

<b>Chapter 1</b>	<b>Numerical Expressions and Factors</b>
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Date:	<b>1.6 Least Common Multiples</b>
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Essential Question	How can you find the least common multiple of two numbers?
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<b>Vocab</b>	<table border="1"><tr><td>common multiples</td><td>multiples that two numbers have in common</td></tr><tr><td>least common multiple LCM</td><td>the least, or smallest, multiple that two numbers have</td></tr></table>	common multiples	multiples that two numbers have in common	least common multiple LCM	the least, or smallest, multiple that two numbers have
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# Composition Book

## Lesson 1.6 LCM

1) Find the LCM of 6 and 8.

(List the multiples of each number.)

multiples of 6

6, 12, 18, 24, 30, 36, 42, 48

multiples of 8

8, 16, 24, 32

**Hint:** When you are listing multiples, start with the given number and keep adding that number to the sum.

**The LCM of 6 and 8 is 24.**

2) **Find the LCM of 16 and 20.**

(List the multiples of each number.)

multiples of 16    16, 32, 48, 64, **80**, 96

multiples of 20    20, 40, 60, **80**, 100

**The LCM of 16 and 20 is 80.**



Complete problems 1-3 on your notes page.

Find the LCM of the numbers using lists of multiples.

1) 3, 8

3, 6, 9, 12, 15, 18, 21, (24)

8, 16, (24)

The LCM for 3 and 8 is 24.

2) 9, 12

9, 18, 27, (36)

12, 24, (36)

The LCM for 9 and 12 is 36.

3) 6, 10

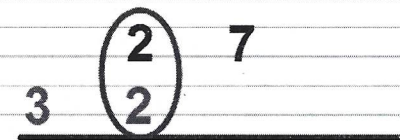
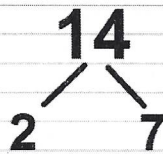
6, 12, 18, 24, (30)

10, 20, (30)

The LCM for 6 and 10 is 30.

3) Find the LCM of 14 and 6.

Use Prime Factorization.



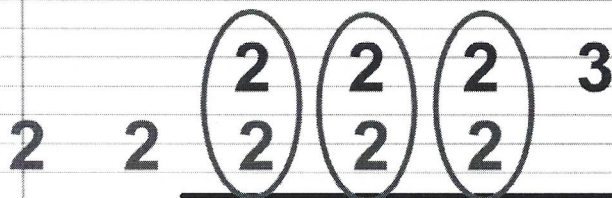
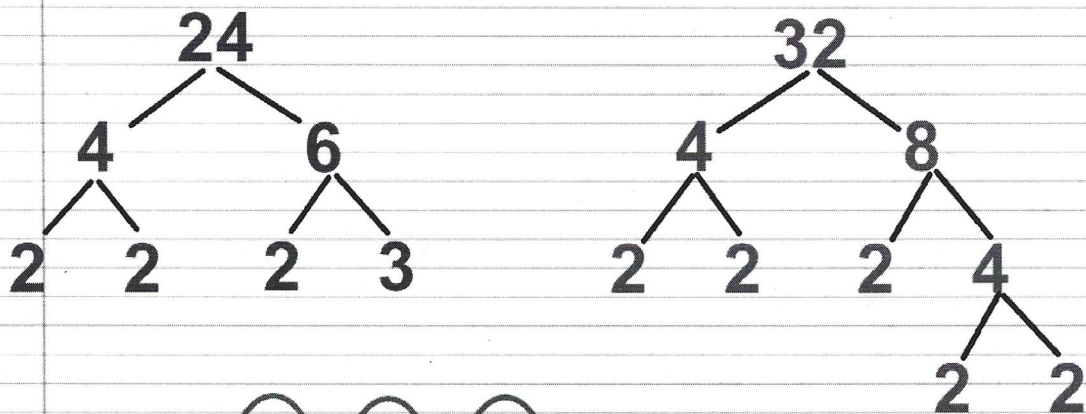
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$$3 \times 2 \times 7 = 42$$

The LCM of 14 and 6 is 42.

4) Find the LCM of 24 and 32.

Use Prime Factorization.



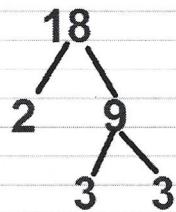
$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 = 96$$

The LCM of 24 and 32 is 96.

Complete problems 4 and 5 on your notes page.

Find the LCM of the numbers using prime factorization.

4) 14, 18



$$2 \cdot 7$$

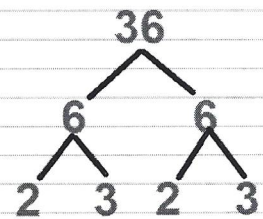
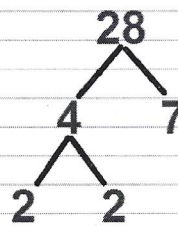
$$2 \cdot 3 \cdot 3$$

$$3 \quad 3 \quad \begin{matrix} \textcircled{2} \\ \textcircled{2} \end{matrix} \quad 7$$

$$3 \times 3 \times 2 \times 7 = 126$$

The LCM of 14 and 18 is 126.

5) 28, 36



$$2 \cdot 2 \cdot 7$$

$$2 \cdot 2 \cdot 3 \cdot 3$$

$$3 \quad 3 \quad \begin{matrix} \textcircled{2} \\ \textcircled{2} \end{matrix} \quad \begin{matrix} \textcircled{2} \\ \textcircled{2} \end{matrix} \quad 7$$

$$3 \times 3 \times 2 \times 2 \times 7 = 252$$

The LCM of 28 and 36 is 252.



Solve this problem in your composition book

- 5) **A traffic light changes every 30 seconds. Another traffic light changes every 40 seconds. Both lights just changed. After how many minutes will both lights change at the same time again?**

(Find the LCM of 30 and 40)

30, 60, 90, **120**, 150, 180

40, 80, **120**, 160, 200

**Both lights will change at the same time in 120 seconds or 2 minutes.**



Solve problem 6 on your notes page.

- 6) Trains on two different subway lines have just arrived at the station. Line A has trains that arrive every 12 minutes. Line B has trains that arrive every 15 minutes. In how many minutes will trains on Line A and Line B arrive at the station at the same time?

$$\begin{array}{r} 12 \\ / \quad \backslash \\ 3 \quad 4 \\ \quad / \quad \backslash \\ \quad 2 \quad 2 \\ \hline 3 \cdot 2 \cdot 2 \end{array} \qquad \begin{array}{r} 15 \\ / \quad \backslash \\ 3 \quad 5 \\ \hline 3 \cdot 5 \end{array}$$
$$\begin{array}{r} 5 \quad \textcircled{3} \quad 2 \quad 2 \\ \hline 5 \times 3 \times 2 \times 2 = 60 \end{array}$$

Trains on Line A and Line B will both arrive at the station at the same time in 60 minutes.