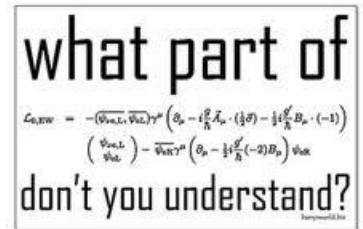


Dear Parents/Guardians,

The next Unit in your child's mathematics class this year is *Let's Be Rational: Understanding Fraction Operations*. This is the second of three number units that focus on developing concepts and procedures for fractions, decimals, and percents.



In this Unit, your child will focus on understanding and developing systematic ways to add, subtract, multiply, and divide fractions. While working on this Unit, students will investigate many interesting problem situations that help them to develop algorithms for fractions computation. In addition, students will use number sense, benchmarks, and operation sense to estimate solutions, helping them to decide if exact answers are reasonable. Students will compute with decimals and percents in a later Unit, Decimal Operations.

In your child's notebook, you can find worked-out examples, notes on the mathematics of the Unit, and descriptions of the vocabulary words. You can help with homework and encourage sound mathematical habits during this Unit by asking questions such as the following:

- What models or diagrams might help you understand the situation and the relationships between the quantities in the problem?
- What models or diagrams might help you decided which operation is useful when solving a problem?
- What is a reasonable estimate for the answer?
- What strategies or algorithms can help you solve this problem?

You can help your child with is or work in several ways:

- There are many approaches for adding, subtracting, multiplying, and dividing fractions. Your child may use different ideas and algorithms from the ones you learned. Be open to these approaches. Encourage your child to share these methods with you to help them make sense of what they are studying.
- Ask your child to tell you about a problem that he or she enjoyed solving. Ask him or her to explain the ideas in the problem.
- Look over your child's homework and make sure all questions are answered and explanations are clear.

In your child's math notebook, you can find worked-out examples, notes on the mathematics of the Unit, and descriptions of the vocabulary words.

As part of the assessment for this Unit, your child may be asked to do a project called “My Favorite Number.” As students work through the Unit, they apply their new knowledge to create projects that include everything they have learned about their chosen number and its properties.

You can help your child with his/her work for this Unit in several ways:

- Have your child share his/her mathematics notebook with you, showing you what he/she has recorded about numbers. Ask your child to explain why these ideas are important.
- Ask your child to explain the rules of playing the Factor Game and the Product Game. If you have time, offer to play a game.
- Look over your child’s homework; make sure that all questions are answered and the explanations are clear.

While all of the Standards of Mathematical Practice are cultivated by teachers and developed by students throughout the course, students spend significant time modeling mathematics in *Let’s Be Rational* with diagrams, number lines, and symbolic representations. The Unit focuses on understanding when and how to use algorithms for computing with fractions with all four operations (addition, subtraction, multiplication, and division).

A few important mathematical ideas that your child will learn in *Let’s Be Rational* are on the next page. As always, if you have any questions or concerns about this Unit or your child’s progress in the class, please feel free to call me. Would you please sign and return the bottom half of this letter indicating that you have read the information. Thank you.
Sincerely,

HMS/GMS 6th Grade Math Teachers

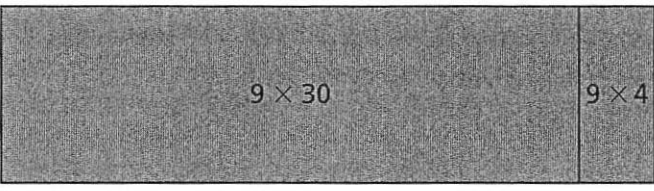


Important Concepts	Examples
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Order of Operations
 upon order for solving math problems. The acronym PEMDAS is used to help remember the order of the steps.

1. Compute any expression within parentheses. Order of Operations
 2. Compute any exponent. The universally agreed
 3. Do all multiplication and division in order from left to right.
 4. Do all addition and subtraction in order from left to right. = 20
- $(4 + 6) \cdot 2 = (10) \cdot 2$

Distributive Property
 The Distributive Property shows how a number can be written as two equivalent expressions. A number can be expressed as both a product and a sum. Multiplication is distributed over addition. It can be helpful for understanding the structure of multidigit multiplication.

$30 + 4$


$$9 \cdot 34 = 9(30 + 4)$$

$$= 9(30) + 9(4)$$

$$= 270 + 36$$

$$= 306$$

Prime
 A number with exactly two factors, 1 and the number

Examples of primes are 11, 17, 53, and 101. The number 1 is not a prime number. All of the factors of 11 are 1 and 11. All of the factors of 17 are 1 and 17. itself.

Composite
 A whole number with factors other than itself and 1 or a whole number that is not prime.

Some composite numbers are 6, 12, 20, and 1001. Each of these numbers has more than two factors. All of the factors of 6 are 1, 2, 3, 6. All of the factors of 1,001 are 1, 7, 11, 13, 77, 91, 143, and 1001.

Common Multiples
 two or more and I-Q. numbers share. The least common multiple (LCM) of 12 and 18 is 36.

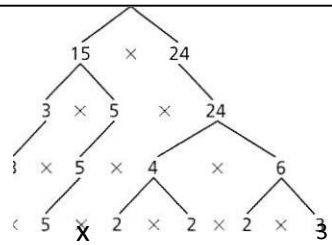
The first few multiples of 5 are 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, A multiple that two or more and I-Q. numbers share. The least common multiple (LCM) of 12 and 18 is 36. The first few multiples of 7 are 7, 14, 21, 28, 35, 42, 49, 56, 63, n, 77, 84, and 91. From these lists you can see that two common multiples of 5 and 7 are 35 and 70. There are more common multiples that can be found.

Common Factors The number 7 is a common factor of 14 and 35 because 7 is a factor of A factor that two or more 14 ($14=7 \times 2$) and 7 is a factor of 35 ($35=5 \times 7$). numbers share. The greatest common factor (GCF) of 12 and 18 is 6.

Prime Factorization

prime factorization of 360 is
A product of prime numbers,
desired number.

The prime factorization of a
number is unique except for
order of the factors. This is the Fundamental
Theorem of Arithmetic.



$$2 \times 2 \times 2 \times 3 \times 3 \times 5$$

360 The

Although you can switch the order of the factors, every prime product string for 360 will have three 2s, two 3s, and one 5.

resulting in the

$$360 = 2^3 \times 3^2 \times 5$$