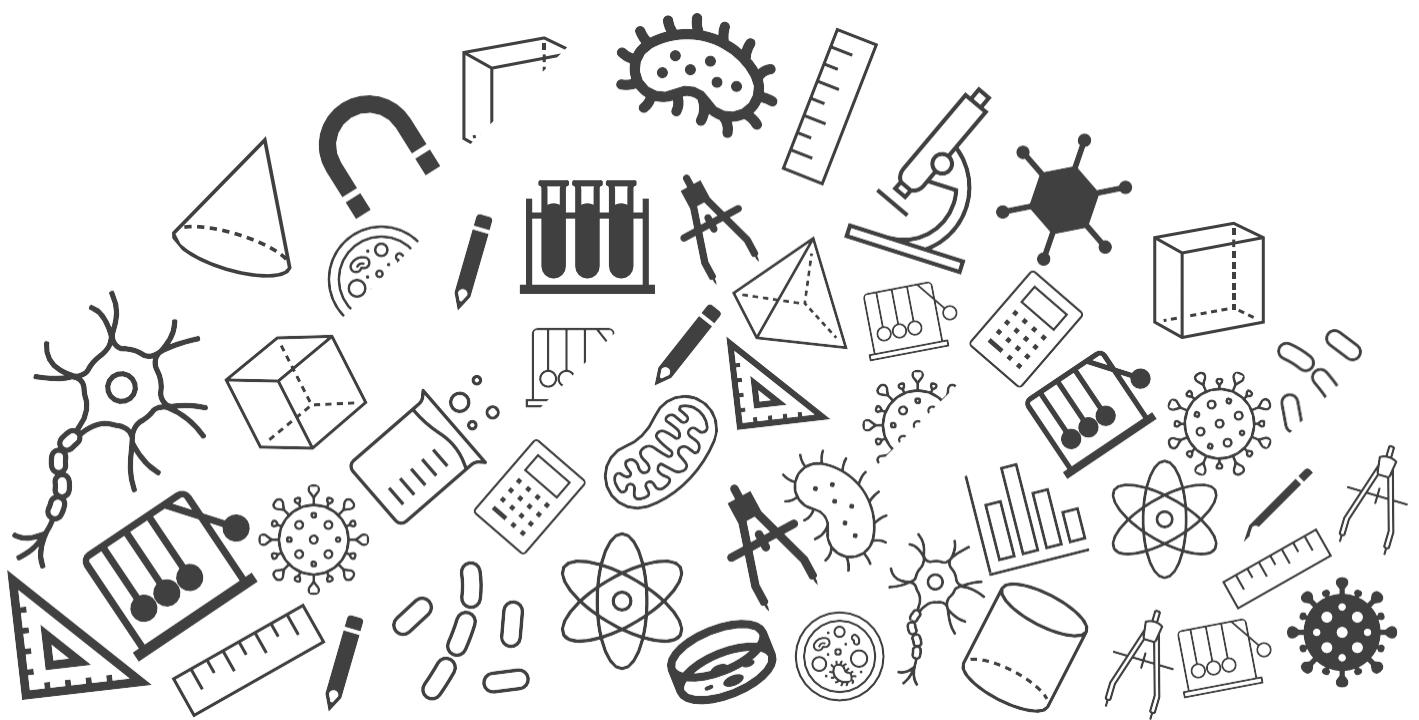




# BYJU'S

## Grade 06

### Maths Chapter Notes





# BYJU'S Classes

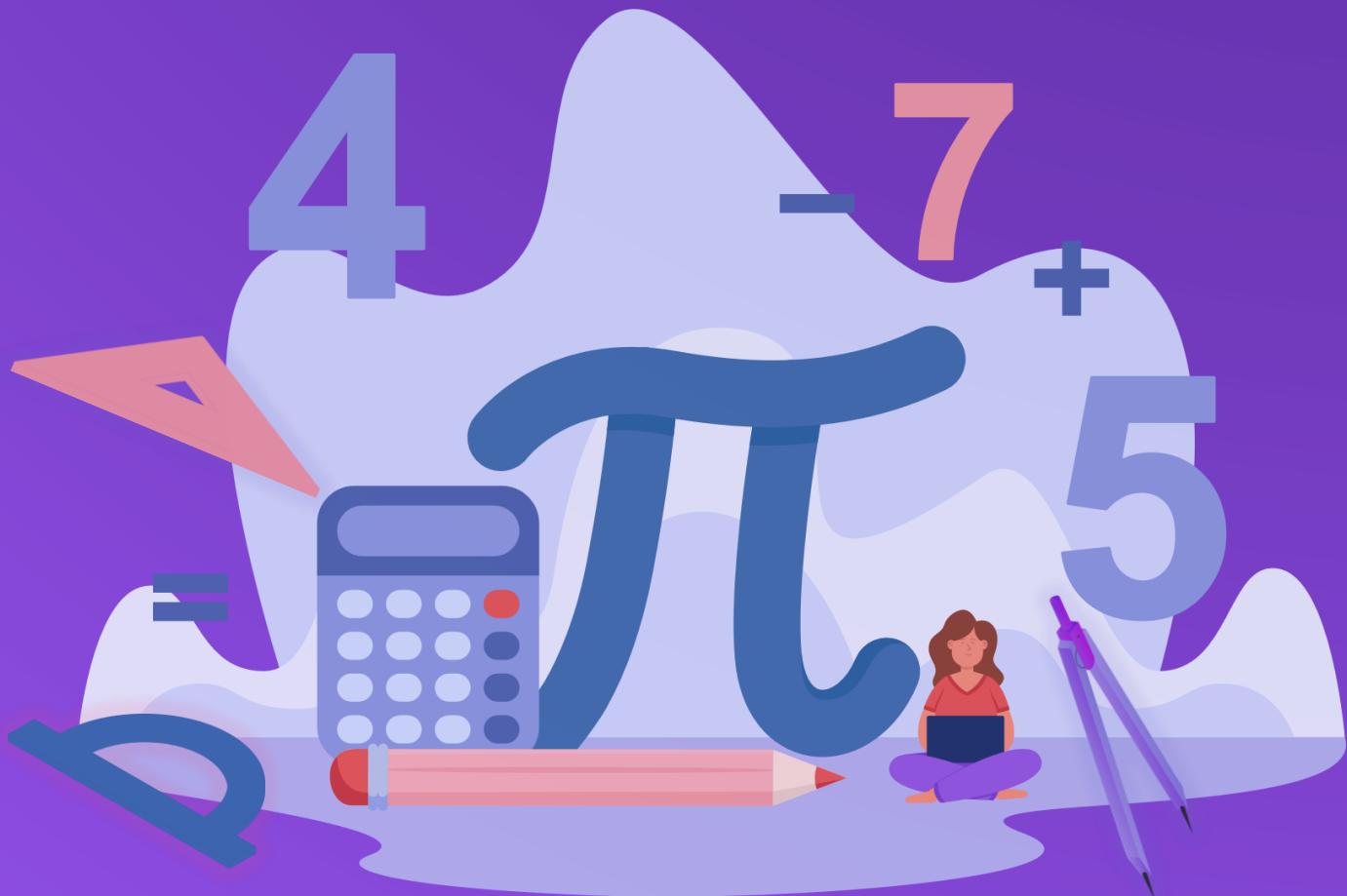
## Chapter Notes

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### Decimals

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Grade 06





## Topics to be Covered

### 1. Decimals

- 1.1 Introduction
- 1.2 Representation on the Number Line

### 2. Conversion

- 2.1 Fractions to Decimals
- 2.2 Decimals to Fractions

### 3. Comparing Decimals

### 4. Interconversion of Units

- 4.1 Length Units
- 4.2 Money Units
- 4.3 Weight Units

### 5. Operations on Decimals

- 5.1. Addition
- 5.2 Subtraction



# Mind Map





# 1. Decimals

## 1.1 Introduction

**63 . 174**

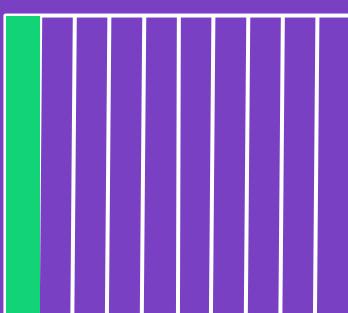
Sixty-three point one seven four

Decimal Place Value Chart

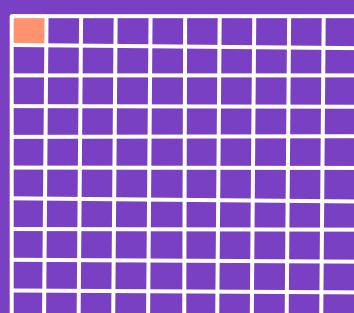
Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths	Thousands
(100)	(10)	(1)		$\left(\frac{1}{10}\right)$	$\left(\frac{1}{100}\right)$	$\left(\frac{1}{1000}\right)$
0	6	3		1	7	4
Whole number part			Fractional part			

$$63.174 = 6 \times 10 + 3 \times 1 + 1 \times \frac{1}{10} + 7 \times \frac{1}{100} + 4 \times \frac{1}{1000}$$

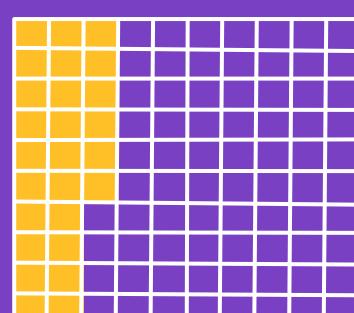
Decimal Number Visualisation



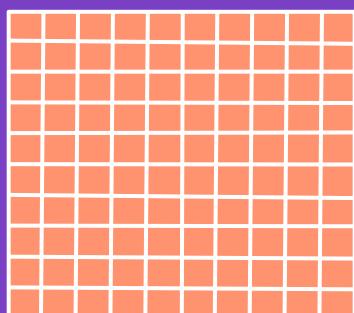
0.1



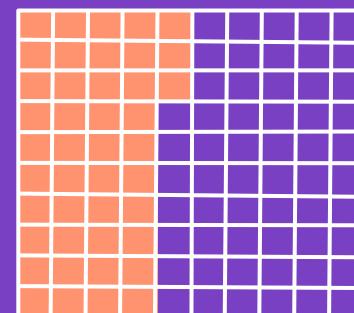
0.01



0.26



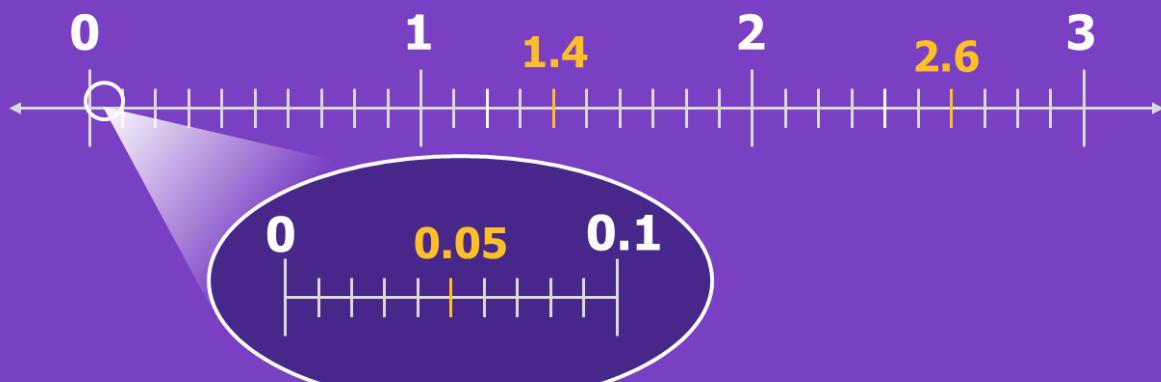
1.43



## 1. Decimals

### 1.2 Representation on the Number Line

Make **ten divisions** between any two numbers on the number line.



## 2. Conversion

### 2.1 Fractions to Decimals

#### Case 1 : 10 or powers of 10 as denominator

The decimal will be put in the numerator from the right after counting the number of 0 in the denominator. The number of digits after decimal is equal to the number of 0's in the denominator.

$$\frac{7}{10} = 0.7, \quad \frac{6519}{1000} = 6.519$$



## 2. Conversion

### 2.1 Fractions to Decimals

#### Case 2: 2 as denominator

Make the denominator 10, by multiplying numerator and denominator by 5 and follow the rules of case 1.

$$\frac{7}{2} = \frac{7 \times 5}{2 \times 5} = \frac{35}{10} = 3.5$$

#### Case 3: 5 as denominator

Make the denominator 10, by multiplying numerator and denominator by 2 and follow the rules of case 1

$$\frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10} = 0.4$$

### 2.2 Decimals to Fractions

**Step 1:** Write the decimal number as fraction with denominator 1.

$$0.75 = \frac{0.75}{1}$$

**Step 2:** Multiply both the top and the bottom by 10 for every digit after the decimal point.

$$\frac{0.75}{1} = \frac{0.75 \times 10 \times 10}{10 \times 10} = \frac{75}{100}$$

**Step 3:** Simplify the fraction to the lowest form.

$$\frac{75}{100} = \frac{3}{4}$$

### 3. Comparing Decimals

Let us compare 6.7 and 6.65 for understanding the concept.

	Ones	.	Tenths	Hundredths
6.7	6	.	7	0
6.65	6	.	6	5

**Step 1:** Compare the integral part. If the numbers are the same, go to the next step.

In above example, integral part (6) is the same.

**Step 2:** Compare the tenths place.

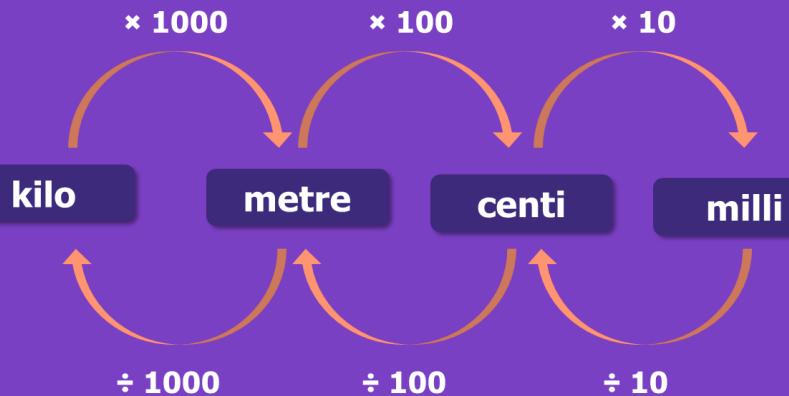
In above example, 7 is greater than 6.

So,  $6.7 > 6.65$

If digit at tenths place is same, then we move to the hundredths place and so on.

## 4. Interconversion of Units

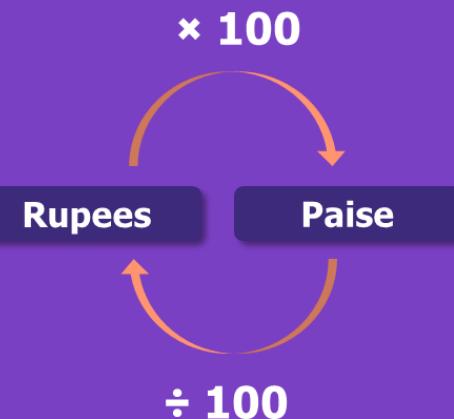
### 4.1. Length Units



- To convert kilometre to metre, multiply by 1000.  
**Example:**  $5 \text{ km} = 5 \times 1000 = 5000 \text{ m}$
- To convert metre to kilometre, divide by 1000.  
**Example:**  $500 \text{ m} = 500 \div 1000 = 0.5 \text{ km}$
- To convert metre to centimetre, multiply by 100.  
**Example:**  $0.3 \text{ m} = 3 \times 100 = 30 \text{ cm}$
- To convert centimetre to metre, divide by 100.  
**Example:**  $150 \text{ cm} = 150 \div 100 = 1.5 \text{ m}$
- To convert centimetre to millimetre, multiply by 10.  
**Example:**  $2.5 \text{ cm} = 2.5 \times 10 = 25 \text{ mm}$
- To convert millimetre to centimetre, divide by 10.  
**Example:**  $17 \text{ mm} = 17 \div 10 = 1.7 \text{ cm}$

## 4. Interconversion of Units

### 4.2. Money Units



To convert rupees to paise, multiply by 100.

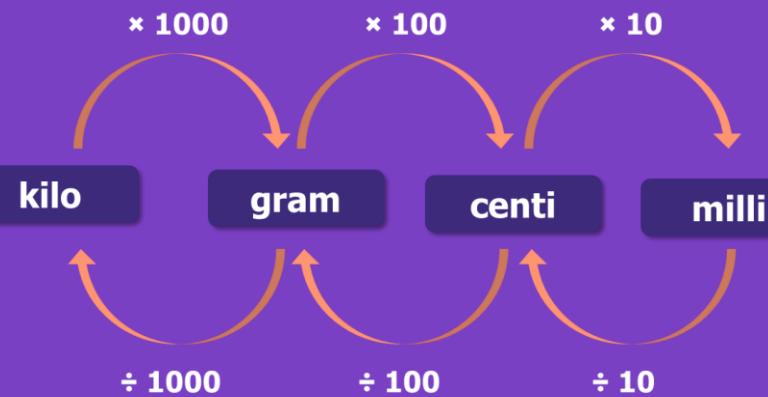
**Example:** 5 rupees =  $5 \times 100 = 500$  paise

To convert paise to rupees we divide by 100.

**Example** 50 paise =  $50 \div 100 = 0.5$  rupees

## 4. Interconversion of Units

### 4.3. Weight Units



- To convert kilogram to gram, multiply by 1000.

**Example:**  $3 \text{ kg} = 3 \times 1000 = 3000 \text{ g}$

- To convert gram to kilogram, divide by 1000.

**Example:**  $450 \text{ g} = 450 \div 1000 = 0.45 \text{ kg}$

- To convert gram to centigram, multiply by 100.

**Example:**  $4 \text{ g} = 4 \times 100 = 400 \text{ cg}$

- To convert centigram to gram, divide by 100.

**Example:**  $230 \text{ cg} = 230 \div 100 = 2.3 \text{ g}$

- To convert centigram to milligram, multiply by 10.

**Example:**  $9 \text{ cg} = 9 \times 10 = 90 \text{ mg}$

- To convert milligram to centigram, divide by 10.

**Example:**  $54 \text{ mg} = 54 \div 10 = 5.4 \text{ cg}$



## 5. Operations on Decimals

### 5.1 Addition

$$\begin{array}{r} 1 \\ \boxed{1} \cdot \boxed{8} \boxed{1} \\ + \boxed{2} \cdot \boxed{4} \boxed{0} \\ \hline 4 \cdot 2 1 \end{array}$$

1

Line up the decimal points

2

Add zero in blank spaces

3

Add the digits

### 5.2 Subtraction

$$\begin{array}{r} 1 \\ \cancel{2} \cdot \cancel{3} \boxed{0} \\ - \boxed{1} \cdot \boxed{8} \boxed{1} \\ \hline 0 \cdot 5 9 \end{array}$$

1

Line up the decimal points

2

Add zero in blank spaces

3

Subtract the digits