Multiplication

Let us say

G4K9W1
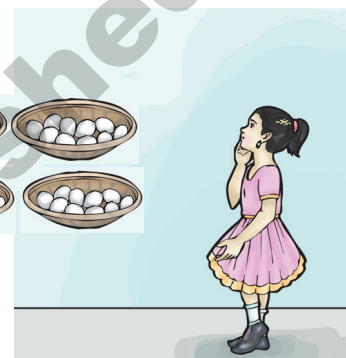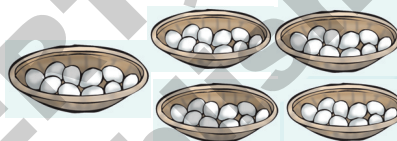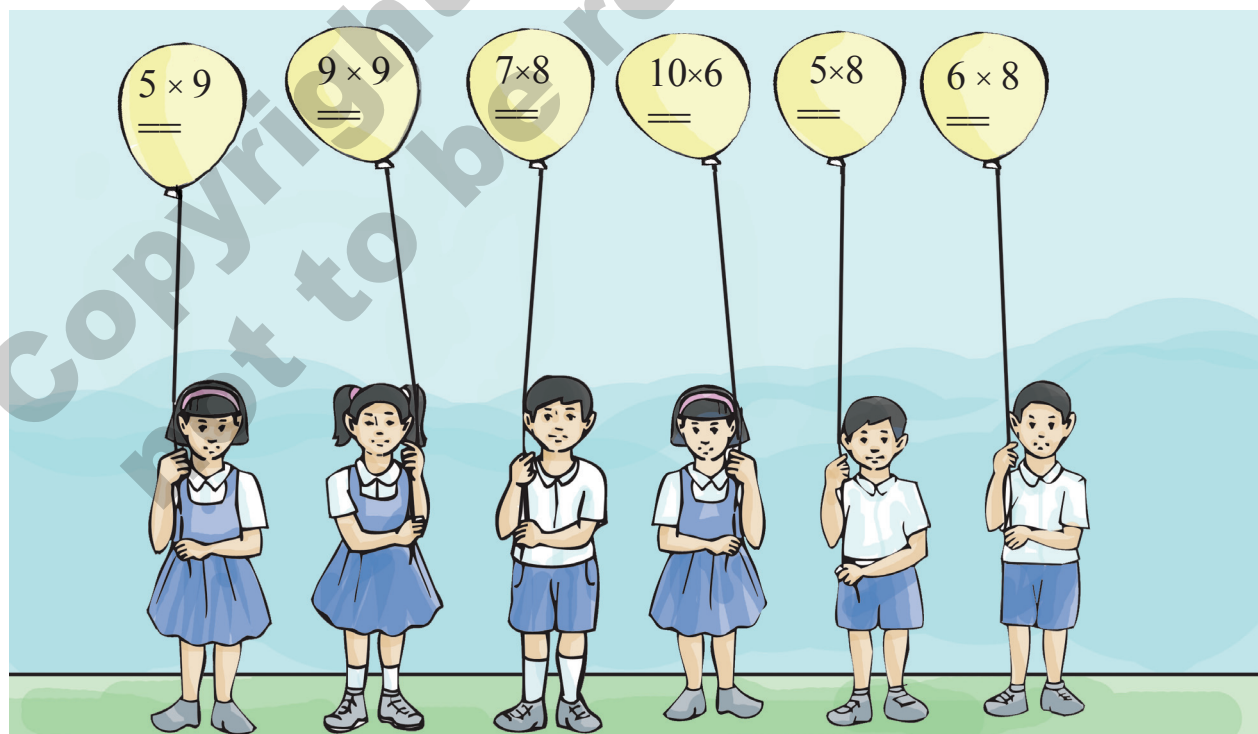
In the branch there were
six flowers.
Each flower has 5 petals
How many total petals are there
Think and tell.

There are 5 baskets with 10 eggs in each
Count and say total number of eggs.

Remember the tables and multiply

$5 \times 9 =$

$9 \times 9 =$

$7 \times 8 =$

$10 \times 6 =$

$5 \times 8 =$

$6 \times 8 =$

Multiply and fill in the boxes

45 =

9   2   7

×   ×   ×

5   9   8

[ ] = 8 × 6 ● 3 × 6 = [ ]

4   7   2

×   ×   ×

3   4   5

=   =   =

[ ]   [ ]   [ ]
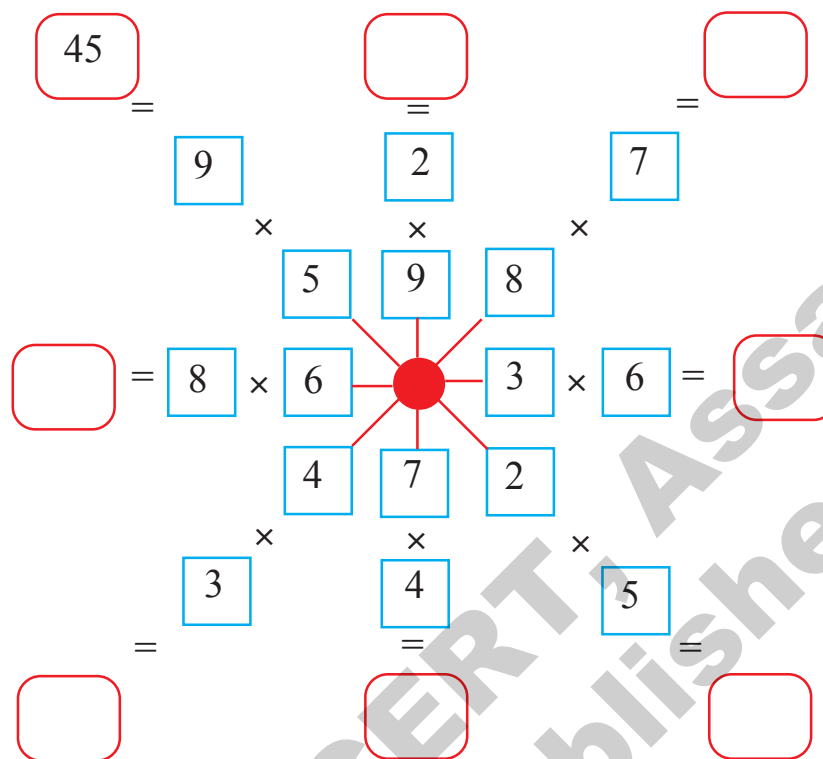
Let us solve

There are 12 mangoes in a basket. How many mangoes will be in 4 such baskets?

$12 \times 4 = 48$

Let us see how will you do

```
Tens Ones
  1   2
    ↖ ↑
×     4
---------
      8
  4   0
---------
  4   8
```

First step $= 2 \times 4 = 8$

Second step = $1 \times 4 = 40$

Third step $= 8 + 40 = 48$

There are 48 mangoes in 4 baskets

62

You can also do in this way

Tens Ones

$$\begin{array}{cc} 1 & 2 \\ \times & 4 \\ \hline 4 & 8 \end{array}$$
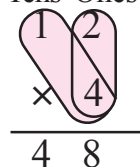
First step : Multiply 2 by 4 and write it in ones place

Second step : Multiply 1 ten by 4 and write in tens place

First step : Multiply with ones

Second step : Multiply with tens

Do by yourself

$$\begin{array}{r} 2\ 2 \\ \times\ 4 \\ \hline 8\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 2\ 3 \\ \times\ 2 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3\ 2 \\ \times\ 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5\ 2 \\ \times\ 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6\ 3 \\ \times\ 3 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 1\ 1 \\ \times\ 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 1\ 3 \\ \times\ 3 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3\ 1 \\ \times\ 6 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6\ 2 \\ \times\ 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5\ 2 \\ \times\ 7 \\ \hline \\ \hline \end{array}$$

Let us understand (Multiplication with Zero)

Let us see how many laddoos are there in the four dishes

No laddoo is there in any of the dish

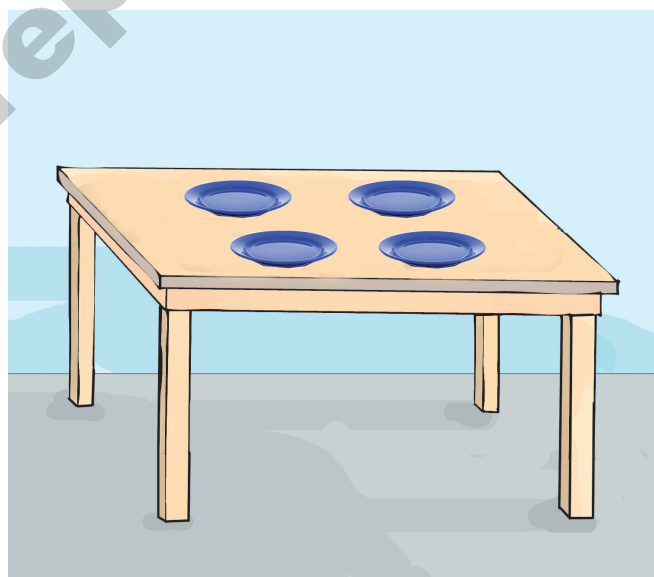Therefore, $0+0+0+0 = 0 \times 4 = 0$

This means there is no single laddoo

Lets write

$0 \times 2 = 0 + 0 = 0$

$0 \times 3 = 0 + 0 + 0 = 0$

$0 \times 5 = 0 + 0 + 0 + 0 + 0 = 0$

Let us know : Multiplication of '0' by any number is '0'. Multiplication of any number by '0' is '0'.

Let us multiply

$0 \times 9 =$ ☐ $0 \times 13 =$ ☐ $0 \times 14 =$ ☐ $0 \times 10 =$ ☐

$10 \times 0 =$ ☐ $6 \times 0 =$ ☐ $20 \times 0 =$ ☐ $7 \times 0 =$ ☐

Let us solve

How many bananas are there in 5 dozens of banana?

1 dozen = 12

Let us see how we should solve

$$
\begin{array}{r}
1\,2 \\
\times\ 5 \\
\hline
\end{array}
$$

First step (5×2) 10

Second step (5×10) 50

Third step $(10 + 50)$ 60

Do by yourself

$$
\begin{array}{r}
1\,3 \\
\times\ 4 \\
\hline
\\
\hline
\end{array}
\qquad
\begin{array}{r}
1\,4 \\
\times\ 3 \\
\hline
\\
\hline
\end{array}
\qquad
\begin{array}{r}
1\,6 \\
\times\ 2 \\
\hline
\\
\hline
\end{array}
\qquad
\begin{array}{r}
1\,5 \\
\times\ 5 \\
\hline
\\
\hline
\end{array}
$$

An alternative way of solution You can also do in this way

Multiplication with ones

Tens Ones

$$
\begin{array}{r}
\textcircled{1}\ \ 2 \\
\times\ 5 \to \textcircled{10} \\
\hline
\end{array}
$$

Place 0 of 10 in the ones place and 1 at ten's place

Tens Ones

$$
\begin{array}{r}
\textcircled{1}\ \ 2 \\
\times\ 5 \\
\hline
0 \\
\end{array}
$$

Multiply the digit at tens place by 5 and add it to carry-over 1

Tens Ones

$$
\begin{array}{r}
\textcircled{1} \\
1\ \ 2 \\
\times\ 5 \\
\hline
6\ \ 0 \\
\end{array}
$$

$5 \times 1 + 1$

Do by ourself

2 6	2 3	2 5	2 7
× 3	× 4	× 5	× 7

3 2	4 4	5 7	6 8
× 6	× 8	× 4	× 9

Sports meet

30 students from Sibsagar came by bus to participate in the sports meet organised at Nagaon district. T hey took parathas in a hotel at Jakhalabandha. Each of them spent Rs 32 for the food. What was the total expenditure on food?

Solution :

Total number of participants = 30

Expenditure on food intems for 1 participant = 32 rupees

Therefore, total expenditure on food items $= 30 \times 32$ rupees

$= 960$ rupees

Let us learn

$30 \times 32 = ?$

$$
\begin{array}{r}
3\,0 \\
\times\ 3\,2 \\
\hline
\end{array}
$$

(First step) $30 \times 2 \rightarrow 6\,0$
(Second step) $30 \times 3 \rightarrow 9\,0$

$$\overline{\qquad 9\,6\,0}$$

First step→ $30 \times 2 = (3 \text{ tens} + 0 \text{ ones}) \times 2$

$= (30 + 0) \times 2$

$= 30 \times 2 + 0 \times 2$

$= 60 + 0 = 60$

Second step→ $30 \times 30 = (3 \text{ tens} + 0 \text{ ones}) \times 30$

$= (30 + 0) \times 30$

$= 30 \times 30 + 0 \times 30$

$= 900 + 0 = 900$

Third step → $=$ First step + second step

$= 60 + 900 = 960$

65

Alternative solution - you can do this way also

$$
\begin{array}{r}
3\ 2 \\
\times\ 3\ 0 \\
\hline
\end{array}
$$

(First step) $32 \times 0 \rightarrow$ 0
(Second step) $32 \times 3 \rightarrow$ 9 6

$$
\overline{\quad\quad\quad 9\ 6\ 0}
$$

Alternative solution - You can do this way also

$$
\begin{array}{r}
3\ 0 \\
\times 3\ 2 \\
\hline
\end{array}
$$

$30 \times 2 \rightarrow$ 6 0   Fist step
$30 \times 30 \rightarrow$ 9 0 0   Second step

$$
\overline{\qquad 9\ 6\ 0}
$$

Here $32 = 30 + 2$

Therefore, first of all, we will

$30 \times (30 + 2)$

$= 30 \times 30 \;+\; 30 \times 2$

First line of multiplication
Second line of multiplication

$= 900 + 60$
$= 960$

Do by yourself

$\begin{array}{r}1\ 2 \\ \times 1\ 3 \\ \hline 3\ 6 \\ 1\ 2 \\ \hline 1\ 5\ 6\end{array}$	$\begin{array}{r}1\ 4 \\ \times 1\ 4 \\ \hline \end{array}$	$\begin{array}{r}1\ 5 \\ \times 1\ 5 \\ \hline \end{array}$	$\begin{array}{r}1\ 7 \\ \times 1\ 7 \\ \hline \end{array}$
$\begin{array}{r}1\ 9 \\ \times 1\ 9 \\ \hline \end{array}$	$\begin{array}{r}2\ 2 \\ \times 1\ 2 \\ \hline \end{array}$	$\begin{array}{r}2\ 5 \\ \times 2\ 2 \\ \hline \end{array}$	$\begin{array}{r}2\ 8 \\ \times 1\ 1 \\ \hline \end{array}$

3 3 × 1 2 ___ ___ ___	3 5 × 1 3 ___ ___ ___	3 9 × 1 2 ___ ___ ___	2 3 × 1 4 ___ ___ ___
1 8 × 4 5 ___ ___ ___	2 6 × 1 3 ___ ___ ___	1 9 × 2 5 ___ ___ ___	8 0 × 1 0 ___ ___ ___
6 3 × 1 3 ___ ___ ___	3 6 × 2 3 ___ ___ ___	5 2 × 1 4 ___ ___ ___	4 9 × 1 8 ___ ___ ___
2 9 × 1 1 ___ ___ ___	1 7 × 2 5 ___ ___ ___	3 8 × 2 2 ___ ___ ___	1 5 × 3 9 ___ ___ ___
6 5 × 1 3 ___ ___ ___	8 5 × 1 1 ___ ___ ___	7 5 × 1 2 ___ ___ ___	4 0 × 2 1 ___ ___ ___

Hormohon's sugarcane field

Hormohon sold 112 numbers of sugarcane everyday from his sugarcane field. How many sugarcanes he sold in 3 days?

Solution :

Number of sugarcane sold in 1 day = 112

Number of sugarcane sold in 3 days = 112×3

= 336

Let us learn

$112 \times 3 = ?$

Hundred Tens Ones

$$
\begin{array}{r}
1\ 1\ 2 \\
\times\ 3 \\
\hline
6 \\
3\ 0 \\
3\ 0\ 0 \\
\hline
3\ 3\ 6 \\
\end{array}
$$

6 → 2 ones × 3 = 6 ones = 6

3 0 → 1 tens ×3 = 3 tens = 30

3 0 0 → 1 hundred × 3 = 3 hundred = 300

3 3 6 → 6 + 30 + 300 = 336

You can also do in this way

First step	Second step	Third step
$\begin{array}{r} 1\ 1\ 2 \\ \times\ 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 1\ 1\ 2 \\ \times\ 3 \\ \hline 3\ 6 \end{array}$	$\begin{array}{r} 1\ 1\ 2 \\ \times\ 3 \\ \hline 3\ 3\ 6 \end{array}$

Multiply

(a) $\begin{array}{r} 2\ 2\ 2 \\ \times\ 2 \\ \hline \end{array}$	(b) $\begin{array}{r} 1\ 2\ 2 \\ \times\ 2 \\ \hline \end{array}$	(c) $\begin{array}{r} 1\ 2\ 3 \\ \times\ 3 \\ \hline \end{array}$	(d) $\begin{array}{r} 2\ 4\ 4 \\ \times\ 2 \\ \hline \end{array}$
(e) $\begin{array}{r} 2\ 4\ 2 \\ \times\ 3 \\ \hline \end{array}$	(f) $\begin{array}{r} 1\ 2\ 4 \\ \times\ 2 \\ \hline \end{array}$	(g) $\begin{array}{r} 1\ 2\ 3 \\ \times\ 4 \\ \hline \end{array}$	(h) $\begin{array}{r} 2\ 4\ 4 \\ \times\ 4 \\ \hline \end{array}$

Latumoni's Betelnut Garden

Latumoni and others plucked betelnuts from their garden to sell in the market. They kept the betelnuts in 12 baskets with 35 betulnut in each. How many betelnuts did they keep in the baskets altogether.

$$\begin{array}{r} 3\,5 \\ \times\,1\,2 \\ \hline \end{array}$$

35 means 30 and 5 = 30 + 5

12 means 10 and 2 = 10 + 2

	30	5
10	30 × 10 300	5 × 10 50
2	30 × 2 60	5 × 2 10

300 + 60 = 360

 50 + 10 = 60

360 + 60 = 420

Therefore, 35 × 12 = 420

Let us multiply by the method explained above

(a) 35 × 14

(b) 67 × 15

(c) 52 × 15

(d) 44 × 16

(e) 75 × 13

(f) 12 × 23

(g) 21 × 13

(h) 37 × 11

(i) 49 × 12

Let us fill in the blanks

7 × 5 = 35

9 × .... = 54

8 × .... = 64

.... × 8 = 48

10 × .... = 70

6 × 9 = ...

5 × .... = 30

.... × 7 = 42

8 × .... = 80

Let us solve the following problems

(a) Arindom's father sold 1 dozen of banana for Rs 55. How much money will he get for selling 7 dozen of banana?

(b) Selim sells 160 newspapers daily. How many papers will he sell in 6 days?

(c) Sonmoni went with his father to the store to buy shoes. He bought a pair of shoe for 300 rupees. How much would he pay for two pair of such shoes?

(d) If 1 kilogram of Rohu fish costs 250 rupees what is the cost of 3 kilogram of fishes?

(e) If the cost of 1 umbrella is 225 rupees, what is the cost of 4 umbrellas?

(f) A bus travels at 60 kilomer per hour speed for 5 hours, at 70 kilometer per hour for 2 hours and at 50 kilometer per hour for 3 hours continuously. How long the bus has travelled and what is the total distance travelled by the bus?

The bus travelled .... hour.
Total distance travelled by the bus is ....kilometer

(g) A book is of 196 pages what is the total number of pages of such 5 books?

(h) If 1 kilogram mangoes cost 90 rupees and 1 kilogram apples cost 120 rupees, what is the cost of 25 kilogram of mangoes and 20 kilogram apples?