

**Content and Language Objective:**

**Students will explore the different categories used to label numbers and be able to explain the difference between the different categories.**

**Warm-Up**

**On a note card put your name and write at least three math topics that you struggle with.**

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**Keywords:**

- **Set Braces**
- **Natural Numbers**
- **Whole Numbers**
- **Integers**
- **Rational Numbers**
- **Real Numbers**
- **Irrational Numbers**
- **Approximately Equal**

### Content and Language Objective:

Students will explore the different categories used to label numbers and be able to explain the difference between the different categories.

Set Braces:	are used to enclose elements of a set. { }
Natural #'s:	are the counting numbers. $N = \{ 1, 2, 3, 4, 5, \dots \}$
Whole #'s:	are all of the natural numbers and zero. $W = \{ 0, 1, 2, 3, 4, 5, \dots \}$
Integers:	are natural #'s, whole #'s and negative #'s. $I = \{ -4, -3, -2, -1, 0, 1, 2, 3, 4, \dots \}$
Rational #'s:	are numbers that can be expressed as the ratio of two integers, where the denominator is not 0. Rational #'s can be expressed in decimal form either repeating or terminating. $\text{Rational} = \{ \frac{22}{7}, 0.5, 0.\overline{333}, 0, \dots \}$

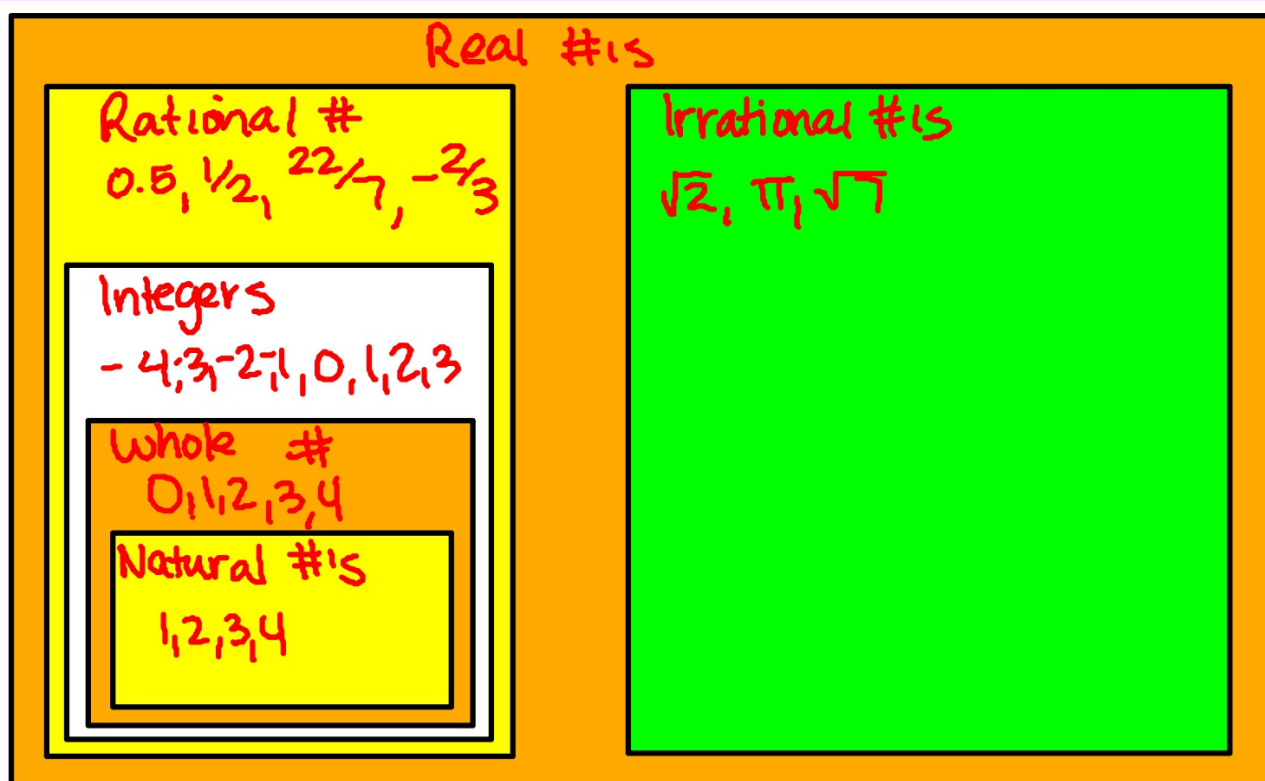
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Irrational #'s	are numbers that cannot be expressed by fractions or a whole number. <b>Irrational:</b> $\{ \pi, \sqrt{2}, \sqrt{7} \}$
Real #'s:	can be represented as decimal numbers. Every fraction has a decimal form, so real numbers include rational #'s. <b>Real:</b> $\{ 0, -1, \frac{22}{7}, \pi, \sqrt{2} \}$
Approximately Equal	means that the solution is an approximation. Used in a variety of ways, such as simplifying fractions, roots, and other situations. $\approx$

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#### Practice:

Classify each number as one or more of the following:  
Natural Number, Whole Number, Integer, or Rational Number

1.)  $\frac{6}{3}$  Natural, Whole, Integer, Rational

2.)  $-1$  Integer, Rational

3.)  $0$  whole number, integer, Rational

4.)  $-\frac{11}{3}$  Rational

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#### Practice:

Classify each number as one or more of the following:  
Natural Number, Integer, Rational Number or Irrational Number

$$5, \quad -1.2, \quad \frac{13}{7}, \quad -\sqrt{7}, \quad -12, \quad \sqrt{16}$$

5 Natural, Rational, Integer  $-\sqrt{7}$  irrational

$-1.2 = -\frac{120}{100}$  Rational  $-12$  integer, rational

$\frac{13}{7}$  Rational  $\sqrt{16}$  rational

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**Practice:**

**A student obtains the following test scores: 81, 96, 79, and 82.**

**a. Find the student's average test score.**

**b. Is this average a natural, a rational or a real number?**

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Warm-up

notes

classwork / homework

tests/quizzes

graphic organizers

