Grade 6 Mathematics
Week of October 26 – October 30
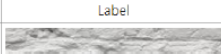
Lesson 1.6: GCF & LCM

Lesson Materials

- Lessons for Section 1.6 GCF/LCM
- GCF/LCM Learning Guide (This PDF)

Use the link above to open the lessons for Section 1.6 GCF/LCM. Remember: on the lesson page, use the arrow next to the "Table of Contents" at the **top of the page** to move through the lessons. You can also click on the Table of Contents to open the menu so you can jump to a specific lesson page.

Work through the online lessons. You can work at your own pace or follow the suggested schedule below. Complete the activities in your Learning Guide as you work through the lessons. You can print the Learning Guide, or, copy out the questions on a separate piece of paper. Be sure to try the games and practice quizzes as you make your way through the online lesson book.

Suggested Lesson Schedule

Monday	Thursday
• Factors	• Multiples
• Identify the Factors	• Examples
• Prime or Composite	• LCM
• Prime Factors	• LG #11-12 p. 24
• Prime Factorization	**Friday**
• LG 1.6 #1-5, p. 19-20	• Factor and Multiples
Tuesday	• LCM Game
• Factoring Tricks	• GCF/LCM Problems
• Divisibility Magic	• LG #13-17, p. 25-27
• LG #6-8, p. 20-21	
Wednesday	
• GCF	
• GCF with Venn Diagram	
• GCF Game	
• Fun with Factors	
• LG #9-10, p. 22-23	

1.6 GREATEST COMMON FACTOR/LOWEST COMMON DENOMINATOR (GCF/LCD)

1. Circle all of the prime numbers. *Reminder: Prime numbers only have 2 factors.*

5	12	3	7	20	6	1

13	10	4	2	9	31	14

2. Circle all of the composite numbers. *Reminder: Composite numbers have more than 2 factors.*

15	2	16	17	29	27	8

10	0	9	6	11	3	20

3. Put a circle around the numbers that are neither prime nor composite.

4	1	10	12	0	9	16

4. Find all of the factors of each number.

Ex. 14   14 = ___*7*___ × ___*2*___   Factors: ___*1, 2, 7, 14*___
          14 = ___*14*__ × ___*1*___

a. 12   12 = _____ × _____   Factors: _____
          12 = _____ × _____
          12 = _____ × _____

b. 24   24 = _____ × _____   Factors: _____
          24 = _____ × _____
          24 = _____ × _____
          24 = _____ × _____

c. 9   9 = _____ × _____   Factors: _____

             9 = _____ × _____

d. 45   45 = _____ × _____   Factors: _____

             45 = _____ × _____

             45 = _____ × _____

5. Find all of the factors of each number. You can use the same method as you did in Question 3 if you wish.

   a. 18

   b. 28

   c. 100

   d. 21

6. Find all of the **prime** factors of each number and then write the prime factorization for that number. Use a factor tree to determine your answer.

   Ex. 18

   ```
      /  \
     9    2
    / \
   3   3
   ```
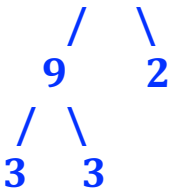
   Prime Factorization: *2 × 3 × 3*

   a. 12   b. 28

   Prime Factorization: _____   Prime Factorization: _____

c. 70   d. 24

Prime Factorization: _____   Prime Factorization: _____

7. Match the divisibility rule to the factor.

_____   Divisible by 4   a. Number ends in **0** or **5**

_____   Divisible by 3   b. The last 2 digits of the number are divisible by **4**

_____   Divisible by 10   c. The sum of the digits of the number is divisible by **3**

_____   Divisible by 5   d. Number is divisible by both **2** and **3**

_____   Divisible by 2   e. Number ends in **0, 2, 4, 6,** or **8** (ie. an even number)

_____   Divisible by 6   f. Number ends in **0**

8. Find and circle the factors of each number below by using divisibility rules.

280	84	375
is divisible by	is divisible by	is divisible by
2 3 4 5 6 10	2 3 4 5 6 10	2 3 4 5 6 10

653	916	4530
is divisible by	is divisible by	is divisible by
2 3 4 5 6 10	2 3 4 5 6 10	2 3 4 5 6 10

9. Find the Greatest Common Factor of each of these pairs of numbers. Use the listing method.

    a. 12, 30   Factors of 12 _____

                  Factors of 30 _____

                  GCF _____

    b. 9, 15   Factors of 9 _____

                  Factors of 15 _____

                  GCF _____

    c. 22, 11   Factors of 22 _____

                  Factors of 11 _____

                  GCF _____

    d. 20, 25   Factors of 20 _____

                  Factors of 25 _____

                  GCF _____

10. Find the Greatest Common Factor of each of these pairs of numbers. Use the prime factorization method for these questions. *Reminder: To find the prime factorization for a number, you need to create a factor tree or* a venn diagram.

    a. 18, 24

        Prime Factorization of 18 _____

        Prime Factorization of 24 _____

        Multiplication of common prime numbers _____
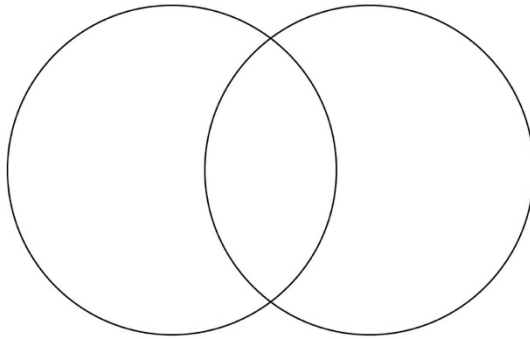
        GCF _____

b. 112, 42

Prime Factorization of 112 _____

Prime Factorization of 42 _____

Multiplication of common prime numbers _____

GCF _____

c. 72, 108

Prime Factorization of 72 _____

Prime Factorization of 108 _____

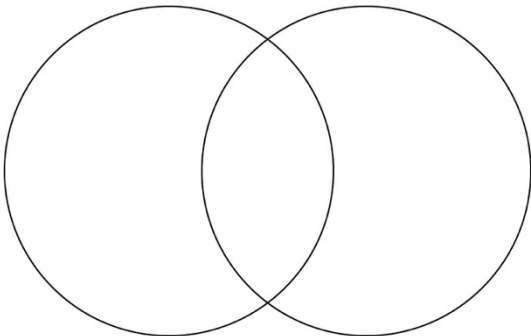Multiplication of common prime numbers _____

GCF _____

d. 176, 550

Prime Factorization of 176

Prime Factorization of 550

Multiplication of common prime numbers

GCF _____

11. Write out the first six multiples of each number.

   Ex. 4   _4, 8, 12, 16, 20, 24_

   a. 3 _____

   b. 6 _____

   c. 12 _____

   d. 7 _____

12. Find the Lowest Common Multiple for each set of numbers. Use the listing of multiples method.

   a. 4, 6

   Multiples of 4_____

   Multiples of 6_____

   LCM _____

   b. 5, 15

   Multiples of 5_____

   Multiples of 15_____

   LCM _____

   c. 9, 7

   Multiples of 9_____

   Multiples of 7_____

   LCM _____

   d. 12, 18

   Multiples of 12_____

   Multiples of 18_____

   LCM _____

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13. Find the Lowest Common Multiple for each set of numbers. Use the prime factorization method. Show the factor tree for each number. _Reminder:_ _When multiplying the factors of both numbers together, common factors of both numbers are only represented once._

   a. 15, 12

        Prime Factorization of 15   _____

        Prime Factorization of 12   _____

        Multiplication of factors   _____

        LCM _____

   b. 22, 6

        Prime Factorization of 22   _____

        Prime Factorization of 6   _____

        Multiplication of factors   _____

        LCM _____

   c. 36, 54

        Prime Factorization of 36   _____

        Prime Factorization of 54   _____

        Multiplication of factors   _____

        LCM _____

d. 40, 35

Prime Factorization of 40   _____

Prime Factorization of 35   _____

Multiplication of factors   _____

LCM _____

14. Natalie has 30 hazelnuts and 40 almonds. She wants to put them in equal groupings without leaving any out. What is the largest number of groups she can make? *Hint: You are asked to divide the numbers into smaller amounts, therefore you need to find the GCF.*

15. Two trains leave the station at the same time but on different tracks. One blows its whistle every 6 minutes. The other blows its whistle every 9 minutes. When will the trains blow their whistles at the same time? *Hint: You are asked about an event that keeps reoccurring, therefore you need to find the LCM.*

16. The Math Counts Club had a party at school. There were 20 cookies and 40 slices of pizza to be shared equally. The pizza and cookies were divided evenly among the students and there was nothing left over. How many students could have been at the party? _Hint: There is more than one answer._ List as many as you can.

17. At the movie theatre, they give out a free drink to every 25th customer and a free bag of popcorn to every 10th customer. On Monday, 200 customers came to the theatre. How many people received both free items?