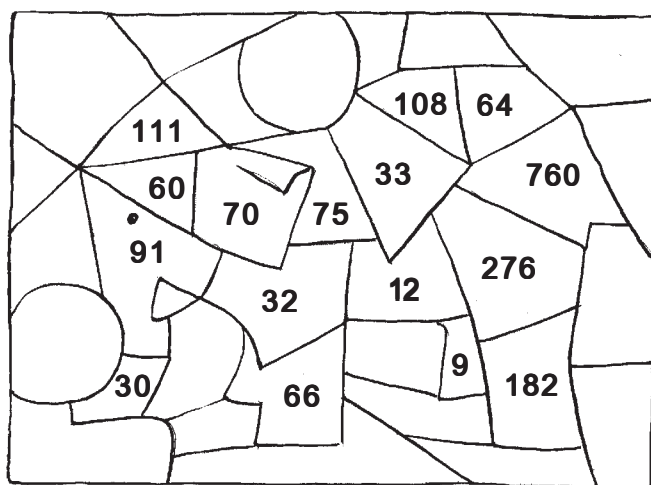# Unit 3

Multiplication and division

You have already done multiplication and division in previous classes-

Some similar questions (sums) are given below –

Answers of the questions are given in adjacent boxes.

Solve the questions. Colour the boxes which have the answers. When all the boxes will be coloured, you will get a figure.

1. $46 \times 6 =$ ....
2. $7 \times 13 =$ ....
3. $66 \div 2 =$ ....
4. $11 \times 6 =$ ....
5. $37 \times 3 =$ ....
6. $150 \div 5 =$ ....
7. $128 \div 4 =$ ....
8. $95 \times 8 =$ ....
9. $15 \times 5 =$ ....
10. $120 \div 2 =$ ....
11. $26 \times 7 =$ ....
12. $27 \times 4 =$ ....

13.   A box contains 7 balls. How many boxes are needed for 63 balls?
14.   Cost of 1 kg sugar is Rs 14/- Rajiv bought 5 kg of sugar. How much money should he pay to the shopkeeper?.
15.   There are 16 guava trees, 16 orange trees, 16 papaya trees and 16 mango trees in a fruit garden (orchard). What is the total number of trees in the fruit garden(orchard)?
16.   There are 72 oranges. Distribute them among 6 persons. How many oranges will each person get?

You have already learnt in previons classes that multiplication means add again and again:

1 Box contain 18 chalksticks. How many chalksticks will be there in such 3 boxes?

$18 + 18 + 18 = 54$ i.e. $18 \times 3 = 54$

You already know $6 \times 5 = 5 \times 6$

Find out the product of two numbers. You will see if you change the position of the number, the product will be same i.e $3 \times 4 = 4 \times 3$

Tell everyone if you find any two numbers for which this is not true.

Now solve the following problems quickly:-

1.   8 × 8 = 64
2.   12 × 9 = 108
3.   19 × 10 = 190
4.   20 × 5 = 100
5.   29 × 4 = 116
6.   26 × 8 = 208

8 × 9 = ...
9 × 12 = ...
20 × 10 = ...
20 × 4 = ...
30 × 4 = ...
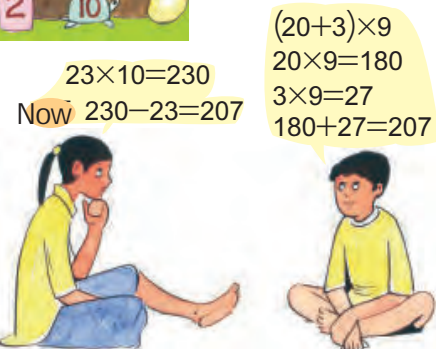26 × 7 = ...

Find the missing number:

Different methods of multiplication

There are 23 chairs in a row. How many chairs will be there in 9 such rows? Meena and Tinu solved this in different ways.

In how many more ways can you solve this problem ?

23×10=230
Now 230−23=207

(20+3)×9
20×9=180
3×9=27
180+27=207

Some more problem sums

1.   In a garden there are 7 rows. In each row 15 rose plants are planted. How many total rose plants are there?
2.   There are 25 oranges in a basket. How many oranges will come in such 5 baskets ?
3.   A tailor stiches 12 shirts in one day. How many shirts does he stitch in 4 days?

You should try some more such problems and solve it in different ways. Try at least 4-5 processes for each problem.

How to solve?

In previous class you did sums like 34 × 7, 126 × 2

Now we will see 32 × 16

```
      1
     32
   ×  16
   ─────────
    192  (32 × 6)
    320  (32 × 10)
   ─────────
    512
```

Whenever you multiply a number with some two digits number, first you multiply ones number.

In this number ones digit is 6 therefore 32 × 6 = 192

Now the second digit, 1 tens i.e. 10 is multiplied by 32

32 × 10 = 320 | Now you add both (192+320). The answer will be 512.

There is one more process for multiplication

$32 \times 16 = ?$ We can write it $32 = 30 + 2$ & $16 = 10 + 6$

$\times$	30	2
10	30×10 300	2×10 20
6	30×6 180	2×6 12

Now add all the four numbers.

$300 + 180 + 20 + 12 = ———–$

Is the answer the same as it was in previous process?

Now solve the sums given below in both the processes -

1. 45×23

2. 95×89

3. 67×72

4. 57×69

5. 30×29

6. 15×49

Observe and understand:

$346 \times 25 = ?$ other process to solve it.

$346 = 300 + 40 + 6$ & $25 = 20 + 5$

```
    346
 ×   25
   1730  (346 × 5 )
 + 6920  (346 × 20 )
   8650
```

$\times$	300	40	6
20	300×20 6000	40×20 800	6×20 120
5	300×5 1500	40×5 200	6×5 30

Thus $346 \times 25 = 6000 + 1500 + 800 + 200 + 120 + 30$

Or $346 \times 25 = 8650$

Solve these:

1. 132×95

2. 465×38

3. 278×47

4. 921×66

5. 760×19
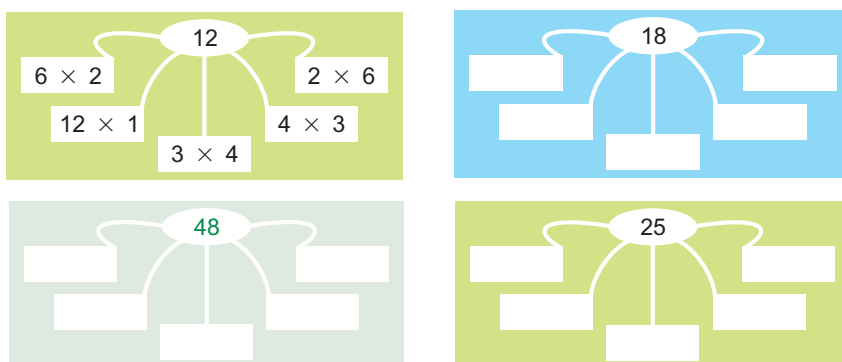
6. 803×45

Problem Sums:

• There are 65 students in a school. All deposited Rs 15 for picnic. What is the total amount deposited?

• Radha is in need of 14 copies. If each copy costs Rs 16. How much money does Radha require?

• In a small box 12 ice cream cups can be kept. In a big box 15 times more icecream cups can be kept. Answer how many icecreams can be kept in big box?

• A saree has 25 different designs. Every design has 16 colours. A shopkeeper wants to purchase one piece of each type of saree for his shop. How many sarees the

shopkeeper has to purchase for shop?

•   One chair costs Rs. 436. What will be the cost of 35 chairs?

•   Ramesh went to the market with Rs. 3000. He purchased 12 sets of books at the rate of Rs 175. How much money is left with him?

Form question from the given answer

Game of tables (Tables game)

If you know the tables from one to ten then you can form tables beyond ten:

Let us develop table of 13:-

Table of 10	10	20	30	40	50	60	70	80	90	100
Table of 3	3	6	9	12	15	18	21	24	27	30
Table of 13	13	26	39	52	65	78	91	104	117	130

To form table of 13 first we wrote table of 10 and then table of 3. then added them and we get the table of 13, 7+6 =13 what will happen if we add tables of 7 and 6 ?

Let us do and observe -

Table of 7	7	14	21	28	35	42	49	56	63	70
Table of 6	6	12	18	24	30	36	42	48	54	60
Table of 13	13	....	....	....	....	....	....	....	....	....

Do you get the table of 13? Can you develop the table of 13 by using other numbers? Which are those numbers?

1. ...., ... 2. ...., ... 3. ...., ... 4. ...., ...

You have already formed table of 13 In the same way develop tables of 11, 12, 14, ...20.

DIVISION

When we have to distribute the things equally we divide it. You have learnt in class 3 that we do division by subtracting the same number again and again or by telling the tables.

Ex. 15 apples are distributed equally among 5 children. Tell how many will each child get?

$$5\overline{)15}$$
$$3$$
$$15$$

$$5\overline{)15}^{1+1+1}$$
$$-5$$
$$10$$
$$-5$$
$$5$$
$$-5$$
$$0$$

In this way you have seen that by both the processes of division 5 children got 3 apples.

Solve:

1. 51 ÷ 3 = 17

2. 40 ÷ 4 = ——————

3. 150 ÷ 5 = ——————

4. 63 ÷ 7 = ——————

$$3\overline{)51}^{17}$$
$$-3$$
$$21$$
$$21$$
$$0$$

5. How many times can 5 be subtracted from 45?

6. If 108 things are distributed in 9 groups then how many groups will be formed?

7. In a jeep only 8 people can sit. Then how many times will the jeep be required to take 48 people to the market.

8. One gardener has 60 flowers. If he makes a garland of 12 flowers then how many garlands would be made?

9. One box can contain 10 books. Then how many boxes would be required to keep 100 books.

Remainder

Can 13 sweets be divided equally among 4 children.

$$4\overline{)13}^{3}$$
$$12$$
$$1$$

You know:
Here 4 divisor
13 dividend
and 3 quotient

This means that when 13 sweets were distributed equally among 4 children then each child got 3 sweets and one sweet was left. Here remainder = 1.

$$\boxed{\text{Remainder} = 1}$$

Now solve the questions given below.

1. $25 \div 4$
2. $39 \div 6$
3. $53 \div 8$
4. $7\overline{)529}$
5. $9\overline{)353}$
6. $3\overline{)654}$
7. $84 \div 4$
8. $49 \div 7$
9. $97 \div 6$

Write the divisor, dividend, quotient and remainder separately. Write the questions, which have a remainder of '0' in your copy and make a problem sum of these question. Two problem sums are given here –

1. $25 \div 4$

    The teacher took out 25 books and distributed them equally among 4 children. Tell how many books each child would get and how many books would be left.

2. $3\overline{)654}$

    The cost of 3 chairs is Rs 654. Then what is the cost of one chair?

Make questions and solve

$484 \div 4$

The cost of 4 sarees ....

....

Different ways of division

The teacher gave questions of division to the students and asked them to solve it in their copies. Look at the ways in which the students solved the questions.

$$284 = 200+80+4, \quad 284 \div 4 = \begin{cases} 200 \div 4 = 50 \\ 80 \div 4 = 20 \\ 4 \div 4 = \underline{1} \\ \underline{71} \end{cases}$$

Are all the solutions correct? Discuss. Solve the questions of division in different way and tell which one you like and why?

Naseem and Sushila were talking. Sushila asked her to tell quickly what would be the answer on dividing 1018 by 11? Naseem told that the answer would be approximately 100.

How can we guess the answers of these questions?

Lets observe:

Naseem said 1018 is near to 1000 and 11 is near to 10.

Therefore we can divide 1000 by 10, $(1000 \div 10)$

and the answer would be near to 100.

Now guess the answers of the followings questions and ask others.

1. What would be the answer on dividing 97 by 31?
2. What would be the answer on dividing 932 by 9?
3. How many heaps of 8 guavas can be made from 118 guavas?

How to solve

You have already done division in previous classes. Can you tell $372 \div 12 = ?$

$$
\begin{array}{r}
31 \\
12\overline{)372} \\
-36 \quad (12\times3=36)\\
\overline{12} \\
\underline{12} \quad (12\times1)\\
\overline{00}
\end{array}
$$

Here 372 is to be divided by 12. You can not distribute 3 hundreds into 12 parts. So convert 3 hundreds into tens. In this way 30 tens +7 Tens makes 37 tens.

What will be the divisor of 37 by 12 Let us read the table of 12

$12 \times 1 = 12$
$12 \times 2 = 24$
$12 \times 3 = 36$
$12 \times 4 = 48$

48, is greater than 37. So we read table of 12 only three times and subtrat 36 from 37. 1 tens will be remainder which we convert into ones. In this way $10+2 = 12$ Ones Now dividing 12 by 12 is equal to 1.

This can also be done in this way:

$$
\begin{array}{r}
20+5+6 \\
12\overline{)\,300+72} \\
-\underline{240} \quad (12\times20)\\
60 \\
-\underline{60} \quad (12\times5)\\
\overline{00}\;\;72 \\
-72\,(12\times6)\\
-00
\end{array}
$$

$20+5+6 = 31$

Now solve these questions:

1. One rope is 132 m long. If we cut the rope into pieces of 12 meter each. How many pieces can be cut?

2. One box contains 17 bottles then how many bottles will be there in 12 boxes?

3. There are 252 apples in a basket. How many apples each person will get if these apples are distributed among 18 people?

4. A bag contains 55 numbers of 1Rupee coins. How many heaps can be made by these coins if each heap has five rupees.

5. If one has to pay Rs. 1650 for 3 fans. What is the cost of one fan?

6. 12 students of class IV got Rs. 900 as scholorship. Tell how much rupees each student got?

You also form these type of questions. Solve it and show it to your friends and teachers.

There are some numbers and signs kept in boxes given below. Ravi has arranged them properly. But Kamla has disturbed them. Can you re-arrange them?

=	10	÷	2	5
45	÷	3	=	15
3	×	12	4	=
3	3	9	÷	=
20	÷	5	=	4

10 ÷ 2 = 5

State which solutions are right and which solution are wrong. Find the mistake and correct the wrong solution.

1.
$$\begin{array}{r} 10 \\ 7\overline{)81} \\ -7 \\ \hline 1 \end{array}$$

2.
$$\begin{array}{r} 33 \\ 3\overline{)99} \\ 9 \\ \hline 09 \\ -9 \\ \hline 0 \end{array}$$

3.
$$\begin{array}{r} 114 \\ 4\overline{)96} \\ -4 \\ \hline 5 \\ -4 \\ \hline 16 \\ -16 \\ \hline 00 \end{array}$$

4.
$$\begin{array}{r} 1 \\ 6{\overline{)}\,90} \\ -6 \\ \hline 3 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 07 \\ 8{\overline{)}56} \\ 0 \\ \hline 56 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 12 \\ 4{\overline{)}\,58} \\ -4 \\ \hline 8 \\ -8 \\ \hline 0 \\ \hline \end{array}$$

You have already done problem sums. Now you form problem sums from the facts given below.

1. $125 \div 5$

2. 53×4

3. $15 + 15 + 15$

4. $763 - 365$

5. $256 \div 12$

6. $105 \div 15$

7. 108×13

8. $256 + 200 + 300$

9. 63×9

You also make such type of sums. Do it yourself and also ask your friends to do it.