

Unit 5 - Chapter 5: Factors, Multiples, and Patterns

Content Area: **Mathematics**
Course(s): **Math 4**
Time Period: **November**
Length: **2 weeks**
Status: **Published**

Unit Summary

In this unit, students will gain familiarity with factors and multiples. They will use arrays and examples to see visual examples of factor pairs. The Commutative Property of Multiplication allows students to model two different arrays for each factor pair. The students will also look into what makes numbers prime or composite. We will use the strategy of make a list to help aid in the collection of factor pairs for a number. Later in the unit, students will explore number patterns to look for rules.

Standards

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.
TECH.8.1.5	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Student Learning Objectives

Students will learn to:

- find all the factors of a number by using models.
- determine whether a number is a factor of a given number.
- solve problems with common factors by using the strategy *make a list*.
- understand the relationship between factors and multiples.
- determine whether a number is a multiple of a given number.
- determine whether a number is prime or composite.
- generate a number pattern and describe features of the pattern.

Essential Questions

- How can you use models to find factors?
- How can you tell whether one number is a factor of another number?
- How can you use the *make a list* strategy to solve problems with common factors?
- How are factors and multiples related?

- How can you tell whether a number is prime or composite?
- How can you make and describe patterns?

Enduring Understanding

Students understand that...

- prime numbers have exactly two factors; 1 and itself.
- composite numbers have more than 2 factors.
- Making a List is a strategy to help find common factors.
- divisibility rules help determine if a number is a factor of another number.

Application

Students will be able to independently use their learning to:

- find all the factors of a number by using models
- determine whether a number is a factor of a given number.
- solve problems with common factors by using the strategy *make a list*.
- understand the relationship between factors and multiples.
- determine whether a number is a multiple of a given number.
- determine whether a number is prime or composite.
- generate a number pattern and describe features of the pattern.

Skills

Students will be skilled at:

- finding all the factors of a number by using models
- determining whether a number is a factor of a given number.
- solving problems with common factors by using the strategy *make a list*.
- understanding the relationship between factors and multiples.
- determining whether a number is a multiple of a given number.
- determining whether a number is prime or composite.
- generating a number pattern and describe features of the pattern.

