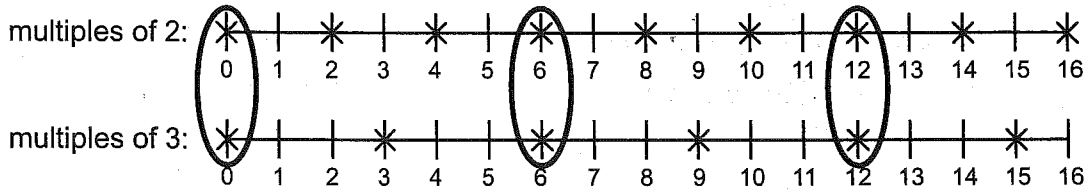


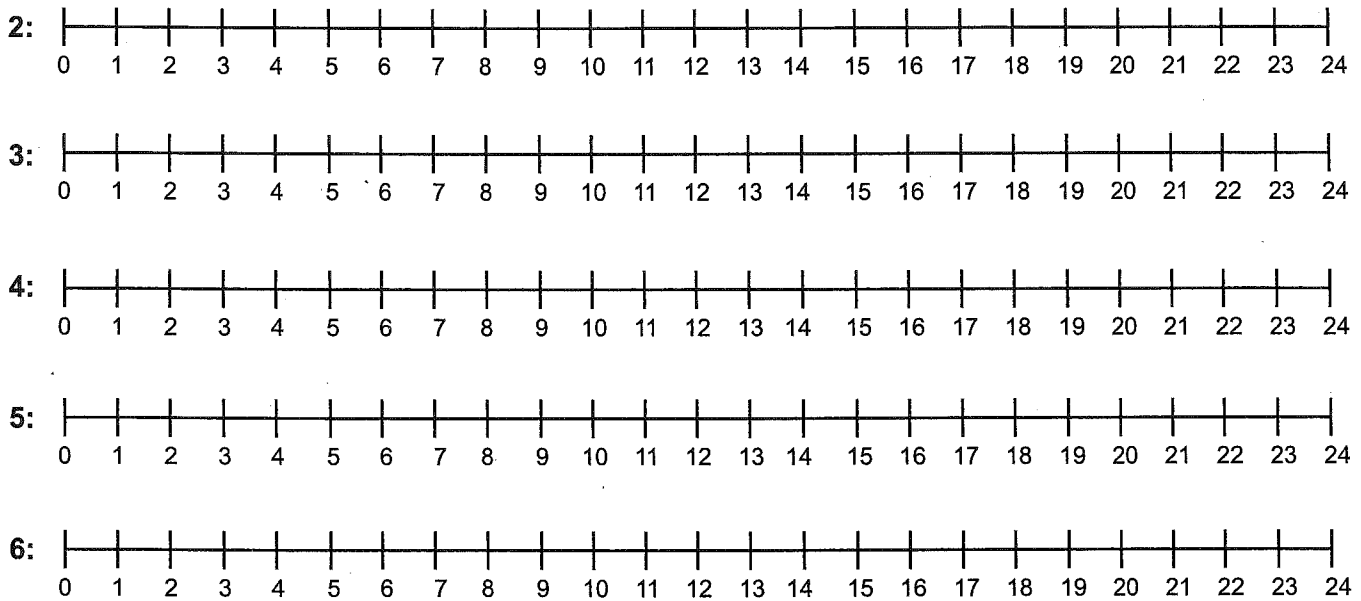
NS7-11 LCMs and GCFs

The multiples of 2 and 3 are marked with X on the number lines.



The numbers marked with X on both number lines are 0, 6, and 12. These numbers are called **common multiples** of 2 and 3.

- Predict the next common multiple of 2 and 3, then check by extending the number sequences.
- Mark the multiples of each number on the number lines.



- Find the first 2 common multiples (after 0) of...

a) 2 and 5: _____, _____	b) 3 and 6: _____, _____	c) 2 and 4: _____, _____
d) 3 and 4: _____, _____	e) 4 and 6: _____, _____	f) 3, 4, and 6: _____, _____
- How can you find the second common multiple of two numbers from the first?
 - The first common multiple of 18 and 42 is 126. What is the second common multiple?
- Write the first 4 common multiples of 2 and 3, after 0. _____
 - Extend the pattern from part a). Predict the fifth common multiple of 2 and 3. _____

11. a) Find the factors of each number and then the greatest common factor (GCF) of each pair.

i) 2 and 10

2: 1, 2

10: 1, 2, 5, 10

GCF = 2

ii) 5 and 15

5:

15:

GCF = _____

iii) 6 and 30

6:

30:

GCF = _____

iv) 10 and 50

10:

50:

GCF = _____

b) If a is a factor of b , what is the GCF of a and b ? _____

Two numbers are called **consecutive** if one number is the next number after the other.
 Example: 13 and 14 are consecutive because 14 is the next number after 13.

INVESTIGATION 1 ► What is the GCF of two consecutive numbers?

A. Find the factors of each number and then the GCF of each pair.

a) 14 and 15

14: 1, 2, 7, 14

15: 1, 3, 5, 15

GCF = 1

b) 20 and 21

20:

21:

GCF = _____

c) 15 and 16

15:

16:

GCF = _____

d) 35 and 36

35:

36:

GCF = _____

B. Make a conjecture about the GCF of any two consecutive numbers.

C. Test your conjecture on two more consecutive numbers of your choice: _____ and _____

INVESTIGATION 2 ► How are the GCF, the LCM, and the product of two numbers related?

A. Find the **GCF**, the **LCM**, and the **product** of each pair of numbers. Do rough work in your notebook.

a) 3 and 4

GCF = _____

LCM = _____

$3 \times 4 =$ _____

b) 2 and 5

GCF = _____

LCM = _____

$2 \times 5 =$ _____

c) 4 and 6

GCF = _____

LCM = _____

$4 \times 6 =$ _____

d) 10 and 15

GCF = _____

LCM = _____

$10 \times 15 =$ _____

e) 5 and 10

GCF = _____

LCM = _____

$5 \times 10 =$ _____

f) 3 and 5

GCF = _____

LCM = _____

$3 \times 5 =$ _____

g) 4 and 5

GCF = _____

LCM = _____

$4 \times 5 =$ _____

h) 6 and 9

GCF = _____

LCM = _____

$6 \times 9 =$ _____

B. Circle the questions from part A where the LCM is the product of the two numbers.

C. Make a conjecture: When the LCM is the product of the two numbers, the GCF is _____.

The **lowest common multiple (LCM)** of two numbers is the smallest number (not 0) that is a multiple of both numbers.

6. Look at your answers to Question 3. What is the LCM of...

- a) 2 and 5 b) 3 and 6 c) 2 and 4 d) 3 and 4 e) 4 and 6

7. Find the lowest common multiple of each pair of numbers.

- a) 3 and 5 b) 4 and 10 c) 3 and 9 d) 2 and 6

3: 3, 6, 9, 12, **15**, 18

5: 5, 10, **15**, 20

LCM = 15

LCM = _____

LCM = _____

LCM = _____

- e) 2 and 10 f) 2 and 7 g) 3 and 12 h) 4 and 8
i) 8 and 10 j) 5 and 15 k) 6 and 10 l) 3 and 10
m) 6 and 8 n) 6 and 9

REMINDER ▶ The factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24, since:

$1 \times 24 = 24$

$2 \times 12 = 24$

$3 \times 8 = 24$

$4 \times 6 = 24$

8. Find all the factors of each number below by dividing the number by the whole numbers in increasing order—divide by 1, 2, 3, 4, 5, and so on. How do you know when to stop dividing?

- a) 20 b) 22 c) 26 d) 65 e) 66

The greatest number that is a factor of two or more numbers is called the **greatest common factor (GCF)** of the numbers.

9. Use your answers to Question 8. Find the greatest common factor of...

- a) 20 and 22 b) 22 and 66 c) 20 and 65 d) 65 and 66
e) 26 and 65 f) 22 and 65 g) 20, 26, and 65 h) 20, 22, and 66

10. i) List the factors of each number below in order from least to greatest.

ii) Circle all the **common factors** for each pair.

iii) Put a double circle around the **GCF** of the pair.

- a) 10 and 15 b) 18 and 24 c) 20 and 30 d) 28 and 42