Unit 1: Greatest Common Factor, Least Common Multiple and Divisibility

Content Area: **Mathematics**
Course(s):
Time Period: **Trimester 1**
Length: **10 days**
Status: **Published**

Summary

In this unit, sixth-grade students will explore the concepts of divisibility, identifying rules for determining if numbers can be divided evenly. They will also delve into finding the Greatest Common Factor (GCF) and Least Common Multiple (LCM) of numbers, helping them understand relationships between numbers. Students will also apply knowledge of divisibility, GCF, and LCM concepts to solve real-world and mathematical problems.

Revised Date: June 2024

Standards

1	Make sense of problems and persevere in solving them
2	Reason abstractly and quantitatively
3	Construct viable arguments and critique the reasoning of others
P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
4	Model with mathematics
P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
5	Use appropriate tools strategically
6	Attend to precision
3.a	Identify complex, interdisciplinary, real-world problems that can be solved computationally.
3.b	Decompose complex real-world problems into manageable sub-problems that could integrate existing solutions or procedures.
7	Look for and make use of structure
8	Look for and express regularity in repeated reasoning
6.NS.B	Compute fluently with multi-digit numbers & find common factors & multiples
6.NS.B.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

Essential Questions

- How can divisibility rules help us determine if a number is divisible by another number?
- How do math ideas interconnect with one another?
- What strategies can we use to find the Greatest Common Factor (GCF) and Least Common Multiple (LCM) of two or more numbers?

Enduring Understandings

- Divisibility rules provide systematic ways to determine if numbers can be evenly divided by other numbers, facilitating efficient problem-solving in mathematics.
- LCM is a tool to find common denominators.
- The GCF is a tool that should be used to help simplify fractions.
- The Greatest Common Factor (GCF) represents the largest shared factor between two or more numbers, while the Least Common Multiple (LCM) represents the smallest common multiple, both of which are fundamental concepts in number theory.

Students Will Know

- Dividing both the numerator and denominator by the GCF will result in a fraction in simplest form.
- Divisibility rules for 2, 3, 4, 5, 6, 9 and 10.
- They can make connections between Divisibility, GCF, and LCM and use these concepts to analyze and solve problems effectively.

Students Will Be Skilled At

- Applying divisibility rules to determine if numbers are divisible by other numbers.
- Finding the GCF and LCM of given numbers.

Learning Plan

Day 1-2: Introduction to Divisibility

- Discuss divisibility rules for numbers 2, 3, 4, 5, 6, 9, and 10.
- Practice applying divisibility rules with examples.

Day 3-4: Greatest Common Factor (GCF)

- Introduce the concept of GCF and its importance in simplifying fractions.
- Teach methods for finding the GCF, such as listing factors and simplifying fractions.
- Have students practice finding GCF, including word problem applications.

Day 5: Quiz on Divisibility and GCF

Day 6-7: Least Common Multiple (LCM)

- Practice finding the LCM of 2 or more numbers.
- Include word problems/real world applications

Day 8-9: Application/Review and Problem-Solving of both GCF and LCM

Day 10: Unit Test

- Administer a comprehensive unit test covering divisibility, GCF and LCM.

Total number of days: 10

Assessment

- Formative: Daily assessments using examples from class notes, iReady MyPath, Big Ideas Math problems, teacher check-ins and NJSLA test bank problems
- Summative: Teacher-created assessments, NJSLA test bank problems, Big Ideas Math unit assessments
- Benchmark: iReady diagnostic assessments
- Alternative Assessments: Student-centered activities such as scavenger hunts, various projects involving real world applications, and adaptive learning tasks in iReady, Khan Academy, and Big Ideas Math

Materials

Core Instructional Materials: Core Book List including Big Ideas Math Modeling Real Life Online Textbook, Big Ideas Student Journal Workbook

Supplemental Instructional Materials: Khan Academy, iReady, IXL (for intervention)

Suggested Strategies for Modifications

Suggested Strategies for Modifications for Grade 6