Unit 1: Mathematics - Operations and Algebraic Thinking (Grade: 4)

Content Area: **Mathematics**
Course(s): **Math 4**
Time Period: **Marking Period 1**
Length: **September**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

MA.4.OA.A	Use the four operations with whole numbers to solve problems.
MA.4.OA.A.1	Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
MA.4.OA.A.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
MA.4.OA.A.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
MA.4.OA.B.4	Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.
MA.4.OA.C.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.
SEL.PK-12.2.2	Recognize the skills needed to establish and achieve personal and educational goals
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals
SEL.PK-12.3.4	Demonstrate an awareness of the expectations for social interactions in a variety of settings
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills
SEL.PK-12.5.1	Establish and maintain healthy relationships
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- • How can place value understanding help us with comparing, ordering, and rounding?
- • What symbols can be used to compare numbers?
- • Why is it important to have quick recall of multiplication and division?

- • Why is it important to identify patterns?
- •How can numbers be expressed, ordered, and compared?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- Students will understand that by identifying patterns helps reinforce facts and develop fluency with operations.
- Students will understand that different symbols are used to compare numbers.
- Students will understand that knowing their multiplication facts can help in real life situations.
- Students will understand that numbers can be compared abstractly and quantitatively.

Content

Students will be able to:

• solve multi-step word problems with whole numbers using the four operations.
• write an algebraic expression.
• find all factor pairs for a whole number less than 100.
• identify patterns and apply the rule.
• identify and verbalize which quantity is being multiplied and which number tells how many times.
• use mental computation and estimation strategies to check the reasonableness of their answer.
• use drawings and algebraic equations to represent a word problem.
• list all factors of a given number.
• determine whether a number is prime or composite.
• investigate different patterns to find rules, identify features in the patterns, and justify the reason for those features.

Vocabulary students will know:

array
product
factors
multiple
Commutative Property of Multiplication
Zero Property of Multiplication
Identity Property of Multiplication
Distributive Property
inverse operations
fact family
repeating pattern

Resources

Envision2020 Resources:

- Textbook
- https://reader.savvasrealize.com/#/login
- Lesson Flipcharts
- Daily Common Core Review
- Quick Checks
- Mad Minutes
- Envision Topic Tests
- Manipulatives
- Reteaching Pages
- Practice Pages
- Enrichment Pages
- Math Centers

Specific Items for Operations and Algebraic Thinking:

- Online math games from teacher website.
- One Grain of Rice by: Demi
- If You Hopped like a Frog by: David Schwartz
- The Math Curse by: Jon Scieszka

- Envision Textbook