CLASS	**VI**
SUBJECT	**MATHEMATICS**
TOPIC	**PLAYING WITH NUMBERS**
SUB TOPIC	**FACTORS AND MULTIPLES**
NO OF SESSIONS	**1 / 8**

Introduction:

Factors and multiples are **different** things.

But they both involve **multiplication**:

- Factors are what we can multiply to get the number
- Multiples are what we get **after** multiplying the number by an multiplying negatives makes a positive, (not a fraction).

Example: the positive factors, and some multiples, of 6:

Factors:

- 1 × 6 = 6, so **1** and **6** are factors of 6
- 2 × 3 = 6, so **2** and **3** are factors of 6

Multiples:

- 0 × 6 = 0, so **0** is a multiple of 6
- 1 × 6 = 6, so **6** is a multiple of 6
- 2 × 6 = 12, so **12** is a multiple of 6
- and so on

(Note: there are negative factors and multiples as well)

Here are the details:

Factors: "Factors" are the numbers we can **multiply together** to get another number:

2 and 3 are factors of 6. A number can have **many** factors.

Example: 12

- 3 × 4 = 12, so **3** and **4** are factors of 12
- Also 2 × 6 = 12, so **2** and **6** are also factors of 12,
- And 1 × 12 = 12, so **1** and **12** are factors of 12 as well.

And because multiplying negatives makes a positive, −1, −2, −3, −4, −6 and −12

are also factors of 12:

- (−1) × (−12) = 12

- $(-2) \times (-6) = 12$
- $(-3) \times (-4) = 12$

So ALL the factors of 12 are: **1, 2, 3, 4, 6 ,12 and −1, −2, −3, −4, −6 ,−12**

Learn about multiplying negatives makes a positive, and how to find multiplying negatives makes a positive, multiplying negatives makes a positive,

Multiples:

A multiple is the result of **multiplying** a number **by an multiplying negatives makes a positive,** (not a fraction).

Example 1: Multiples of 3: ..., −9, −6, −3, 0, 3, 6, 9, ...
Example 2: 15 **is** a multiple of 3, as $3 \times 5 = 15$
Example 3: 16 is **not** a multiple of 3
Example 4: Multiples of 5: ..., −15, −10, −5, 0, 5, 10, 15, ...
Example 5: 10 **is** a multiple of 5, as $5 \times 2 = 10$
Example 6: 11 is **not** a multiple of 5

Assignment

1. Which of the following are prime numbers?
   a) 383
   b) 72
   c) 54
   d) 211
2. List all the factors of 24.
3. What is a factor of 120? Please choose ALL that apply.
   a) 1
   b) 5
   c) 15
   d) 25
   e) 20
4. Is the first number a factor of the second number? 9, 146
   a) Yes
   b) No
5. Carl has a soccer game every 4th day, Matt has one every 5th day. When will they have a game on the same day?
   a) Day 9
   b) Day 20
   c) Day 24

Homework: NCERT 3.1