

## Color by Classifying

**Objective:** Students will classify numbers.

**Background Knowledge:** Students should be familiar with various sets that numbers can be classified in (natural, whole, integer, rational, irrational, real, not real).

**Materials:** Color by Classifying worksheet, blue, green, yellow, and black coloring utensils

### **Directions:**

1. Review the various sets to which numbers can be classified. Draw a graphic organizer on the board to help students understand the relationships between the sets.
2. Distribute Color by Classifying worksheets to the students. Explain to students that they are to classify each of the numbers on the worksheet then color in the box using the key at the bottom of the page. Tell students that there are some natural and whole numbers on the worksheet even though that is not listed as a part of the key. Ask students to give an example of a whole number. Then ask what color a whole number should be colored on this worksheet. (Green).
3. Explain that students will have time to work on this by themselves and with a partner. Have students begin working on the activity by themselves for a designated amount of time. Tell them to color in only the ones that they are sure they have classified correctly. They may wish to write the color in the box in pencil before they meet with their partner for any numbers they are unsure how to classify.
4. Allow students to finish the activity working with a partner. When all boxes have been colored in – a picture of a house and garage should appear. The picture is more evident if one student holds up the picture and another looks at it from a distance across the room.
5. To conclude the activity, review with the class the difference between rational and irrational numbers.

### **Activity:**

1. Review the sets to which numbers can be classified. Draw a graphic organizer on the board.
2. Distribute Color by Classifying worksheets to students and go over instructions.
3. Have students begin working on the activity independently.
4. Allow students to work with a partner to complete the activity.
5. Come back together as a class to review the difference between rational and irrational numbers.

**Color by Classifying**

Name \_\_\_\_\_

0.25		1.76	$\frac{1}{5}$	$\sqrt{-36}$	$\frac{5}{8}$	2.75			
	$2\frac{5}{6}$	0.125	$\frac{8}{0}$	$\sqrt{17}$	$\sqrt{-4}$	$\frac{9}{11}$	0.45		$1\frac{1}{87}$
$0.\bar{3}$	5.9	$\sqrt{-83}$	.23924...	$\sqrt{6}$	$\sqrt{56}$	$\frac{15}{0}$	$\frac{1}{3}$	$0.\bar{6}$	$4.\bar{13}$
$\frac{3}{4}$	$\frac{25}{0}$	$\sqrt{84}$	$8\frac{5}{12}$	.78321...	$7.\bar{81}$	$\sqrt{21}$	$\sqrt{-49}$	$\sqrt{-23}$	$3\frac{3}{0}$
$0.\bar{9}$	$5\frac{3}{7}$	.3295...	.9857...	$\sqrt{41}$	$\sqrt{37}$	.4837...	$\sqrt{26}$	$\sqrt{50}$	$\sqrt{67}$
$\sqrt{9}$	28	$\sqrt{145}$	$9.\bar{5}$	$\sqrt{5}$	127	$\sqrt{3}$	$\frac{5}{0}$	$\sqrt{-16}$	$\sqrt{-25}$
$\frac{12}{3}$	-6	.93823...	$\sqrt{15}$	$\sqrt{101}$	$\sqrt{16}$	.3825...	$\sqrt{-100}$	$\frac{9}{0}$	$1\frac{1}{0}$

**BLACK** – Number that is Not Real  
**YELLOW** – Real, Irrational Number

**BLUE** – Real, Rational Number  
**GREEN** – Real, Rational Number, Integer

### Color by Classifying

Name \_\_\_\_\_

**\*\*KEY\*\***

0.25		1.76	$\frac{1}{5}$	$\sqrt{-36}$	$\frac{5}{8}$	2.75			
	$2\frac{5}{6}$	0.125	$\frac{8}{0}$	$\sqrt{17}$	$\sqrt{-4}$	$\frac{9}{11}$	0.45		$1\frac{1}{87}$
$0.\bar{3}$	5.9	$\sqrt{-83}$	.23924...	$\sqrt{6}$	$\sqrt{56}$	$\frac{15}{0}$	$1\frac{1}{3}$	0. $\bar{6}$	$4.\bar{13}$
$3\frac{3}{4}$	$\frac{25}{0}$	$\sqrt{84}$	$8\frac{5}{12}$	.78321...	$7.\bar{81}$	$\sqrt{21}$	$\sqrt{-49}$	$\sqrt{-23}$	$3\frac{3}{0}$
$0.\bar{9}$	$5\frac{3}{7}$	.3295...	.9857...	$\sqrt{41}$	$\sqrt{37}$	.4837...	$\sqrt{26}$	$\sqrt{50}$	$\sqrt{67}$
$\sqrt{9}$	28	$\sqrt{145}$	$9.\bar{5}$	$\sqrt{5}$	127	$\sqrt{3}$	$\frac{5}{0}$	$\sqrt{-16}$	$\sqrt{-25}$
$12\frac{12}{3}$	-6	.93823...	$\sqrt{15}$	$\sqrt{101}$	$\sqrt{16}$	.3825...	$\sqrt{-100}$	$\frac{9}{0}$	$1\frac{1}{0}$

**BLACK** – Number that is Not Real  
**YELLOW** – Real, Irrational Number

**BLUE** – Real, Rational Number  
**GREEN** – Real, Rational Number, Integer

8<sup>th</sup> Grade Unit 2