LESSON 6 Multiplication and Division-II

You have seen how to multiply numbers. If we change the order of the numbers, would our answer change? To find out, let us solve 2×3 and then 3×2 .



Both give the same answer '6'. Hence $2 \times 3 = 3 \times 2$

Now try the same with 4×5 and 5×4







Are the two answers the same? ------

Hence $4 \times 5 = ---- \times -----$

Similarly test the following:

 $4 \times 3 = 3 \times 4$, $6 \times 3 = 3 \times 6$ $7 \times 2 = 2 \times 7$ $5 \times 4 = 4 \times 5$

Draw lines and multiply:

In class 2, we have used matchsticks to create tables. Now, let us draw lines instead of matchsticks, and find out the product 3×4 and 4×3 to see if they are the same.

To multiply 3 by 4 (to solve 3×4), draw 3 horizontal lines in your copy or slate and then draw 4 verticle lines on these. wherever the two types of lines meet, make the sign as shown in the picture.



Now, count how many signs are there? -----

Write $3 \times 4 = -----$

Similarly



To solve 4×3 , draw 4 horizontal and 3 verticle lines. Make 3 verticle lines on these.

Make the signs and count them.

How many signs are there?

Write $4 \times 3 = ---$

Now can you say 3×4 and 4×3 are equal?

Do the following multiplication by drawing such lines. Are

 $2 \times 4 \text{ and } 4 \times 2, \qquad 3 \times 5 \text{ and } 5 \times 3, \qquad 7 \times 2 \text{ and } 2 \times 7$ $4 \times 4 \text{ and } 4 \times 4, \qquad 4 \times 6 \text{ and } 6 \times 4, \qquad 1 \times 6 \text{ and } 6 \times 1$ Are 0×3 and 3×0 equal?



Exercise

Fill in the blanks

6 × 4 = <u>4</u> × 6	3 × 7 = 7 ×	4 × = 5 × 4
× 3 = 3 × 4	9 × 4 = 4 ×	8 × = 3 × 8
5 × = 1 × 5	1 × 7 = × 1	9 × = 1 × 9
8 × 6 = × 8	6 × 9 = 9 ×	7 × = 6 × 7

Complete the table

X	1	2	3	4	5
1					
2 —		\rightarrow	2×3=6		
3					
4					
5					

X	1	2	3	4	5
6					
7					
8 -		> 16			
9					
10					



X	6	7	8	9	10
6					
7					
8 -			>	72	
9					
10 -				\rightarrow	100

X	7	3	5	2	1
8					
4					
6 -			30		
10					
9					



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What are Multiplicand, Multiplier and Product?

Let us understand A carpenter makes 3 cots in one day In 7 days, he can make 21 cots You know that we can write this as $3 \times 7 = 21$

3 × 7 = 21

When we write an example related to multiplication in such a manner, it is called a **multipliaction fact**.

Thus $3 \times 7 = 21$ is a multiplication fact

- Here 3 is called a multiplicant
 - 7 is called a multiplier and
 - 21 is called as their product

Now write the multiplicant, multiplier and product in each of these multiplication facts.

2 × 5 = 10	Multiplicant	Multiplier	Product
9 × 6 = 54	Multiplicant	Product	Multiplier
8 × 8 = 64	Multiplier	Multiplicant	Product

In the following multiplication facts, write what the encircled number is, a multiplicand or a multiplier or the product.

In	5 × $(4) = 20$,	4	is a multiplier
In	9 × 12 = 108		is a
In	8 × 3 = 24,		is a
In	3 × 8 = 24,		is a
In	4 × 2 = 8,		is a

Multiplicaton and Division-II **Who was holding which of these balloons?**

Match with a line





76How many biscuits

Monu bought 4 packets of biscuits. He opened one packet and found there were 12 biscuits. He thought how many biscuits would he have, if he puts the biscuits from all the four packets together.

He wrote in his copy 12 + 12 + 12 + 12

He thought he could also write this in the form

of a multiplication fact. 12 \times 4

Now he faced a problem, how should he multiply 12 by 4?

Let us help him.

The number 12 has 2 ones and 1 ten.

So, for multiplying 12 by 4, let us first multiply 2 ones by 4, which gives 8 ones, and write it in the one's place.

Then, we will multiply 1 ten by 4,

We will get 4 tens,

We will write this in the ten's place.



 $1 \times 4 = 4$ tens

Monu has a total of 48 biscuts in all the four packets.





Mult	iplicator	n and L	Division-II						7	7
(4)	1	1		(5)	3	0	(6)	9	9	
	×	9	-		×	3	_	×	1	
			-	_			_			
(7)	2	9		(8)	1	3	(9)	3	2	
	×	0	-	_	×	3	_	×	4	

Multiplication (which carries)

Multiply 34 by 7

First, multiply 4 in the one's place by 7.

 $4 \times 7 = 28$ units

28 units = 2 tens and 8 units

So, write 8 in one's place below the line. We will keep the remaining two tens - separate because we will still get few more number of tens. So just write 2 in the tens column, above 3. 2 is the carry over.

2	
34	
× 7	
238	

2) 3 4

 \times 7

8

Now multiply the tens

 $3 \times 7 = 21$ tens

After adding 2 tens of the 'carry over'

21 + 2 = 23 tens

23 tens = 2 hundreds and 3 tens

So we write 3 in the ten's place and 2 in the hundred's place

Thus 3 4× 7 we got 238

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Maths-3

Let us do some more sums

1.	4 5	2.	94	3.	3 7
	× 7	_	× 3		× 5
		-			
4.	69	5.	8 3	6.	57
	× 4	-	× 6		× 7
		-			
7.	3 0	8.	72	9.	59
	× 9	-	× 6		× 6

Till now you have done multiplication of a two digit, number by a single digit number. Let us do a multiplication involving a three digit number and a single digit number

Let us understand this by an example - Multiply 241 by 2

2 4 1	Multiply 1 in the units place with 2
× 2	$1 \times 2 = 2$ units
2	Write 2 in the unit's place.
241	Multiply 4 in the ten's place with 2
× 2	$4 \times 2 = 8$ tens
8 2	write 8 in the ten's place.
2 4 1	Now Multiply 2 of the hundred's place with 2
× 2	$2 \times 2 = 4$ hundreds
482	Write this in the hundred's place.
	Thus, we get $241 \times 2 = 482$

Multiplicaton and	Division-II
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Now try some more such sums.

3 1 1	2 0 1	4 0 8
× 2	× 4	× 0
1 2 3	2 1 0	1 1 1
X 3	× 4	X 9

Multiplication by 10

Now, we know how to multiply any number with a single digit number.

 $(5 \times 10 = ?)$ But, what shall we get when we multiply by 10? You already know $5 \times 10 = 10 \times 5$ therefore, $5 \times 10 = 50$ as well. Since $10 \times 5 = 50$ Now think of some numbers and multiply it by 10 2. 1. _____ _____ 3. 4. 5. _____ 6. _____ Is there a similarity among these products? Can you write the products even without knowing the table of 10? Now write the following products. 1. 10 × 7 = -----2. $2 \times 10 = ------$ 9 × 10 = -----4. $4 \times 10 =$ 3.

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Maths-3

Look at the products of the numbers given below, Is multiplication by 100 similar to that of 10?

 $100 \times 4 = 400$ $100 \times 8 = 800$

Observe and understand

Multiply 136 by 7	
НТО	First we multiply the digits in the
1 3 6	one's place.
× 7	$6 \times 7 = 42$ Units
2	42 Units = 4 Tens and 2 Units
	2 is written in the answer in the one's place.
	4 tens are written at the tens' place above 3.
НТО	4 tens is carried over.
(2) (4)	Then we multiply the digits in the tens place
1 3 6	$3 \times 7 = 21$ Tens
× 7	Adding the carried 4 tens gives
5 2	21 + 4 = 25 Tens
	25 tens = 2 hundreds and 5 tens
	So 5 is written in the ten's place. 2 hundreds are
	carried over. It is written above 1 in the
	hundred's place
НТО	Now multiplication of hundreds
(2)(4)	$1 \times 7 = 7$ hundreds
1 3 6	Add the 2 hundreds carried over to this place
<u>× 7</u>	and we get $7+2 = 9$ hundreds.
952	Write 9 in the hundreds place
	So we get $136 \times 7 = 952$

Multiplicaton and Division-II

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Now you try these

1	2	3		1	0	5		1	1	0
	×	2			×	3			×	6
							-			
							-			
0	0	0		F	0	7			0	F
2	0	0		5	6	1		1	8	5
	×	4			×	1			×	5
							-			
							-			
				_	_	_		_	_	_
1	1	1		2	0	6		3	7	2
	×	6			×	4			×	2
							-			

Number Game:

Think of any one number 6	Think of any one number
Now double it. $6 \times 2 = 12$	Now double it
Now multiply this by five $12 \times 5 = 60$	Now multiply this by five
You got a number.	You got a number.
Divide it by 10 $60 \div 10 = 6$	Divide it by 10



Was the number you got the same as the number you had initially thought of?

Now take more numbers and do the same.

82 Division

You have seen how to distribute things.

If we were to distribute 35 things among 5 people, then we write it as $35 \div 5$ is also written as

5)35

We want to see how many times can 5 be subtracted from 35. This also means - How many times do we have to take 5 things to make a total of 35 things.

You know that to this find out we have to say the table of 5 (Remember that the table should not go beyond 35)

Five ones are five Five twos are ten Five threes are fifteen Five fours are twenty Five fives are twenty five Five sixes are thirty Five sevens are thirty five (Stop here because we have to distribute thirty five things only.)

By saying the table of five till sevens, we got five sevens are thirty five. We write this as:

7	There were 35 things to be distributed
5) 35	
- 3 5	They were to be distributed among 5 people.
0	Each person got 7 things.

In this, 35 things were to be distributed. So 35 is the 'Divident'.

We are dividing by 5. So that is 5 is the 'Divisor'.

We got 7 as the answer. So 7 is the 'Quotient'.

Multiplicaton and Divisio	n-II	83
Now practise :		
1. 28 ÷ 7	2. 27 ÷ 3	3. 36 ÷ 9
Solution: $7 \overline{)} \begin{array}{c} 4 \\ 28 \\ -28 \\ 0 \end{array}$		
Dividend $= 28$ Divisor $= 7$ Quotient $= 4$	Dividend Divisor Quotient	Dividend Divisor Quotient
4. 56 ÷ 7	5. 40 ÷ 5	6. 16 ÷ 2
7. 64 ÷ 8	8. 32 ÷ 4	9. 36 ÷ 6

You have seen how to divide by saying tables. Can you do all divisions using this method? Let us divide $84 \div 7$ and see.

Let us say the table of 7 Seven ones are seven Seven twos are _____ Seven threes are _____

7)84

Seven tens are seventy.

We have not managed to reach 84 at all! and we don't know the tables beyond tens.



So what do we do now?

Either we make tables beyond ten times or we find another way.

Let us try to understand this by the following picture.

If we represent 84 by bundles and matchsticks, then we would have 8 bundles and 4 matchsticks.



We have to distribute this among seven people.

We can do it by two ways, we untie all the bundles, mix all the matchsticks and start distributing the matchsticks one by one,

or distribute 7 full bundles to each person and then open the remaining bundles to further distribute.

You are probably thinking that the second way is a much better way. Then you are right. Let us distribute in that way and see.

We have 8 bundles. To be distributed among 7 people. So each persons gets 1 whole bund 1 bundle is left.	$7) \frac{1}{84}$ $11e, \frac{-7}{1}$	In other words, we said table of seven for 8 tens. Seven ones are seven. So, we subtracted 7 from 8. Therefore 1 tens was left.
We untied the remaining bundle. so we got 10 matchsticks. When we added 4 loose matchsticks to the 10 matchsticks, we got 14 matchsticks.	$7) \frac{1}{84} \\ \frac{-7}{14}$	Then, we brought down the 4 ones or 4 unit Adding them to the remaining 1 tens, we got 4 units + 10 units = 14 units or 14 ones.
14 matchsticks were distributed among 7 persons. So each person got 12 matchsticks each. No. matchstick was left or 0 matchstick remained.	$7) 12 \over 84 \\ -7 \\ 14 \\ -14 \\ 0 \\ 12$	Now for 14 ones, we said the table of 7 7 two's are 14, Subtracting 14 from 14, we got 0 left. Therefore, the quotient is 2 bundle and two loose matchsticks, or we got 1 tens and 2 units = 12

Multiplicaton and Division-II

Solve and write the dividend, divisor and quotient.

3)30	2)44	7)77	4)84				
3)45	2)48	2)68	3)87				
4)68	4)52	8)92	7)87				
Let us see $\frac{2}{3} \cdot 639$ $- \frac{6}{0}$	639 ÷ 3 = ? First we d 3 twos are In the quo Write 6 be	livide the hundreds e 6. otient we write 2 elow 6 and subtrac	s' digit. ct.				
$3) \begin{array}{c} 21 \\ 639 \\ -6 \\ 03 \\ -3 \\ 0 \end{array}$	Now, we So we wr Write 3 be	Now, we take down 3 of the ten's place, So we write 1 in the quotient Write 3 below 3 and subtract.					
$ \begin{array}{r} 213\\ 3 \overline{\smash{\big)}} 639\\ \underline{} - 6\\ 03\\ \underline{} -3\\ 09\\ \underline{} -9\\ 0\end{array} $	Even now So we tak 3 threes a Write 3 in Write a be Thus we g	we have 9 left wi te down 9 re 9 the quotient elow 9 and subtrac get 213 as the quoti	th us. et ient.				

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One day Sandhya's father bought 5 packets of colour pencils. He wanted to divide all of these pencils among Sandhya, Sakshi and Shashank.

Shashank said - "Father open the packets and distribute the pencils." Father opened one packet. It had 3 pencils.

Sakshi immediately said, "One packet has 3 pencils, so these five packets will have 15 pencils in total."

Father asked, "How did you find that out?"

Sakshi said, "That is very easy. I multiplied 3 by 5. 3 fives are 15."

 $3 \times 5 = 15$

Sandhya said, "Father, if we distribute 15 pencils among 3 of us, then each of us would get 5-5 pencils."

"How can you say this?" her father asked.

She explained, "There are totally 15 pencils and we are three of us who want them. 3 fives are fifteen. So we will divide 15 by 3. 3 fives are 15... we could divide five times. So, each of us would get 5 pencils."



Maths-3

Multiplicaton and Division-II

Sandhya a wrote it down as follows, and showed it to her father.

$$3)15$$

$$\underline{-15}$$

$$0$$

"Very nice child", said her father.

Shashank was quiet till then. He said, "Father, we can also say that out of 15 pencils if we give away 5-5 pencils, then the pencils would be distributed equally among three people." 3

	5)15
This is written in the form of division as	-15
	0

Father said, "Yes, my child, this is also obsolutely correct. All three of you have done the calculations accurately. Either you multiply 3 by 5 or 5 by 3, you get fifteen as the answer - both ways. Now, if we divide 15 by 3, then we will get 5 or if we divide 15 by 5 we will to get 3.

Shashank wrote these down as -

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3 \times 5 = 15

5 \times 3 = 15

15 \div 3 = 5

15 \div 5 = 3
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Now, some numbers are written below for you. You try to solve these.

1.	6 × 4	= 24	2.	$10 \times 5 =$	50
	24 ÷ 6	= 4		50 ÷ 10 =	
	24 ÷ 4	=		50 ÷ 5 =	
3.	8 × 3	=	4.	6 ×=	42
	24 ÷	= 8		÷ 7=	6
	24 ÷]= 3		42 ÷=	

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1.	35	•	5	=	7
		×	5	=	35

3.		×	6	=	48
	48	•		=	

2.	9	×	8	=	
	72	<u>•</u>		=	8

4.	5	×	=	45
	45	• •	=	

Solve the sums (orally)

- 1. There are 7 benches in a class. Three girls are sitting on each bench. Calculate how many girls in all are there in the class ?
- 2. There are 6 shelves in a cupboard in a library. 8 books are kept in each shelf. So how many books are there in all in that cupboard?
- 3. One box has 6 chocolates. If there are 7 such boxes, how many chocolates are there?
- 4. One jeep has 4 tyres. Calculate, how many tyres will 9 jeeps have?
- 5. Seven days make one week. So, how many days are there in 4 weeks?
- 6. Rekha buys 2 banans for 1 rupee. So how many banans would she be able to buy in 6 rupees?
- 7. We can buy 8 slate pencils in 1 rupee. So, how many pencils would we be able to buy in 3 rupees?
- 8. Six eggs can be kept in one crate. So, how many crates would be needed to keep 54 eggs?



- 9. One basket has 20 mangoes. If each child is given 4 mangoes, calculate how many children would get mangoes?
- 10. There are some cows kept in a barn. If we bend and see under the door, we can see 16 legs. Calculate, how many cows are there in the barn?
- 11. You can keep 8 Laddoos in a box. So, how many boxes are required to keep 48 Laddoos?



- 1. A matchbox has 45 matchsticks. How many matchsticks would be there in 5 such boxes?
- 2. There are 12 bananas in 1 dozen. So, how many bananas would be there in 9 dozens?
- 3. A khokho team has 9 players, How many players are there in 12 such teams?



- 4. A bunch of grapes has 69 grapes. How many grapes are there in 8 such bunches?
- 5. 1 meter has 100 centimeters. So, how many centimeters do 9 meters have?
- 6. One garland has 64 flowers. How many flowers would be required to make 7 such garlands?
- 7. 1 hour has 60 minutes. How many minutes do 6 hours have?
- 8. One week has 7 days. How many days are there in 52 weeks?
- 9. One acre farm gives a harvest of 35 sacks of grain. How many sacks of grain would be harvested from 8 acres of land?
- 10. There are 5 rows of students is a prayer hall. Each row has 25 students. How many students are there in all in the prayer hall?
- 11. One bus can carry 45 passengers. How many passengers can travel in 6 such buses?

Multiplicaton and Division-II



- 1. One marriage party has 64 people. If one jeep can carry 8 people, how many jeeps would be needed to carry all the 64 people?
- 2. Dayalu planted 96 saplings in four flower beds. How many saplings did he plant in each flowers bed ?
- 3. How many 10 rupee notes would you get in exchange for a 100 rupee note?
- 4. One tractor trolley has 54 sacks of grain. If 6 labourers helped to unload equal number of sacks, how many sacks did each labourer unload?
- 5. One packet has 60 buttons. If one shirt needs 5 buttons, Calculate, how many shirts can have buttons out of these 60 buttons?
- 6. Among how many children would 242 laddoos have to be distributed so that each child gets 2 laddoos?
- 7. Rajani read a 90-page book in 10 days. How many pages did she read in one day?
- 8. One field had 900 saplings planted in 9 rows. How many saplings will be planted in one row?
- 9. There are 98 lemons is a basket. They have to be distributed among 7 people. How many lemons would each person get?
- 10. A farmer wants to distribute Rs. 528 equally among four of his sons. How many rupees would each son get?

Look at the pictures carefully and complete the statement sums.



One container has 9 Laddoos. When 9 more Laddoos are added in the jar, how many Laddoos will be there in all? Now, you also make more such questions.



_ _ _ _



One cycle has two wheels.



Two balloons burst.



Four children are sitting on one mat.





Three more birds came and sat on the tree.













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Maths-3



Make statements sums for these:

10 + 2	Ten sparrows and two parrots are sitting on a tree.
	Write, how many birds are sitting on the tree in all.
21 — 7	= ?
6 × 5	= ?
27 ÷ 9	= ?
13 + 11	= ?
25 — 9	= ?
11 ÷ 3	= ?
6 ÷ 6	= ?
23 — 5	= ?
	* * *