

## Unit 2: Factors and Multiples

Dear Parents/Guardians,

Unit 2 begins by reviewing prime numbers, composite numbers and factors. In Lesson 1, students explore factors as dimensions of rectangles and through the Factor Game. They determine the greatest common factor (GCF) of two natural numbers and apply the GCF to simplifying fractions. In Lesson 2, students explore multiples in the Product Game. They determine the least common multiple (LCM) of two natural numbers and apply the LCM to adding and subtracting fractions. In Lesson 3, students learn other strategies for determining the GCF and LCM of two natural numbers and solve problems in context.

### Finding the Greatest Common Factor (GCF)

Students determine the greatest common factor of two natural numbers by listing all of the factors for each number and finding the greatest factor they share.

**Example:** Find the GCF of 32 and 40.

<b>Factors of 32</b>	1, 2, 4, 8, 16, 32
<b>Factors of 40</b>	1, 2, 4, 5, 8, 10, 20, 40

Common Factors of 32 and 40: 1, 2, 4, 8

Greatest Common Factor (GCF) of 32 and 40: 8

### Finding the Least Common Multiple (LCM)

Students determine the least common multiple of two natural numbers by listing several multiples of each number and finding the least value they share.

**Example:** Find the LCM of 32 and 40.

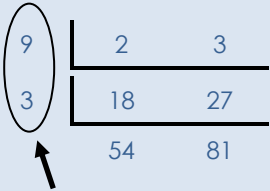
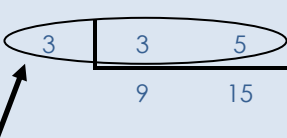
<b>Multiples of 32</b>	32, 64, 96, 128, 160, 192, 224, 256, 288, 320...
<b>Multiples of 40</b>	40, 80, 120, 160, 200, 240, 280, 320...

Listed Common Multiples of 32 and 40: 160 and 320

Least Common Multiple (LCM) of 32 and 40: 160

### Using Factor Ladders for GCF and LCM

Students explore factor ladders as an alternative strategy for determining the GCF and LCM of two natural numbers.

<p><b>Determine the GCF of 54 and 81.</b></p> <p>Divide both numbers by a common factor. Continue until 1 is the only common factor.</p>  <p>Common factors: 9 and 3 GCF of 54 and 81: <math>9 \times 3 = 27</math></p>	<p><b>Determine the LCM of 9 and 15.</b></p> <p>Divide both numbers by a common factor. Continue until 1 is the only common factor.</p>  <p>Multiply the common factors with the remaining factors. Common factor: 3 Remaining factors: 3 and 5 LCM of 9 and 15: <math>3 \times 3 \times 5 = 45</math></p>
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**By the end of the unit, your student should know...**

- How to find the greatest common factor (GCF) of two numbers [Lesson 2.1]
- How to find the least common multiple (LCM) of two numbers [Lesson 2.2]
- How to apply the GCF and the LCM in fraction arithmetic [Lessons 2.1, 2.2]
- How to solve problems in context using the GCF or the LCM [Lesson 2.3]

### Additional Resources

- For definitions and additional notes please refer to Student Resources at the end of the unit.
- For determining the GCF by listing factors: <https://bit.ly/3e4LOkh>
- For determining the LCM by listing multiples: <https://youtu.be/7twRSmgcrLM>
- For determining the GCF using the ladder method: <https://youtu.be/myJraeUdGNI>
- For determining the LCM using the ladder method: <https://youtu.be/b6qehkDuioQ>