

6th Grade Unit 1: The Number System

Prerequisite Skills:

- Place value
- Multiplication of multi-digit whole numbers
- Division of multi-digit whole numbers
- Prime and composite numbers
- Order positive rational numbers on a number line

UNIT OVERVIEW: In this unit you will explore the number system. Initially, we will learn that **factors** break a number down evenly. We will explore and develop our understanding of the fact that certain numbers have many factors (**composite** numbers), while others only have 2 factors (**prime** numbers). You will identify the **greatest common factor** of 2 or more whole numbers. You will learn that **multiples** are the **products** that result from multiplying a given number or numbers by other whole numbers. You will determine the **least common multiple** of 2 or more whole numbers. You will apply their knowledge of factors and multiples to solve real world problems. You will utilize the **distributive property** to create equivalent numerical expressions. You will build on your current understanding of number lines to include the ordering of **integers** and **rational numbers**. You will understand how to compare rational numbers, as well as how to relate rational numbers to real life situations.

Learning Target 1: I can identify the GCF of 2 or more whole numbers.		6.NS.4, 6.NS.2
		Example
<input checked="" type="checkbox"/> A) List factors of given whole numbers	18: 1, 2, 3, 6, 9 & 18 because... $1 \times 18 = 18, 2 \times 9 = 18 \text{ \& } 3 \times 6 = 18$	
<input checked="" type="checkbox"/> B) Identify the largest factor that two or more whole numbers have in common	18: 1, 2, 3, 6, 9, 18 24: 1, 2, 4, 6, 8, 12, 24 GCF = 6	

Learning Target 2: I can identify the LCM of two or more whole numbers.		6.NS.4
		Example
<input checked="" type="checkbox"/> A) List the multiples of given whole numbers	8: 8, 16, 24, 32, 40, 48... because $8 \times 1 = 8, 8 \times 2 = 16, 8 \times 3 = 24...$	
<input checked="" type="checkbox"/> B) Identify the smallest multiple that two or more numbers have in common.	8: 8, 16, 24, 32, 40 12: 12, 24, 36 LCM = 24	

Learning Target 3: I can recognize situations where the GCF or LCM is required		6.NS.4, MP.1
		Example
<input checked="" type="checkbox"/> A) Read a word problem and recognize that the GCF of 2 or more whole numbers is required to correctly answer the question.	Kristen has 48 chocolate chip cookies and 36 sugar cookies. She is creating baskets of cookies for her friends. She wants to create the largest number of cookie baskets possible. There must be an equal number of chocolate chip and sugar cookies in each basket. What is the greatest number of baskets that can be created?	

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Learning Target 4: I can use the distributive property to generate equivalent numerical expressions.		6.NS.4
	Example	
<input checked="" type="checkbox"/> A) Create equivalent expressions involving numbers and operations using the distributive property.	$2(3 + 4) = 2(3) + 2(4)$ $= 6 + 8 = 14$	

Learning Target 5: I can compare and order integers.		6.NS.5, 6.NS.6, 6.NS.7
	Example	
<input checked="" type="checkbox"/> A) Identify the absolute value of an integer as the integer's distance from 0	$ 7 = 7$ because 7 is 7 spots away from 0 on a number line $ -7 = 7$ because -7 is 7 spots away from 0 on a number line	
<input checked="" type="checkbox"/> B) Order a set of integers from largest to smallest or smallest to largest and apply this information to real world situations	Order -9, 5, 6, -8, -6, 3 from least to greatest -9, -8, -6, 3, 5, 6 The greater the absolute value of a positive integer, the larger the integer The greater the absolute value of a negative integer, the smaller the integer	

Learning Target 6: I can compare and order decimals.		6.NS.6, 6.NS.7
	Example	
<input checked="" type="checkbox"/> A) Determine which of two given decimals is greater or smaller using < or >	$5.01 < 5.1$ $0.75 > 0.7$	
<input checked="" type="checkbox"/> B) Order a set of decimals from largest to smallest or smallest to largest and apply this information to real world situations	Chris earned the following amounts babysitting: \$9.05, \$10.00, \$10.70, \$10.07, \$9.50 Order them from least to greatest 9.05, 9.50, 10.00, 10.07, 10.70	

Learning Target 7: I can compare and order fractions.		6.NS.6, 6.NS.7
	Example	
<input checked="" type="checkbox"/> A) Determine which of two given fractions is greater or smaller by finding a common denominator and then using < or >	$\frac{1}{2} > \frac{1}{3}$ because the common denominator would be 6, so you change each fraction and $\frac{3}{6} > \frac{2}{6}$	
<input checked="" type="checkbox"/> B) Order a set of fractions from largest to smallest or smallest to largest and apply this information to real world situations	Four bags of candy weigh the following: $\frac{2}{5}$ oz., $\frac{1}{2}$ oz., $\frac{5}{8}$ oz., $\frac{3}{4}$ oz. Order them from greatest to least. $\frac{2}{5} = \frac{16}{40}$, $\frac{1}{2} = \frac{20}{40}$, $\frac{5}{8} = \frac{25}{40}$, $\frac{3}{4} = \frac{30}{40}$ $\frac{3}{4}$, $\frac{5}{8}$, $\frac{1}{2}$, $\frac{2}{5}$	

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Learning Target 8: I can convert between fractions and decimals.		6.NS.6, 6.NS.7
		Example
<input checked="" type="checkbox"/> A) Utilize division to convert a fraction to a decimal	$\frac{1}{2} = 0.5$ because $1 \div 2 = 0.5$	
<input checked="" type="checkbox"/> B) Understand place value to correctly create a fraction from a decimal and then simplify the fraction if necessary	$0.5 = \frac{1}{2}$ because the 5 is in the tenths place so 0.5 because $\frac{5}{10}$ and 5 and 10 can both be divided by 2 to equal $\frac{1}{2}$	

Vocabulary			
Factor	Greatest common factor	Rational number	Integer
Multiple	Least common multiple	Number line	Opposite
Prime number	Distributive property	Prime factorization	Absolute Value
Composite number			

Department Assessments	
Mastery Quizzes <ul style="list-style-type: none"> ▪ Mastery Quiz #1: <ul style="list-style-type: none"> ✓ I can identify the greatest common factor for two or more numbers ✓ I can identify the least common multiple for two or more numbers. ✓ I can recognize situations that require the greatest common factor of or the least common multiple of two or more whole numbers. ▪ Mastery Quiz #2: <ul style="list-style-type: none"> ✓ I can generate equivalent expressions using the distributive property. ✓ I can compare and order integers. ✓ I can compare and order decimals. ▪ Mastery Quiz #3: <ul style="list-style-type: none"> ✓ I can compare and order fractions. ✓ I can convert between fractions and decimals. 	Dates: <ul style="list-style-type: none"> ▪ ▪ ▪
Unit Test <ul style="list-style-type: none"> ▪ Part A: Department Wide: Multiple Choice questions 	Date: <ul style="list-style-type: none"> ▪
Performance Task <ul style="list-style-type: none"> ▪ Part B: Department Wide: Extended Response questions 	Date: <ul style="list-style-type: none"> ▪

Products	
Culminating Project	
<ul style="list-style-type: none"> ▪ 	<ul style="list-style-type: none"> ▪ Given: ▪ Due:

Any adjusted dates or changes in this unit's outline will be noted on our online gradebook. Please contact the teacher if you do not have your log in information.
Please feel free to contact the teacher with any further questions or concerns!