apply the concept of fractions to liquid measurements by creating sculptures from clean containers of different sizes.

**Accommodations**

Strips of paper can be pre-cut or a worksheet with pre-drawn lines can be provided.

Students can work only with wholes and halves.

Challenge students to see how many fractions they can work out.

**Materials**

Multi-colored paper

Black paper

Poster board and/or bulletin board paper

Scissors

Tape

Rulers

White colored pencil or metallic pen