

8th Grade Math:**Mastery Check****1Benchmark #: 8.1.1.K5 a-c****1****Numbers between zero and one, zero and greater than one****State Language:**

Knows and explains what happens to the product or quotient when: a) a positive number is multiplied or divided by a rational number greater than zero and less than one; b) knows what happens when a positive number is multiplied or divided by a rational number greater than one; c) a nonzero real number is multiplied or divided by zero.

Student Friendly Language:

- Know what happens to a number when you divide or multiply a number by a fraction or decimal less than 1 but not negative.
- Knows what happens to a number when you multiply or divide a number by a number greater than 1.
- Knows what happens when you multiply or divide by zero.

Concept (Students will know):

- *What a rational number is.
- * TLW understand that a number greater than zero and less than one will be a positive fraction or decimal.
- * Will know the term “undefined” means can’t do or is impossible.
- * Will know that when you multiply a real number by a positive fraction or a decimal, the product will be less than the number.
- * will know that when you divide a number by a positive fraction or decimal the quotient will be greater than the number.
- * Will know that when you multiply a positive number by a number greater than one, the product will be greater than the number.
- * Will know that when you multiply a number by zero, the answer will be zero,
- * Know that when a real number is divided by zero, the quotient is undefined.

Skills (Students will do):

- See the cause and effect of multiplying or dividing a positive real number by a fraction or decimal.
- Determine what the product or quotient will be when multiplying or dividing a positive real number by a number greater than one.
- Determine the product or quotient and the difference between multiplying and dividing by zero.

DOK Level:**3****Big Ideas:**

- *Understanding what numbers between zero and one are.
- *Draw conclusions as to what happens when numbers are multiplied or divided by fractions or decimals.
- *Understand what the answers will be when you multiply or divide by zero or numbers greater than one.

Essential Questions:

- 1) What is the product when you multiply a positive number by a rational number greater than zero and less than one?
- 2) What is the quotient when you divide a positive number by a rational number greater than zero and less than one?
- 3) What is the product when a positive number is multiplied by a rational number greater than one?
- 4) What is the product when a number is multiplied by zero?
- 5) What is the quotient when a number is divided by zero?
- 6) What is a rational number?
- 7) What does the word undefined mean?

Core Materials**Supplemental Materials:**

Teacher generated worksheets.
Number lines showing numbers between 0 and 1.
Study Island

Teaching Strategies:

- Drawing a number line and showing what numbers are greater than zero and less than one. (Between 0 and 1)
- Show what happens when you multiply by 1 or zero and differentiate what happens when it is now multiplied by a fraction or decimal.
- Guided practice.

Mastery Check Items: