

## STUDY COURSE MATERIAL

### MATHEMATICS

SESSION-2020-21

CLASS- III

## TOPIC: MORE ABOUT DIVISION

### DAY-1

#### ❖ TEACHING MATERIAL

## Division with Remainders:

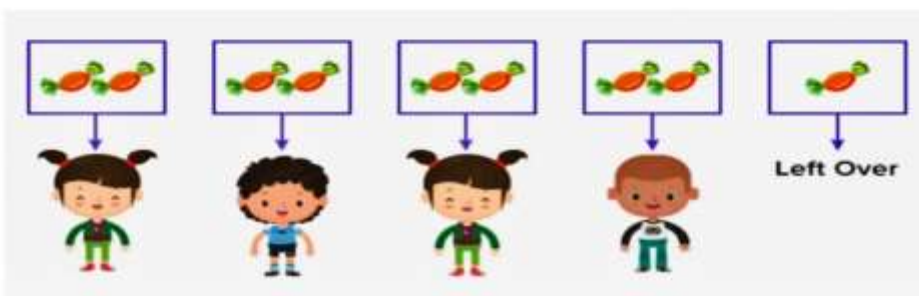
### What is Remainder?

Remainder means something which is 'left over' or 'remaining'.

If you have 9 toffees and you share it **equally** with your four friends. How many toffees will you have?



If you give two toffees each to your friends, you would have shared 8 toffees. Only 1 toffee will remain with you, and this leftover of 1 toffee is called the remainder.



Mathematically we can write the above expression as:

$$9 \div 4 = 2 \text{ remainder } 1$$

Where 9 is the **dividend**, 4 is the **divisor**, 2 is the **quotient**, and 1 is the remainder.

On dividing 22 by 3.

We get 3 equal parts of 7, that add up to 21

$$3 \times 7 = 21.$$

We are left with 1. This 1 is the remainder.

When one number cannot divide another **number** completely, it le get a remainder.

**Examples:**

$18 \div 7$	Remainder 4
$15 \div 10$	Remainder 5
$23 \div 6$	Remainder 5
$46 \div 9$	Remainder 1
$15 \div 5$	Remainder 0

### Parts of a Division

$$\begin{array}{ccccccc} \mathbf{11} & \div & \mathbf{2} & = & \mathbf{5} & \text{R} & \mathbf{1} \\ \text{dividend} & & \text{divisor} & & \text{quotient} & & \text{remainder} \end{array}$$

$$\begin{array}{r} \text{divisor} \rightarrow 2 \overline{)11} \\ \underline{10} \\ 1 \leftarrow \text{remainder} \end{array} \quad \begin{array}{l} \leftarrow \text{quotient} \\ \leftarrow \text{dividend} \\ \leftarrow \text{remainder} \end{array}$$

**Divisor**                      **Quotient**

**3**                      **3**

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**3** ) **10**                      **Dividend**

**9**

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**1**                      **Remainder**

## Related Questions:

1) Divide the following:

- $23 \div 4$
- $54 \div 7$
- $34 \div 6$
- $53 \div 3$
- $42 \div 2$
- $64 \div 5$
- $78 \div 9$

❖ Video link

[http://youtu.be/0cG\\_jL39XZEme](http://youtu.be/0cG_jL39XZEme)

<http://youtu.be/E-ou94u1FBE>

<http://youtu.be/g80qTTL0ZPA>

# DAY-2

## ❖ TEACHING MATERIAL

Division by 1 - digit number:

### Long Division

2-digits ÷ 1-digit

Divide

$$\begin{array}{r} 1 \\ 6 \overline{)75} \end{array}$$

$$7 \div 6$$

Multiply

$$\begin{array}{r} 1 \\ 6 \overline{)75} \\ \underline{6} \end{array}$$

$$1 \times 6$$

Subtract

$$\begin{array}{r} 1 \\ 6 \overline{)75} \\ \underline{-6} \\ 1 \end{array}$$

Bring Down

$$\begin{array}{r} 1 \\ 6 \overline{)75} \\ \underline{6} \downarrow \\ 15 \end{array}$$

$$\begin{array}{r} 12 \\ 6 \overline{)75} \\ \underline{6} \\ 15 \end{array}$$

$$15 \div 6$$

$$\begin{array}{r} 12 \\ 6 \overline{)75} \\ \underline{6} \\ 15 \\ \underline{12} \end{array}$$

$$2 \times 6$$

$$\begin{array}{r} 12 \\ 6 \overline{)75} \\ \underline{6} \\ 15 \\ \underline{-12} \\ 3 \end{array}$$

The problem:  $99 \div 3 = ?$

Start by dividing. Try a number you think will work like 3.

$$\begin{array}{r} 3 \\ 3 \overline{) 99} \\ \underline{-9} \\ 0 \end{array}$$

(multiply  $3 \times 3 = 9$ )  
(subtract  $9 - 9 = 0$ )  
9 (bring down the next nine)

$$\begin{array}{r} 33 \\ 3 \overline{) 99} \\ \underline{-9} \\ 09 \\ \underline{-9} \\ 0 \end{array}$$

(multiply  $3 \times 3 = 9$ )  
(subtract  $9 - 9 = 0$ )

Final answer :  $99 \div 3 = 33$

## Related questions:

1) Divide the following:

- $25 \div 4$
- $37 \div 6$
- $65 \div 7$
- $37 \div 5$
- $42 \div 8$
- $73 \div 9$

❖ Video link

<http://youtu.be/tjO7YaSXg54>

❖ Video link

[http://youtu.be/CAGK7gDrP\\_I](http://youtu.be/CAGK7gDrP_I)

# DAY-3

## ❖ TEACHING MATERIAL

**Cross checking of Division:**

**We know that,**

**Dividend = Divisor x Quotient + Remainder**

Ex: Divide 75 by 12

$$75 \div 12 = 6, R = 3$$

**How can we check Division,**

Let's check as **Division** is opposite of **Multiplication**

Here, **75** is Dividend , **12** is Divisor, **6** is Quotient and **3** is Remainder

$$75 = 12 \times 6 + 3$$

$$75 = 72 + 3$$

$$75 = 75$$

## **Related questions:**

Divide the following::

$$34 \div 4$$

$$25 \div 3$$

$$56 \div 8$$

$$43 \div 5$$

$$76 \div 6$$

Divide and check your answers:

$$33 \div 6$$

$$52 \div 5$$

$$45 \div 4$$

$$29 \div 3$$

$$16 \div 7$$

$$68 \div 9$$

$$75 \div 8$$

## ❖ VIDEO-LINKS

[http://youtu.be/CIJSwfTk\\_Uw](http://youtu.be/CIJSwfTk_Uw)

<http://youtu.be/2RJq6-1W-1s>

## DAY-4

## ❖ TEACHING MATERIAL

### Division by 2 - digit Numbers:

For dividing by 2 - digit numbers, you would need to either remember the multiplication table of the Divisor (which may not be possible in all the cases) or do a bit of thinking before actually starting to do the division. The following examples will explain:

Example: Divide 80 by 13

Solution: We know that,  $13 \times 6 = 78$  and  $13 \times 7 = 91$ .

Since 80 is less than 91 but more 78, the Quotient has to be 6.

Therefore  $80 \div 13$  has a Quotient 6 and a remainder 2.

$$\begin{array}{r} 13 \overline{) 80} \quad ( 6 \\ \underline{78} \\ 2 \end{array}$$



We will learn step-by-step how to divide by 2-digit divisors.

Let us consider some examples of division by two-digit numbers or divisors.

### 1. Divide 618 by 12.

$$\begin{array}{r} 51 \\ 12 \overline{) 618} \\ \underline{- 60} \phantom{|} \\ 18 \\ \underline{- 12} \\ 6 \end{array}$$

Divisor (12) has two digits. Consider the two digits of the dividend from the left (61).

Now, consider the left most digit of the divisor 12 i.e. 1 and the left most digit of the dividend i.e. 6.

Quotient =  
51

As, 1 goes into 6, 6 times. So, 6 may be the left most digit of the quotient.

Remainder  
= 6

Let us check  $12 \times 6 = 72$ , but  $72 > 61$ .

Now, consider 5 instead of 6 as left most digit of the quotient.



Let us check  $12 \times 5 = 60$ , but  $60 < 61$ .

Now, write 5 as the left most digit of the quotient and 60 below the 61.

Subtract  $61 - 60 = 1$ . Write 1 as remainder.

Bring down 8 from the dividend 618 and write it to the right of 1.

It makes the remainder 18, which we consider as dividend now. i.e. we have to find  $18 \div 12$ .

1 goes into 1, 1 time. So, 1 may be the second digit of the quotient.

Let us check.  $12 \times 1 = 12$  and  $12 < 18$

So, write 1 as quotient next to the 5 and 12 below the 18.

Subtract  $18 - 12 = 6$ . Write 6 as remainder.

6 becomes the final remainder as there is no digit left in dividend 618 to bring down and the remainder 6 cannot be divided by the divisor 12.

## Related questions:

1) Divide the following:

- $345 \div 13$
- $123 \div 21$
- $432 \div 14$
- $675 \div 23$
- $214 \div 41$

### ❖ VIDEO-LINKS

[http://youtu.be/HdU\\_rf7eMTI](http://youtu.be/HdU_rf7eMTI)

<http://youtu.be/1j5eWFQfLYc>

# DAY-5

## TEACHING MATERIAL

Dividing multiples of 10, 20, 30.. ..

Multiples of ten are :

$$1 \text{ ten} = 10$$

$$2 \text{ tens} = 20$$

$$3 \text{ tens} = 30$$

$$4 \text{ tens} = 40 \text{ etc}$$

They are called multiples of ten.

Example: Divide 6 tens by 2

$$6 \text{ tens} = 60 \div 2 = 30$$

$$\begin{array}{r} 2)60(30 \\ 60 \\ \hline \end{array}$$

60

xx

## Dividing by Multiples of 10 and 100

- You can use the basic division facts to calculate larger division problems.

$$120 \div 2 = 60$$

$$1500 \div 5 = 300$$

$$240 \div 80 = 3$$

$$3200 \div 40 = 80$$

$$2800 \div 700 = 4$$

# Dividing by multiples of 10

What is  $280 \div 40$ ?

You know  $28 \div 4 = 7$

$$\text{So } 28\cancel{0} \div 4\cancel{0} = 7$$

**Rule :** Rewrite the dividend and divisor as multiples of ten. Then, solve the simpler division problem using a basic fact and number sense.

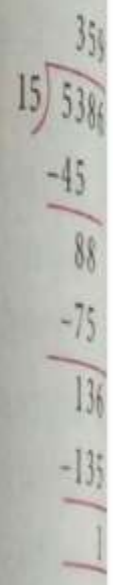
## Word Problems:

**Word Problems**

**Example 8:** 5386 balloons were brought and distributed equally among 15 children. How many balloons did each child get and how many were left?

**Solution:** Number of balloons = 5386

Each child will get 359 balloons. 1 is left.



## Related Questions:

1) Divide the following numbers:

- $30 \div 3$
- $350 \div 7$
- $200 \div 2$
- $120 \div 6$
- $150 \div 5$
- $800 \div 8$

2) Solve the following:

- There are 200 books on 5 shelves. How many books are there on each shelf?
- 40 chocolates need to be divided among 8 children. How many chocolate will each child get?
- 550 clips need to be packed in 11 packets, how many clips would be there in each packet?

### ❖ VIDEO -LINKS

[http://youtu.be/\\_LxM0pIPzzw](http://youtu.be/_LxM0pIPzzw)

### ❖ VIDEO-LINKS

<http://youtu.be/IsPpBRuaSEw>

### VIDEO-LINKS

<http://youtu.be/1ntjeJdX6H4>