Rational Numbers Project

“Pixel Art”

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Curricular competency being assessed: *Reasoning & Analyzing***  **Content:**  **✓ Operations with rational numbers** | | | |
| **BEGINNING** | **DEVELOPING** | **PROFICIENT** | **EXTENDING** |
|  | | **I can…**   * Apply (use) my rational number skills to model number classification accurately and as specifically as possible. * Use math skills to accurately create an image using rational numbers. * Using mental math and estimation, I am able to correctly order rational numbers from least to greatest. * Reflect on the importance of rational number skills to the real world. |  |

A group of math art project

Description automatically generated

**Task:**

You will be creating a colour-by-numbers picture using rational numbers. Your image will be created on a grid paper. All squares do not have to include a number. Empty squares must all be the same colour but can be used as part of your image.

You will submit your rough draft (with the intended image colored) along with your final copy and an answer key. Your final copy should be clearly communicated - extremely neat, easy to read/understand, and free of errors.

Remember to classify your numbers correctly. For example, one of the required numbers is an integer written as a fraction. For example, fulfills this requirement; however, make sure you place it correctly. This number best fits in the category “natural number”. Be sure to choose a number that meets the criteria but be careful when placing it on your grid to ensure your image portrays your intended design.

**Instructions:**

Step 1: Create a rough draft of your design on graph paper. Your design should be creative, original, and must consist of at least 5 colours.

Step 2: After creating your rough draft, you will come up with numbers that meet the criteria (i.e. natural number, whole number, etc.) for each colour.

Step 3: Organize and write your numbers on your final copy of the project so that when the colour key is followed correctly, the grid will reveal the image from your rough draft.

Step 4: Complete a separate answer key.

**Requirements:**

* The project must include at least thirty numbers; however, you may include more if you prefer.
* You must include your rough draft, a separate answer key, and your reflections.
* Put your name on your project.

**Reflections:** On a separate piece of paper, answer the following questions. Be thoughtful, clear, and specific.

1. Using your mental math and estimation skills, put the five **rational numbers you choose** in order from least to greatest. Ensure that you show how you used your skills so that it is apparent you did NOT use a calculator.
2. Reflect on the importance of rational number skills in the real world. Specifically describe how rational numbers are used and why it would be important to understand them.

A grid of squares with a black text

Description automatically generatedA black and white photo of a long black and white line

Description automatically generatedurn in your rubric with your final project.

**DRAFT**

Colour all natural numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all whole numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all integers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all rational numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all irrational numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A grid of squares with a black text

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Description automatically generatedurn in your rubric with your final project.

**FINAL**

Colour all natural numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all whole numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all integers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all rational numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all irrational numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A grid of squares with a black text

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Description automatically generatedurn in your rubric with your final project.

**KEY**

Colour all natural numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all whole numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all integers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all rational numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Colour all irrational numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_