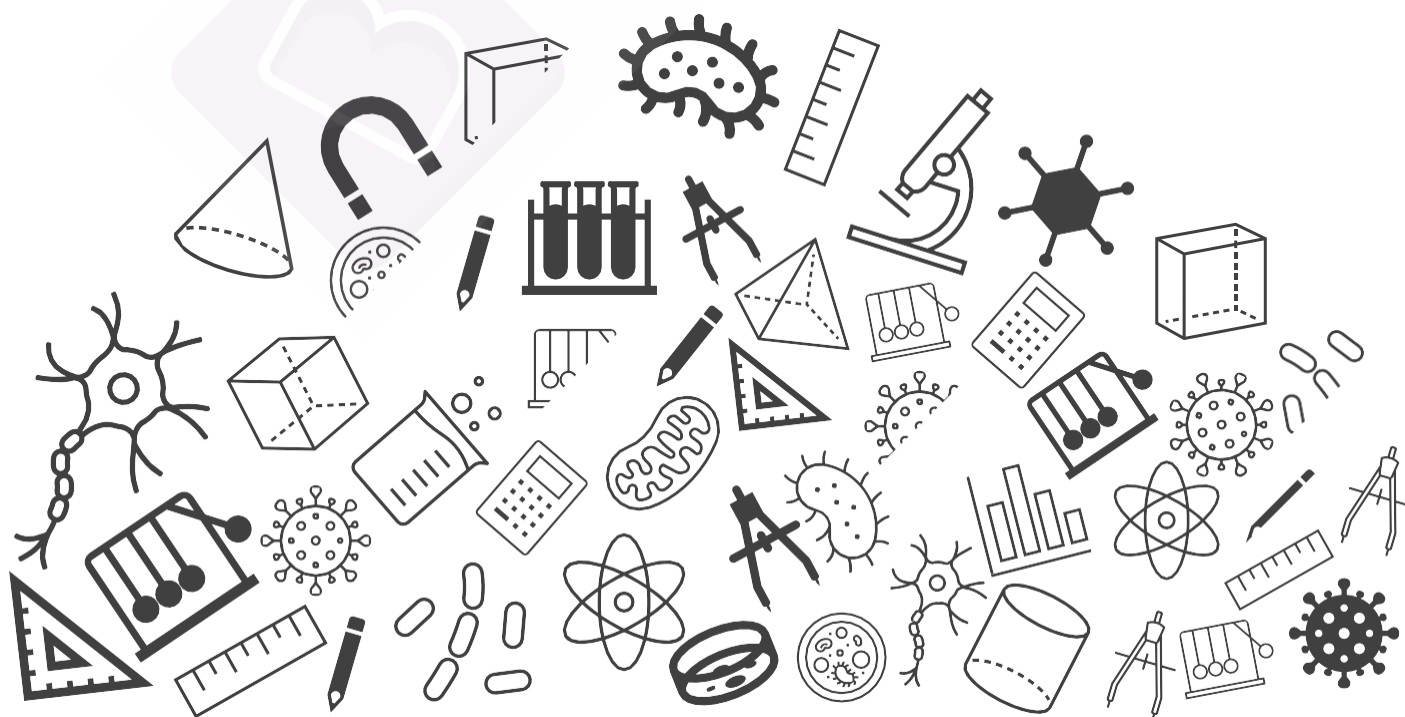




Grade 06

Maths Chapter Notes

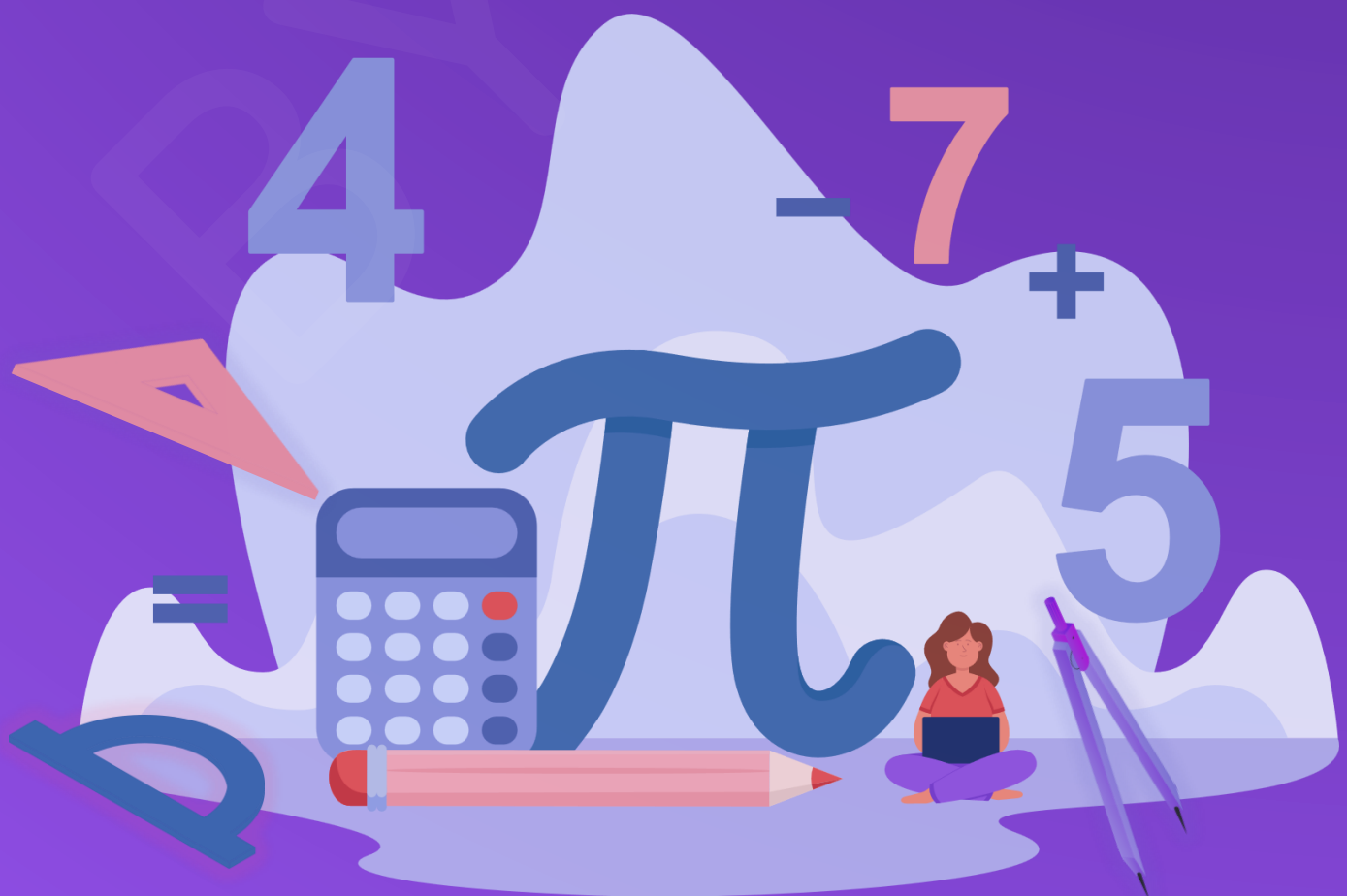


BYJU'S Classes

Chapter Notes

Knowing Our Numbers

Grade 06



Topics to be Covered

1. Comparing numbers

- 1.1. Steps to compare numbers
- 1.2. Ascending Order
- 1.3. Descending Order

2. Formation of numbers

3. Place values

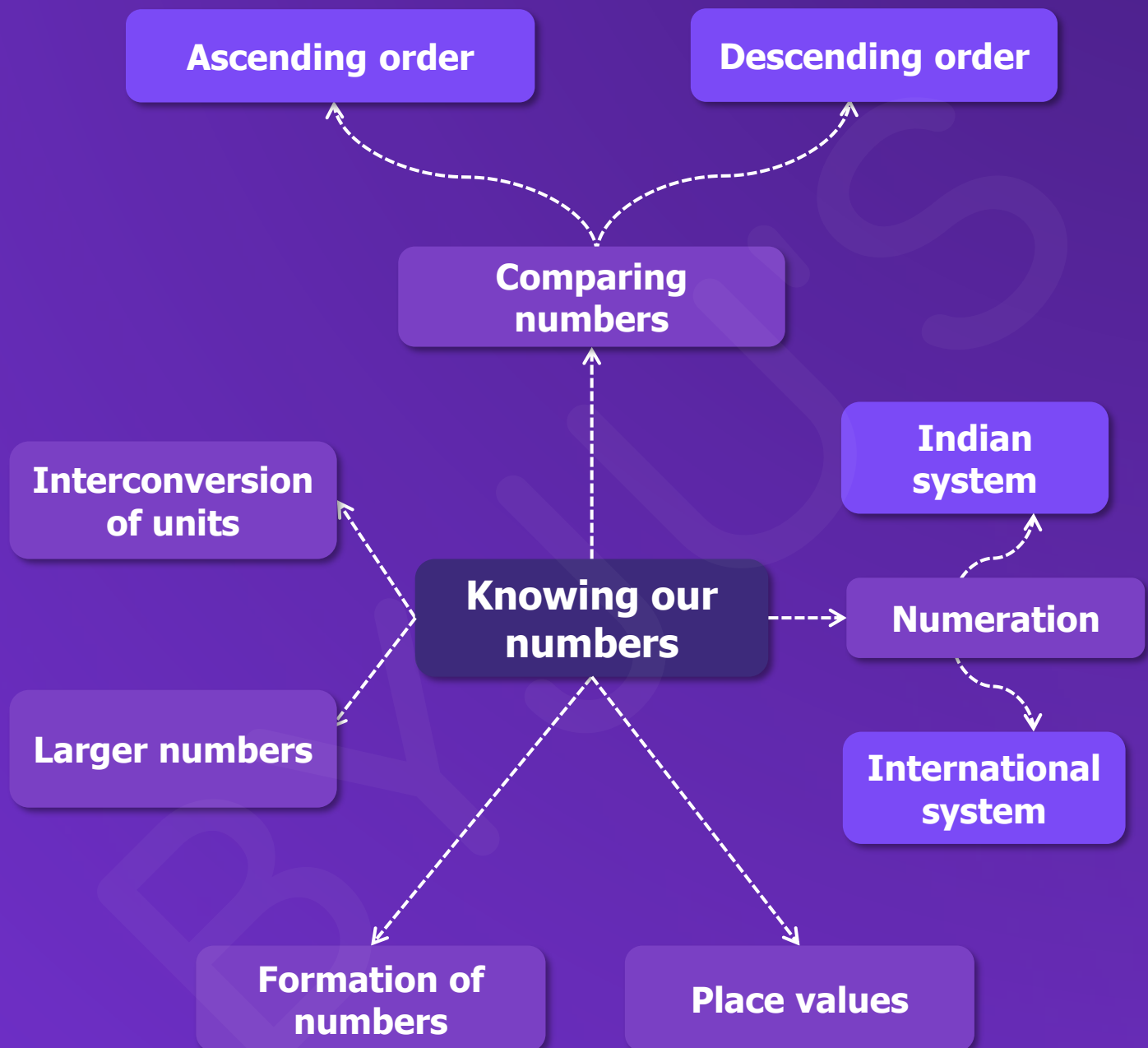
4. Larger numbers

5. Number systems

- 4.1. Indian number system
- 4.2. International number system

6. Interconversion of units

Mind Map

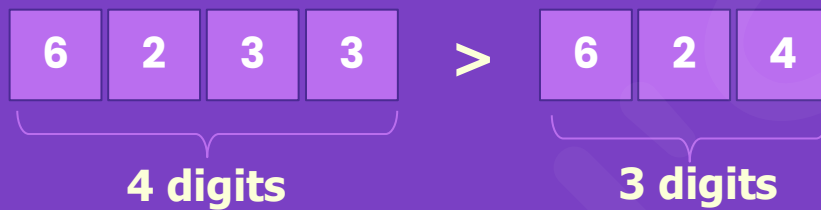


1. Comparing Numbers

1.1. Steps to Compare Numbers

Numbers with same number of digits

- Count the number of digits in both the numbers, the number with more digits will be the greater one.



Numbers with different number of digits

- If number of digits are equal, compare the leftmost digits of both the numbers.



- If the digits are equal, compare the second leftmost digits in both the numbers.



- If the digits are equal, move to the third leftmost digit.

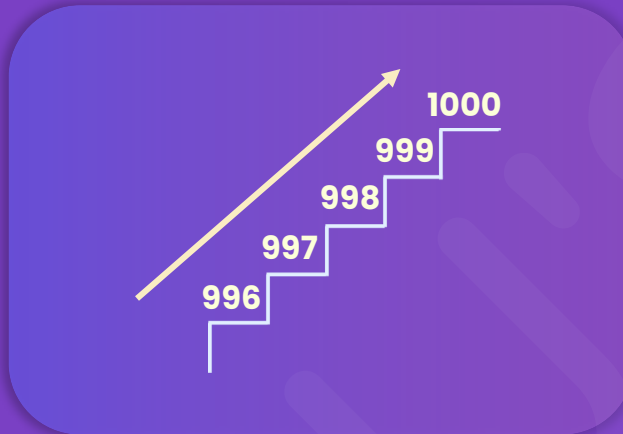


- Hence, $623 < 624$.

1. Comparing Numbers

1.2. Ascending Order

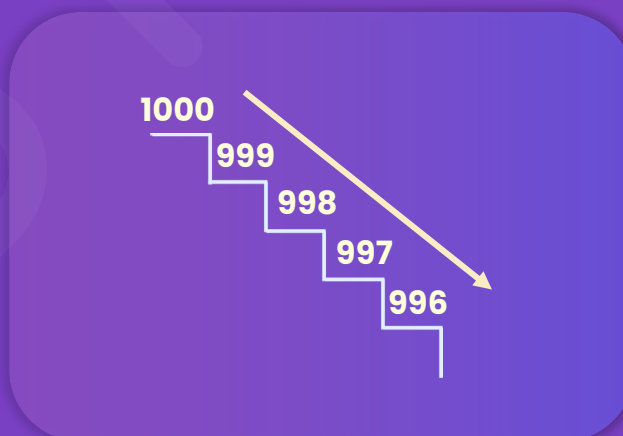
Arrangement of numbers from the smallest value to the largest value.



It can be written as: $996 < 997 < 998 < 999 < 1000$.

1.3. Descending Order

Arrangement of numbers from the largest value to the smallest value.



It can be written as: $1000 > 999 > 998 > 997 > 996$.

2. Formation of numbers

Formation of Numbers with Given Digits

Without repetition:

If we are given with some digits out of which we need to form **the smallest number** without repetition, we need to place the digits in **ascending order**.

Similarly, if we are given with some digits out of which we need to form **the largest number** without repetition, we place the digits in **descending order**.

Example: Given digits are 4, 6, 1, 3, 9. We can write the smallest 5-digit number using the given digits as 13469 and the largest 5-digit number as 96431.

With repetition:

If we are given with digits out of which we need to form the smallest or the largest number with repetition:

- We repeat the **smallest digit** out of the given digits and place the digits in **ascending order** to form the **smallest number**.
- We repeat the **largest digit** out of the given digits and place the digits in **descending order** to form the **largest number**.

Example: Given digits are 4, 6, 1, 3, 9. We can write smallest 6-digit number out of the given digits as 113469 and largest 6-digit number as 996431 considering one digit repeated twice.

3. Place Values

Let us consider number 45,278 to understand how we write place values.

Here,

- 8 is at ones place
- 7 at tens place
- 2 at hundreds place
- 5 at thousands place
- 4 at ten thousands place

Ten thousands	Thousands	Hundreds	Tens	Ones
4	5	2	7	8

The number is read as forty-five thousand, two hundred and seventy-eight.

Expanded Form:

Let us consider number 45,278 to understand how we write expanded form.

$$45,278 = 4 \times 10,000 + 5 \times 1,000 + 2 \times 100 + 7 \times 10 + 8$$

Here, $4 \times 10,000 + 5 \times 1,000 + 2 \times 100 + 7 \times 10 + 8$ is the expanded form of 45,278

Usual Form:

We can write the number from expanded form back into the usual form as:

$$4 \times 10,000 + 5 \times 1,000 + 2 \times 100 + 7 \times 10 + 8 = 45,278$$

Here, 45,278 is the compact form of $4 \times 10,000 + 5 \times 1,000 + 2 \times 100 + 7 \times 10 + 8$

4. Larger Numbers

Smallest and Largest Numbers for Given Number of Digits

The following table shows us the smallest and the largest number for a given number of digits.

Digit	Smallest Number	Largest Number
1	0	9
2	10	99
3	100	999
4	1000	9999
5	10000	99999
6	100000	999999
7	1000000	9999999

- The smallest 1-digit number is 0, and the largest 1-digit number is 9.
- Similarly, the smallest 2-digit number is 10 and the largest 2-digit number is 99.
- The smallest 3-digit number is 100 and the largest 3-digit number is 999 and so on and so forth.

- Now interestingly when we add 1 with the largest 1-digit number we get the smallest 2-digit number.
- Similarly, when we add 1 with the largest 2-digit number we get the smallest 3-digit number.

5. Number Systems

5.1. Indian Number System

- In the Indian number system, after **ones, tens, and hundreds**, we have **thousands** and **ten thousands**.
- Then comes **lakhs** and **ten lakhs**.
- Next comes **crores** and **ten crores**.
- So, while putting the **commas from right to left**, we count **three digits**, and **put a comma**. Then, we put commas **after every two digits**.

Crores		Lakhs		Thousands		Ones		
Ten crores	Crores	Ten lakhs	Lakhs	Ten thousands	Thousands	Hundreds	Tens	Ones
10,00,00,000	1,00,00,000	10,00,000	1,00,000	10,000	1,000	100	10	1

Representation of 2,45,26,634:

Ten crores	Crores	Ten lakhs	Lakhs	Ten thousands	Thousands	Hundreds	Tens	Ones
—	2	4	5	2	6	6	3	4

5. Number Systems

5.2 International Number System

- In the International number system, after **ones, tens, and hundreds**, we have the **thousands, ten thousands, and hundred thousands**.
- It is followed by **millions, ten millions, and hundred millions**.
- After every **three digits from right to left**, we put a comma.

Millions			Thousands			Ones		
Hundred millions	Ten millions	Millions	Hundred thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1

Representation of 24,526,634

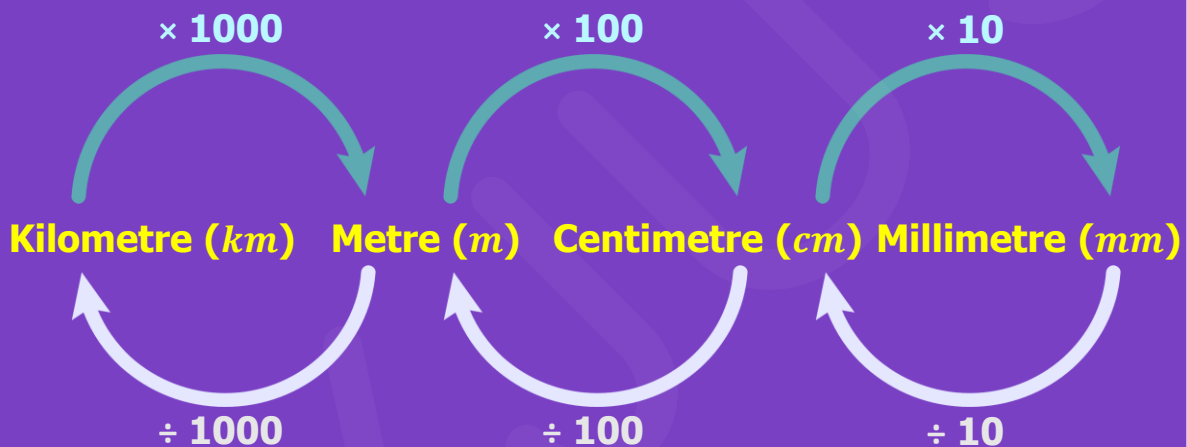
Hundred millions	Ten millions	Millions	Hundred thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
—	2	4	5	2	6	6	3	4

6. Interconversion of Units

Units related to length:

To convert a quantity from:

- kilometre to metre, we multiply by 1000.
- metre to centimetre, we multiply by 100.
- centimetre to millimetre, we multiply by 10.
- millimetre to centimetre, we divide by 10.
- centimetre to metre, we divide by 100.
- metre to kilometre, we divide by 1000.



Example: $121 \text{ m} = 121 \times 100 \text{ cm} = 12100 \text{ cm}$

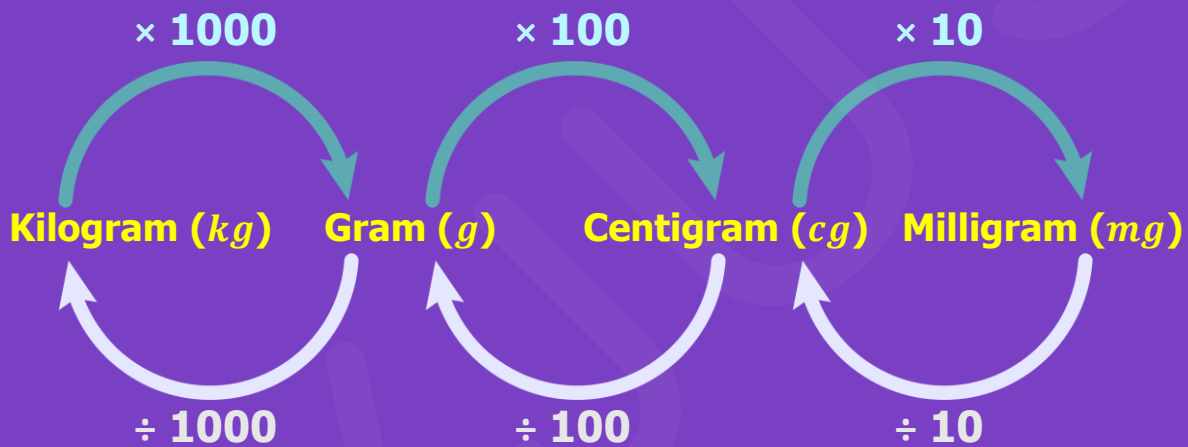
$$834000 \text{ cm} = \frac{834000}{100} \text{ m} = 8340 \text{ m}$$

6. Interconversion of Units

Units related to weight:

To convert a quantity from:

- kilogram to gram, we multiply by 1000.
- gram to centigram, we multiply by 100.
- centigram to milligram, we multiply by 10.
- milligram to centigram, we divide by 10.
- centigram to gram, we divide by 100.
- gram to kilogram, we divide by 1000.



Example: $21 \text{ kg} = 21 \times 1000 \text{ g} = 21000 \text{ g}$

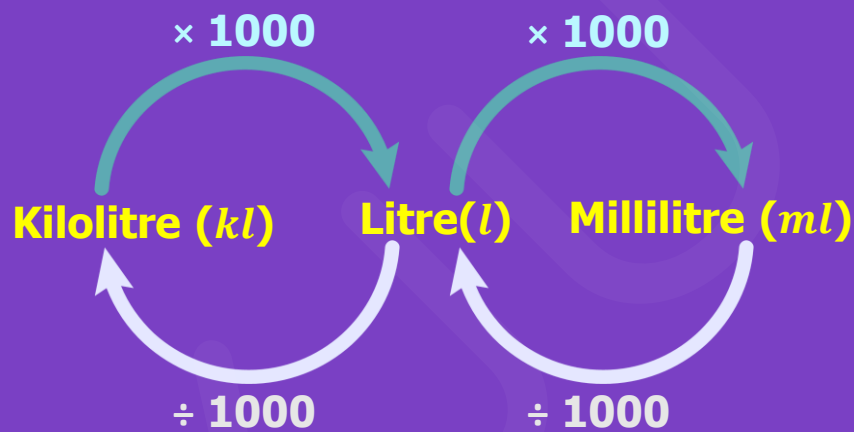
$$840000 \text{ mg} = \frac{840000}{1000} \text{ g} = 840 \text{ g}$$

6. Interconversion of Units

Units related to volume:

To convert a quantity from:

- kilolitre to litre, we multiply by 1000.
- litre to millilitre, we multiply by 1000.
- millilitre to litre, we divide by 1000.
- litre to kilolitre, we divide by 1000.



Example: $17 \text{ l} = 17 \times 1000 \text{ ml} = 17000 \text{ ml}$

$$210000 \text{ ml} = \frac{210000}{1000} \text{ l} = 210 \text{ l}$$