

# G D GOENKA PUBLIC SCHOOL, MORENA

## SUBJECT – MATHEMATICS

### GRADE – 3

#### Unit – 10 Money

##### Conversion of Rupees into Paise

As we know 1 Rupee = 100 Paise

To convert rupees into paise we have to multiply the number of rupees by 100

**Example 1.** Convert ₹ 45 into Paise

**Solution.** ₹ 45 =  $45 \times 100 = 4500$  Paise

**Example 2.** Convert Rs 25.75 into paise

**Solution.** ₹ 25.75 = ₹ 25 + 75 P =  $25 \times 100P + 75P = 2500 + 75 = 2575$  P

Another easy method, remove the point/dot and write 'P' at the end.

So, ₹ 25.75 = 2575P

##### Conversion of Paise into Rupees

**Example 1.** Convert 425p to rupees and paise.

**Solution.** 425p = 400p + 25p

= ₹ 4 + 25p

= ₹ 4.25

**Example 2.** Convert 5665p to rupees and paise

**Solution.** 5665p = 5600p + 65p

= ₹ 56 + 65p

= ₹ 56.65

### Addition of Money Without Carry

**Example 1.** Add ₹ 35.20 and ₹ 5.25

**Solution.** Arrange the numbers in tabular format as shown below

| Rs. (Rupees) |   |   |   | P (Paise) |   |                           |
|--------------|---|---|---|-----------|---|---------------------------|
|              | 1 |   |   |           |   | Add the paise             |
|              | 3 | 5 | . | 2         | 0 | $20p + 25p = 45p$         |
| +            |   | 5 | . | 2         | 5 | Add the rupees            |
|              | 4 | 0 | . | 4         | 5 | $Rs. 35 + Rs. 5 = Rs. 40$ |

So, the result is ₹ 40.45

**Example 2.** Add ₹ 432.22 to ₹ 147.65

**Solution.** Arrange the numbers in tabular format as shown below.

| Rs |   |   |   | P |   |               |                               |
|----|---|---|---|---|---|---------------|-------------------------------|
|    |   |   |   |   |   | Add the paise |                               |
|    | 4 | 3 | 2 | . | 2 | 2             | $22p + 65p = 87p$             |
| +  | 1 | 4 | 7 | . | 6 | 5             | Add the rupees                |
|    | 5 | 7 | 9 | . | 8 | 7             | $Rs. 432 + Rs. 147 = Rs. 579$ |

So, the result is ₹ 579.87.

### Addition of Money With Carry

**Example 1.** Add ₹ 86.57 and ₹ 52.66

**Solution.** Arrange the numbers in tabular format as shown below.

| Rs. |   |   |   | P |   |
|-----|---|---|---|---|---|
|     | 1 | 1 |   | 1 |   |
|     | 8 | 6 | . | 5 | 7 |
| +   | 5 | 5 | . | 6 | 6 |
| 1   | 4 | 2 | . | 2 | 3 |

Add the paise first

$$57\text{p} + 66\text{p} = 123\text{p} = 100\text{p} + 23\text{p} \quad (100\text{p} = ₹ 1)$$

$$= ₹ 1 + 23\text{p}$$

23p to remain in paise field.

Add the rupees now ₹ 86 + ₹ 55 + ₹ 1 = ₹ 142

So, the result is ₹ 142.23

**Example 2.** Add ₹ 132.45, ₹ 623.32 and ₹ 28.47

**Solution.** Arrange the numbers in tabular format as shown below.

| Rs |   |   |   |   | P |   |
|----|---|---|---|---|---|---|
|    |   | 1 | 1 |   | 1 |   |
|    | 1 | 3 | 2 | . | 4 | 5 |
|    | 6 | 2 | 3 | . | 3 | 2 |
| +  |   | 2 | 8 | . | 4 | 7 |
|    | 7 | 8 | 4 | . | 2 | 4 |

So, the result is ₹ 784.24.

### **Subtraction of Money Without Borrow**

**Example 1.** Subtract Rs. 234.23 from 987.56

**Solution.** Arrange the numbers in tabular format as shown below.

| Rs |   |   |   |   | P |   |
|----|---|---|---|---|---|---|
|    | 9 | 8 | 7 | . | 5 | 6 |
| -  | 2 | 3 | 4 | . | 2 | 3 |
|    | 7 | 5 | 3 | . | 3 | 3 |

Subtract the paise first

$$56\text{p} - 23\text{p} = 33\text{p}$$

Then subtract the rupees

$$\text{₹ } 987 - \text{₹ } 234 = \text{₹ } 753$$

So, the result is ₹ 753.33

Subtraction of Money With Borrow

Let's see an example to understand the process of subtraction with borrow.

**Example 1.** Subtract 242.35 from 353.21

**Solution.** Arrange the numbers in tabular format as shown below.

**Method 1.**

| Rs |   |   |   |   | P |   |
|----|---|---|---|---|---|---|
|    | 3 | 5 | 2 | . | 2 | 1 |
| -  | 2 | 4 | 2 | . | 3 | 5 |
|    | 1 | 1 | 0 | . | 8 | 6 |

Subtract the paise first

As  $35\text{p} > 21\text{p}$ , borrow Rs 1 from 353.

$$1 \text{ rupee} + 21\text{p} = 121 \text{ paise}$$

$$121\text{p} - 35\text{p} = 86\text{p}$$

Write 86p below Paise column

Earlier ₹ 1 was borrowed from 353 then ₹ 352 remained. Subtract 242 from 352

| Rs |   |   |   |   | P |   |
|----|---|---|---|---|---|---|
|    | 3 | 5 | 2 | . | 2 | 1 |
| -  | 2 | 4 | 2 | . | 3 | 5 |
|    | 1 | 1 | 0 | . | 8 | 6 |

$$₹ 352 - ₹ 242 = ₹ 110$$

Write ₹ 110 below rupees column.

So, the answer is ₹ 110.86.

### **Method 2**

Arrange the amount to be subtracted under the larger amount in a column such that dots fall in a column as shown below.

| Rs |   |   |   |   | P |   |
|----|---|---|---|---|---|---|
|    | 3 | 5 | 3 | . | 2 | 1 |
| -  | 2 | 4 | 2 | . | 3 | 5 |
|    | 1 | 1 | 0 | . | 8 | 6 |

Subtract the amounts like ordinary numbers and put a dot in the result dot's column.

### **Multiplication of Money by a Number**

**Example 1.** Multiply ₹ 24 by 5

**Solution.**

$$\begin{array}{r}
 \text{Rs. } 24 \\
 \times 5 \\
 \hline
 120
 \end{array}$$

So, the result is ₹ 120

**Example 2.** Multiply Rs. 9.52 by 5

**Solution.**

$$\begin{array}{r}
 \text{Rs. } 9.52 \\
 \times 5 \\
 \hline
 47.60
 \end{array}$$

So, the result is Rs. 47.60

**Example 3.** Multiply Rs. 15.12 by 12

**Solution.**

$$\begin{array}{r}
 \text{Rs. } 15.12 \\
 \times 12 \\
 \hline
 3024 \\
 1512 \\
 \hline
 181.44
 \end{array}$$

So, the answer is Rs. 181.44.

### **Division of Money by a Number**

**Example 1.** Divide Rs. 35 by 7

**Solution.**

$$\begin{array}{r}
 5 \\
 7 \overline{) 35} \\
 \underline{- 35} \\
 0 \quad 0
 \end{array}$$

So, the answer is 5.

**Example 2.** Divide 63.72 by 9

**Solution.**

$$\begin{array}{r}
 7 \quad 0 \quad 8 \\
 9 \overline{) 63.72} \\
 \underline{- 63} \\
 0 \quad 7 \\
 \quad \underline{- 0} \\
 \quad \quad 7 \quad 2 \\
 \quad \quad \underline{- 7 \quad 2} \\
 \quad \quad \quad 0
 \end{array}$$

So, the answer is Rs. 7.08

# G D GOENKA PUBLIC SCHOOL, MORENA

## SUBJECT – MATHEMATICS

### GRADE – 3

#### Unit – 8 Measurement

##### Important points

1. The standard unit of length is 'Meter'.
2. We use 'cm' for centimeter, 'mm' for millimeter, 'm' for meter and 'km' for kilometer in short form.
3. 1 centimeter length is equally divided into 10 small parts and each part is called millimeter (mm).

Thus, 1 cm = 10 mm or 10 mm = 1 cm

4. 1 meter length is equally divided into 100 small parts and each part is called centimeter (cm).

Thus, 1 m = 100 cm or 100 cm = 1 m

5. 1 kilometer length is equally divided into 1000 small parts and each part is called meter (m).

##### Addition and Subtraction of units of length

Arrange the number in column according to the units. First add smaller unit then add larger unit.

##### Example 1:

Add 24m 14cm and 35m 13cm

|   | m     | cm    |
|---|-------|-------|
|   | 24    | 14    |
| + | 35    | 13    |
|   | <hr/> | <hr/> |
|   | 59    | 27    |

##### Example 2:

Subtract 14m 13cm from 35m 13cm

|   | m     | cm    |
|---|-------|-------|
|   | 35    | 13    |
| - | 14    | 13    |
|   | <hr/> | <hr/> |
|   | 21    | 00    |

**Example 3:**

A shopkeeper had 250m long rope. 190m was sold. What is the length of the rope left?

Solution:

Length of rope = 250m

Length of rope sold = 190m

Length of rope left = 250m – 190m

$$\begin{array}{r} 1 \cancel{2} 5 0 \text{ m} \\ - 1 9 0 \text{ m} \\ \hline 0 6 0 \text{ m} \end{array}$$

**Conversions:**

**To convert meters into centimeters, we multiply the given number of meters by 100.**

**Example 1:** Convert 5m into cm

$$5\text{m} = 5 \times 100$$

$$= 500\text{cm}$$

**Example 2:** Convert 4m 85cm into cm

$$4\text{m } 85\text{cm} = 4 \times 100\text{cm} + 85\text{cm}$$

$$= 400\text{cm} + 85 \text{ cm} = 485 \text{ cm}$$

**To convert kilometers into meters, we multiply the given number of kilometers by 1000.**

**Example 1:** Convert 15km into m

$$15\text{m} = 15 \times 1000$$

$$= 15000\text{m}$$

**Example 2:** Convert 4km 850m into m

$$4\text{km } 850\text{m} = 4 \times 1000\text{m} + 850\text{m}$$

$$= 4000\text{m} + 850\text{m}$$

$$= 4850\text{m}$$

**G D GOENKA PUBLIC SCHOOL, MORENA**

**SUBJECT – MATHEMATICS**

**GRADE – 3**

**Unit – 7 Fraction**

**Fractions**

A fraction is a number that describes a relationship between a part (represented by the numerator) and a whole (represented by the denominator).

Numerator  
Number of parts we have

Fraction Bar

Denominator  
Total parts in a whole

$$\frac{3}{5}$$

**Types of Fraction**

**Proper Fraction**

A fraction where the numerator is less than the denominator, then it is known as a proper fraction.

i.e., Numerator < Denominator

For example,

$$\frac{3}{5}$$

3 ——— Smaller  
5 ——— Larger

Proper Fraction

**Note:**

- The value of proper fraction after further simplification is always less than 1.

**Improper Fraction**

A fraction where the numerator is greater than the denominator, then it is known as an improper fraction.

i.e., Numerator > Denominator

For example,

$$\frac{9}{5}$$

Larger

Smaller

Improper Fraction

**Note:**

- All the natural numbers can be represented in the form of fractions, where the denominator is always equal to 1.
- The simplification of improper fraction results in the value which is equal or greater than 1, but not less than 1.

### Like Fractions

The fractions which have the same denominators are called like fractions.

For example  $1/2$ ,  $3/2$ ,  $5/2$ ,  $7/2$  are like fractions.

The simplification of such fractions is easy, as all the denominators here are the same. Suppose we need to add all the above like fractions, then;

$$1/2 + 3/2 + 5/2 + 7/2 = (1+3+5+7)/2 = 16/2 = 8$$

### Unlike Fractions

The fractions which have unequal denominators or different denominators are called, unlike fractions.

For example  $1/2$ ,  $1/3$ ,  $1/4$ ,  $1/5$ , are unlike fractions.

Simplification for such fractions is a little lengthy method since we need to factorise the denominator first and then simplify them (in case of addition and subtraction).

- Suppose, we have to add  $1/2$  and  $1/3$ . Then first we will find the LCM of 2 and 3 which is equal to 6.
- Now we need to multiply  $1/2$  by 3 and  $1/3$  by 2, both in numerator and denominator.
- The fractions become  $3/6$  and  $2/6$ .
- Now if we add  $3/6$  and  $2/6$ , we get;
- $3/6+2/6 = 5/6$

## Equivalent Fractions

When two or more fractions have the same result after simplification for which they represent the same portion of the whole, then such fractions are equal to each other and are called equivalent fractions.

For example,  $1/2$  and  $2/4$  are equivalent.

$1/3$  and  $3/9$  are equivalent.

## Examples

Let us see some examples here based on the fraction's types.

- Examples of Proper Fractions:  $2/3$ ,  $2/4$ ,  $2/5$ ,  $1/2$ ,  $4/7$ ,  $7/9$ , etc.  
(Numerator < Denominator)
- Examples of Improper Fractions:  $3/2$ ,  $4/2$ ,  $5/2$ ,  $7/4$ ,  $9/7$ ,  $8/5$ , etc.  
(Numerator > Denominator)

**G D GOENKA PUBLIC SCHOOL, MORENA**

**SUBJECT – MATHEMATICS**

**GRADE – 3**

**Unit – 6 Division**

**Division by a One digit Number Without Remainder**

**Example 1.** Divide 4242 by 2.

**Solution**

$$\begin{array}{r} \phantom{2} \phantom{1} \phantom{2} \phantom{1} \\ 2 \overline{) 4242} \\ \underline{-4} \phantom{0} \phantom{2} \phantom{4} \phantom{2} \\ \phantom{0} 2 \phantom{4} \phantom{2} \\ \underline{\phantom{0} 2} \phantom{4} \phantom{2} \\ \phantom{0} \phantom{2} 4 \phantom{2} \\ \underline{\phantom{0} \phantom{2} 4} \phantom{2} \\ \phantom{0} \phantom{2} \phantom{4} 2 \\ \underline{\phantom{0} \phantom{2} \phantom{4} 2} \\ \phantom{0} \phantom{2} \phantom{4} \phantom{2} 0 \end{array}$$

First divide thousands place.

$$4 \text{ thousands} \div 2 = 2 \text{ thousands}$$

We write 2 in thousands place in the quotient.

Next divide hundreds place

$$2 \text{ hundreds} \div 2 = 1 \text{ hundreds}$$

We write 1 in hundreds place in the quotient.

Next divide tens place

$$4 \text{ tens} \div 2 = 2 \text{ tens}$$

We write 2 in tens place in the quotient.

Next divide ones place

$$2 \text{ ones} \div 1 = 1 \text{ ones}$$

We write 1 in once place in the quotient.

$$\text{So, } 4242 \div 2 = 2121.$$

**Example 2.** Divide 36252 by 3

**Solution.**

A long division problem showing 36252 divided by 3. The quotient is 12084. Red arrows indicate the steps: 3 into 3 is 1, 3 into 6 is 2, 3 into 2 is 0, 3 into 5 is 1, and 3 into 2 is 0. The final remainder is 0.

$$\begin{array}{r} 12084 \\ 3 \overline{) 36252} \\ \underline{-3} \phantom{0000} \\ 06 \phantom{000} \\ \underline{-6} \phantom{000} \\ 02 \phantom{00} \\ \underline{-0} \phantom{00} \\ 25 \phantom{0} \\ \underline{-2} \phantom{0} \\ 012 \\ \underline{-1} \phantom{0} \\ 0 \end{array}$$

**Division by a One digit Number With Remainder**

**Example 1.** Divide 4527 by 5

**Solution.** Use the division rules explained earlier

A long division problem showing 4527 divided by 5. The quotient is 905 and the remainder is 2. The steps are: 5 into 4 is 0, 5 into 45 is 9, 5 into 2 is 0, and 5 into 27 is 5 with a remainder of 2.

$$\begin{array}{r} 905 \\ 5 \overline{) 4527} \\ \underline{-4} \phantom{000} \\ 02 \phantom{0} \\ \underline{-0} \phantom{0} \\ 27 \\ \underline{-2} \phantom{0} \\ 02 \end{array}$$

So,  $4527 \div 5 = 905$  is Quotient and 2 is Remainder

**Example 2.** Divide 27315 by 7

**Solution.** Arrange the dividend and divisor in a tabular format as given in below figure

$$\begin{array}{r} 3902 \\ 7 \overline{) 27315} \\ \underline{-2} \phantom{0} \\ 63 \\ \underline{-6} \phantom{0} \\ 01 \\ \underline{-0} \\ 15 \\ \underline{-1} \phantom{0} \\ 4 \\ \underline{-4} \\ 0 \end{array}$$

**Rules to verify the division**

1. Division without remainder

$$\text{Dividend} = \text{Quotient} \times \text{Divisor}$$

2. Division with remainder

$$\text{Dividend} = (\text{Quotient} \times \text{Divisor}) + \text{Remainder}$$

**Division by 10 and 100**

**Example 1.** Divide 8500 by 10

**Solution.**

$$\begin{array}{r} 850 \\ 10 \overline{) 8500} \\ \underline{-8} \phantom{0} \\ 50 \\ \underline{-5} \phantom{0} \\ 00 \\ \underline{-0} \\ 0 \end{array}$$

Quotient = 850



$$\begin{array}{r}
 \phantom{100} \phantom{00} 4 \phantom{00} 5 \phantom{00} 7 \\
 100 \overline{) 4 \phantom{00} 5 \phantom{00} 7 \phantom{00} 0 \phantom{00} 5} \\
 \underline{-4 \phantom{00} 0 \phantom{00} 0} \phantom{00} \\
 \phantom{100} \phantom{00} 5 \phantom{00} 7 \phantom{00} 0 \\
 \underline{-5 \phantom{00} 0 \phantom{00} 0} \phantom{00} \\
 \phantom{100} \phantom{00} \phantom{00} 7 \phantom{00} 0 \phantom{00} 5 \\
 \underline{-7 \phantom{00} 0 \phantom{00} 0} \phantom{00} \\
 \phantom{100} \phantom{00} \phantom{00} \phantom{00} 5
 \end{array}$$

Quotient = 457

Remainder = 5

### Division by Two digit Number

**Example 1.** Divide 1740 by 15

**Solution.**

$$\begin{array}{r}
 \phantom{15} \phantom{00} 1 \phantom{00} 1 \phantom{00} 6 \\
 15 \overline{) 1 \phantom{00} 7 \phantom{00} 4 \phantom{00} 0} \\
 \underline{-1 \phantom{00} 5} \phantom{00} \\
 \phantom{15} \phantom{00} 2 \phantom{00} 4 \\
 \underline{-1 \phantom{00} 5} \phantom{00} \\
 \phantom{15} \phantom{00} \phantom{00} 9 \phantom{00} 0 \\
 \underline{-9 \phantom{00} 0} \phantom{00} \\
 \phantom{15} \phantom{00} \phantom{00} \phantom{00} 0
 \end{array}$$

15 is the divisor here. The two digits on the extreme left of the dividend is 17.

17 is greater than 15.

$17 \div 15 = 1$  Quotient and 2 is Remainder.

1 goes to the hundreds place of quotient as shown in the figure. 4 came down and sat on





$$\begin{array}{r}
 12 \overline{) 456820} \\
 \underline{-48} \phantom{0} \\
 68 \phantom{0} \\
 \underline{-60} \phantom{0} \\
 82 \phantom{0} \\
 \underline{-72} \phantom{0} \\
 100 \phantom{0} \\
 \underline{-96} \\
 4
 \end{array}$$

Shopkeeper bought 4568 dresses and he has 4 dollars balance with him.