

FACTORS AND MULTIPLES

— Number

1. What are Multiples?

- Multiples are the answers when you multiply a number.
- They are like the times table answers.

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 ...

Multiples of 5: 5, 10, 15, 20, 25, 30, 35, 40 ...

Multiples of 7: 7, 14, 21, 28, 35, 42, 49, 56 ...

Multiples go on forever!

Every number is a multiple of 1 and of itself.

2. What are Factors?

- Factors are numbers that divide evenly into another number.
- They come in pairs that multiply together.

Factors of 12: 1, 2, 3, 4, 6, 12

Because: $1 \times 12 = 12$, $2 \times 6 = 12$, $3 \times 4 = 12$

Factors of 20: 1, 2, 4, 5, 10, 20

Because: $1 \times 20 = 20$, $2 \times 10 = 20$, $4 \times 5 = 20$

3. Finding All Factors

- Start at 1 and check each number:
- Does it divide in evenly (no remainder)?
 - $12 / 1 = 12$ (yes) -> factors: 1 and 12
 - $12 / 2 = 6$ (yes) -> factors: 2 and 6
 - $12 / 3 = 4$ (yes) -> factors: 3 and 4
 - $12 / 5 = 2 \text{ r}2$ (no) -> 5 is NOT a factor

4. Factor vs Multiple

Factors go INTO a number (they are smaller or equal).
Multiples are MADE FROM a number (they are bigger or equal).

3 is a FACTOR of 12 ($12 \div 3 = 4$, no remainder)

12 is a MULTIPLE of 3 ($3 \times 4 = 12$)

5. Common Multiples

- Common multiples are shared by two numbers.
 - Multiples of 3: 3, 6, 9, 12, 15, 18 ...
 - Multiples of 4: 4, 8, 12, 16, 20, 24 ...
 - Common multiples of 3 and 4: 12, 24, 36 ...

6. Practice

- List the first 5 multiples of 6.
- Find all the factors of 24.
- Is 7 a factor of 35? How do you know?