

# Pieces to the Puzzle

## IB Fraction Project

**Background History:** Fractions have been involved in our daily lives for many years. Fractions are numbers that represent parts of a whole. Egyptians were one of the early groups to study fractions. They would represent  $\frac{3}{4}$  as  $\frac{1}{2} + \frac{1}{4}$  using hieroglyphics. In addition, the Ancient Romans used words to represent parts of a whole or quantity.

Ellsworth Kelly, an American painter and sculptor, used a grid system to create the well known painting, *Colors for a Large Wall*, 1951. It is located at the Metropolitan Museum of Art in New York. This painting is abstract art with a foundation of illustrating portions of a whole.

Fractions are used more than you think! Fractions are used to create art, but they are also used within architecture to design buildings or constructing the tiles in your school classrooms.

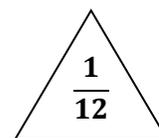
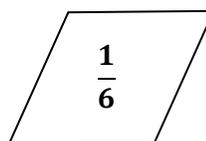
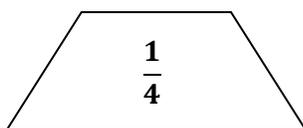
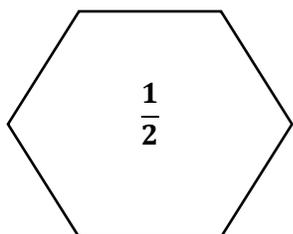
**Objective:** The purpose of this IB Project is to allow you to use fractions in a creative and fun way, but to also allow you to show your understanding, application, and explanation of fraction operations, specifically adding fractions. In addition, this project helps you to develop logical thinking skills.

**Project Plan:** You will be using the attached sheets of Pattern Block shapes to create an original design. Your design may be as simple or complicated as you wish. You will cut out the shapes that you will use and glue or tape the shapes on a blank sheet of paper. Each shape has an assigned value that is listed below. **The rules below must be followed:**

1. Your design must use all 4 shapes
2. Each design must add up to a minimum of  $1\frac{1}{2}$  but no more than  $7\frac{1}{2}$ .
3. You will add all the fractions and must show your step by step process.
4. A key must be provided to inform your teachers of how many of each shape was used.
5. You must explain in 3-5 sentences why you chose your design and how it relates to the real world/daily life.

**Grading Plan:** There will be two rubrics used to assess this project. One is an IB rubric and the other is a rubric based on a point system. Both rubrics are located on the back of this paper. The higher number of points received, the higher the grade.

**Due Date:** This project will be due at the beginning of class on Tuesday, November 6<sup>th</sup> (B-Day) or Wednesday, November 7<sup>th</sup> (C-Day). Late projects will receive 15 points deducted for each class meeting that it is late. This project will count as a test grade for the 3<sup>rd</sup> Six Weeks.



**Unit 3 –Fraction and Fraction Operations IB MYP Assessment Rubric**

This assignment will be assessed based on MYP Mathematics Criteria C.

	<b>5-6</b>	<b>3-4</b>	<b>1-2</b>	<b>0</b>
<p><b>Criterion C</b></p> <p>Communication in Mathematics</p>	<p><input type="checkbox"/> I used <b>appropriate</b> mathematical language (<b><u>numbers, symbols and math vocabulary</u></b>) such as equivalent fractions, LCM, and GCF in my work.</p> <p><input type="checkbox"/> I showed the steps I took to solve the problems using numbers and symbols.</p>	<p><input type="checkbox"/> I used <b>some</b> mathematical language (<b><u>numbers, symbols and math vocabulary</u></b>) such as equivalent fractions, LCM, and GCF in my work.</p> <p><input type="checkbox"/> I showed <b>most</b> of the steps I took to solve the problems using numbers and symbols.</p>	<p><input type="checkbox"/> I used <b>basic</b> mathematical language (<b><u>numbers, symbols and math vocabulary</u></b>) such as equivalent fractions, LCM, and GCF in my work.</p> <p><input type="checkbox"/> I <b>attempted</b> to show the steps I took to solve problems using numbers and symbols.</p>	<p><input type="checkbox"/> You have <b>not</b> tried to show what you know.</p>

<b>Grading Criteria</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>TOTAL</b>
Shapes Used	Four types of shapes used	Three types of shapes used	Two types of shapes used	One type of shape used	
Design Total	Total between 1 ½ and 7 ½	Total more than 7 ½	Total between 1 and 1 ½	Total less than 1	
Neatness	Clear, concise, and organized	Readable and somewhat organized	Somewhat able to read	Unable to read clearly	
Creativity	Original and unique	Creative	Somewhat creative	Simple, not original	
Fraction Key	Fraction Key provided	Majority of fraction key provided	Part of fraction key provided	No fraction key provided	
Explanation	Detailed and clear	Clear	A bit difficult to understand, some critical components	Difficult to understand or not present	