Government of Tamilnadu

STANDARD THREE
TERM II
Volume 2

MATHEMATICS  SCIENCE  SOCIAL SCIENCE

NOT FOR SALE

Untouchability is Inhuman and a Crime

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### SCIENCE

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</tr>
</tbody>
</table>
1. Identify the number of items in each group.

A group of 2 hens

A group of __ flowers

A group of __ books

These are the groups with different number of items.

**Activity 1**

List some group of items in different numbers.

**Example**

A group of 10 Mangoes

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Identify the groups with equal number of items.

The groups [ ] , [ ] and [ ] have equal number of items.

Example

List some pair of groups with equal number of items.

A group of 3 locks ; A group of 3 keys
A group of 5 pencils ; A group of 5 erasers
Fill in the following

1.  

2.  

When each group has the same number of items, to find the total number of items, we can use another method called **Multiplication**.
Knowledge Bank

Multiplication is nothing but repeated addition.

‘\times’ is the symbol used for multiplication

Multiplication fact

5 groups of 3 pigeons each is 15.
This can be written as \(5 \times 3 = 15\)

Number of pigeons in each group
5 \(\times\) 3 = 15
Number of groups
Total number of pigeons

Note that we used multiplication instead of repeated addition

5
Example

Number of groups = 4
Number of fish in each group = 3
Number of fish in all = 12
Addition fact = 3+3+3+3 = 12
Multiplication fact = 4 \times 3 = 12

Fill in:

(1)

Number of groups =
Number of balls in each group =
Number of balls in all =
Addition fact =
Multiplication fact =
Number of groups
Number of elephants in each group
Number of elephants in all
Addition fact
Multiplication fact

(3) Rewrite the following multiplication facts into repeated addition.

1) \[ 6 \times 3 = 3 + 3 + 3 + 3 + 3 + 3 \]
2) \[ 4 \times 5 = + + + + \]
3) \[ 7 \times 4 = + + + + + + \]
4) \[ 4 \times 2 = + + + \]
5) \[ 2 \times 10 = + \]
(4) Rewrite the following into multiplication facts.

1) \[ 6 + 6 + 6 + 6 + 6 = 5 \times 6 \]

2) \[ 9 + 9 + 9 + 9 = 4 \times \]

3) \[ 8 + 8 + 8 = \]

### Construction of multiplication tables

<table>
<thead>
<tr>
<th>One box of 2 stars</th>
<th>Addition facts</th>
<th>Multiplication facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>⭐⭐</td>
<td>2</td>
<td>1 \times 2 = 2</td>
</tr>
<tr>
<td>⭐⭐⭐</td>
<td>2+2</td>
<td>2 \times 2 = 4</td>
</tr>
<tr>
<td>⭐⭐⭐⭐</td>
<td>2+2+2</td>
<td>3 \times 2 = 6</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐</td>
<td>2+2+2+2</td>
<td>4 \times 2 = 8</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐⭐</td>
<td>2+2+2+2+2</td>
<td>5 \times 2 = 10</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐⭐⭐</td>
<td>2+2+2+2+2+2</td>
<td>6 \times 2 = 12</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐⭐⭐⭐</td>
<td>2+2+2+2+2+2+2</td>
<td>7 \times 2 = 14</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
<td>2+2+2+2+2+2+2+2</td>
<td>8 \times 2 = 16</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
<td>2+2+2+2+2+2+2+2+2</td>
<td>9 \times 2 = 18</td>
</tr>
<tr>
<td>⭐⭐⭐⭐⭐⭐⭐⭐⭐⭐⭐</td>
<td>2+2+2+2+2+2+2+2+2+2</td>
<td>10 \times 2 = 20</td>
</tr>
</tbody>
</table>
Shall we say multiples of 2?

Multiply by 2:

<table>
<thead>
<tr>
<th>X</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fill in:

a) 8 \times 2 = 

b) 7 \times 2 = 

c) 9 \times 2 = 

d) 6 \times 2 = 

e) 10 \times 2 = 

f) 5 \times 2 =
Puzzle

If you add or multiply me by myself the result will be the same. Who am I?

Multiplication table 3

<table>
<thead>
<tr>
<th>One group of 3 persons</th>
<th>Addition facts</th>
<th>Multiplication facts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>1 X 3 = 3</td>
</tr>
<tr>
<td></td>
<td>3+3</td>
<td>2 X 3 = 6</td>
</tr>
<tr>
<td></td>
<td>3+3+3</td>
<td>3 X 3 = 9</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3</td>
<td>4 X 3 = 12</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3+3</td>
<td>5 X 3 = 15</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3+3+3</td>
<td>6 X 3 = 18</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3+3+3+3</td>
<td>7 X 3 = 21</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3+3+3+3+3</td>
<td>8 X 3 = 24</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3+3+3+3+3+3</td>
<td>9 X 3 = 27</td>
</tr>
<tr>
<td></td>
<td>3+3+3+3+3+3+3+3+3+3</td>
<td>10 X 3 = 30</td>
</tr>
</tbody>
</table>

Shall we say multiples of 3?

I like to jump by 3!

Using the table, practise it

<table>
<thead>
<tr>
<th>X</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>12</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exercise 4

1. Fill in:

\[3 \times 3 = \square\]

2. Fill in:

\[4 \times 3 = \square\]

3. Complete the Table.

<table>
<thead>
<tr>
<th>X</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

Puzzle!

1. \[\square \times \square = 6\]

\[\square \times \square = 9\]

\[\square \times \square = 4\]

Find out the number in \[\square\] and \[\square\]
Place the number in the boxes such that the product of the diagonal numbers should be 12.

### Multiplication table of 4

<table>
<thead>
<tr>
<th>One chair of 4 legs</th>
<th>Addition facts</th>
<th>Multiplication facts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Chair" /></td>
<td>4</td>
<td>1 \times 4 = 4</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4</td>
<td>2 \times 4 = 8</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4</td>
<td>3 \times 4 = 12</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4</td>
<td>4 \times 4 = 16</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4+4</td>
<td>5 \times 4 = 20</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4+4+4</td>
<td>6 \times 4 = 24</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4+4+4+4</td>
<td>7 \times 4 = 28</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4+4+4+4+4</td>
<td>8 \times 4 = 32</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4+4+4+4+4+4</td>
<td>9 \times 4 = 36</td>
</tr>
<tr>
<td><img src="image" alt="Chairs" /></td>
<td>4+4+4+4+4+4+4+4+4+4</td>
<td>10 \times 4 = 40</td>
</tr>
</tbody>
</table>
Using the table, practise it

<table>
<thead>
<tr>
<th>X</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACTIVITY 3

Draw a number line and mark only first 5 multiples of 4 on it.

Exercise 5

1. A flower pot contains 4 flowers. How many flowers are there in 6 such flower pots?

\[
\begin{array}{ccc}
\text{X} & \text{=} & \text{=}
\end{array}
\]

2. Fill in:

\[
\begin{array}{ccc}
2 \times & = & 8 \\
4 \times 4 & = & \text{=}
\end{array}
\]

\[
\begin{array}{ccc}
8 \times 4 & = & \text{=}
\end{array}
\]

\[
\begin{array}{ccc}
\times 4 & = & 40
\end{array}
\]

\[
\begin{array}{ccc}
\times & = & 20
\end{array}
\]

\[
\begin{array}{ccc}
7 \times & = & 28
\end{array}
\]

\[
\begin{array}{ccc}
3 \times & = & 12
\end{array}
\]

\[
\begin{array}{ccc}
9 \times 4 & = & \text{=}
\end{array}
\]

13
3. Complete the table.

<table>
<thead>
<tr>
<th>X</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>18</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

4. Fill the circles.

- One flower of 5 petals
- Addition facts
- Multiplication facts

<table>
<thead>
<tr>
<th>One flower of 5 petals</th>
<th>Addition facts</th>
<th>Multiplication facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌸</td>
<td>5</td>
<td>1 x 5 = 5</td>
</tr>
<tr>
<td>🌸руш</td>
<td>5+5</td>
<td>2 x 5 = 10</td>
</tr>
<tr>
<td>🌸🌸</td>
<td>5+5+5</td>
<td>3 x 5 = 15</td>
</tr>
<tr>
<td>🌸🌸🌸</td>
<td>5+5+5+5</td>
<td>4 x 5 = 20</td>
</tr>
<tr>
<td>🌸🌸🌸🌸</td>
<td>5+5+5+5+5</td>
<td>5 x 5 = 25</td>
</tr>
<tr>
<td>🌸🌸🌸🌸 Sakura</td>
<td>5+5+5+5+5+5</td>
<td>6 x 5 = 30</td>
</tr>
<tr>
<td>🌸🌸🌸🌸🌸</td>
<td>5+5+5+5+5+5+5</td>
<td>7 x 5 = 35</td>
</tr>
<tr>
<td>🌸🌸🌸🌸🌸 Sakura</td>
<td>5+5+5+5+5+5+5</td>
<td>8 x 5 = 40</td>
</tr>
<tr>
<td>🌸🌸🌸🌸🌸 Sakura</td>
<td>5+5+5+5+5+5+5</td>
<td>9 x 5 = 45</td>
</tr>
<tr>
<td>🌸🌸🌸🌸🌸 Sakura</td>
<td>5+5+5+5+5+5+5+5+5</td>
<td>10 x 5 = 50</td>
</tr>
</tbody>
</table>
15

Draw a number line and mark only first 5 multiples of 5 on it.

<table>
<thead>
<tr>
<th>X</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td>10</td>
<td></td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>

The units place in the product is either 0 or 5

ACTIVITY 4

Exercise 6

1. Complete the table.

<table>
<thead>
<tr>
<th>X</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Fill in the boxes.

3 X □ = 15
□ X 5 = 45
8 X □ = 40
□ X □ = 25
□ X 5 = □
□ X 5 = □
10 X 5 = □

3. Keep the fruits in their appropriate plates.
One bundle of 10 sticks | Addition facts | Multiplication facts
---|---|---
10 | 10 | 1 X 10 = 10
| 10+10 | 2 X 10 = 20
| 10+10+10 | 3 X 10 = 30
| 10+10+10+10 | 4 X 10 = 40
| 10+10+10+10+10 | 5 X 10 = 50
| 10+10+10+10+10+10 | 6 X 10 = 60
| 10+10+10+10+10+10+10 | 7 X 10 = 70
| 10+10+10+10+10+10+10+10 | 8 X 10 = 80
| 10+10+10+10+10+10+10+10+10 | 9 X 10 = 90
| 10+10+10+10+10+10+10+10+10+10 | 10 X 10 = 100

See the magic!

Multiplication table 10

4 X 3 = 3 X 4 = 12
4 groups of 3 items and 3 groups of 4 items contain the same 12 items

4 groups of 3 brinjals
3 groups of 4 brinjals
Using the 10 beads and strings from the self-learning material in maths, form the multiples of 10.

Circle the multiples of 10.
1. Complete the multiplication table.

<table>
<thead>
<tr>
<th>X</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Multiplication with zero**

Observe that there is no flower in any of the flower pots.

This can be written as

\[
0 \text{ flowers in the 1}\text{st pot} + 0 \text{ flowers in the 2}\text{nd pot} + 0 \text{ flowers in the 3}\text{rd pot} = 0 \text{ flowers on the whole}
\]

\[
0 + 0 + 0 = 0
\]

That is, if we multiply any number with zero then the product is zero.

Note that, if we multiply zero with any number, then also the product is zero.

\[
3 \times 0 = 0 \times 3 = 0
\]
Practise by saying

<table>
<thead>
<tr>
<th>Multiplication table 2</th>
<th>Multiplication table 3</th>
<th>Multiplication table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x 2 = 2</td>
<td>1 X 3 = 3</td>
<td>1 X 4 = 4</td>
</tr>
<tr>
<td>2 x 2 = 4</td>
<td>2 X 3 = 6</td>
<td>2 X 4 = 8</td>
</tr>
<tr>
<td>3 x 2 = 6</td>
<td>3 X 3 = 9</td>
<td>3 X 4 = 12</td>
</tr>
<tr>
<td>4 x 2 = 8</td>
<td>4 X 3 = 12</td>
<td>4 X 4 = 16</td>
</tr>
<tr>
<td>5 x 2 = 10</td>
<td>5 X 3 = 15</td>
<td>5 X 4 = 20</td>
</tr>
<tr>
<td>6 x 2 = 12</td>
<td>6 X 3 = 18</td>
<td>6 X 4 = 24</td>
</tr>
<tr>
<td>7 x 2 = 14</td>
<td>7 X 3 = 21</td>
<td>7 X 4 = 28</td>
</tr>
<tr>
<td>8 x 2 = 16</td>
<td>8 X 3 = 24</td>
<td>8 X 4 = 32</td>
</tr>
<tr>
<td>9 x 2 = 18</td>
<td>9 X 3 = 27</td>
<td>9 X 4 = 36</td>
</tr>
<tr>
<td>10 x 2 = 20</td>
<td>10 X 3 = 30</td>
<td>10 X 4 = 40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multiplication table 5</th>
<th>Multiplication table 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 X 5 = 5</td>
<td>1 X 10 = 10</td>
</tr>
<tr>
<td>2 X 5 = 10</td>
<td>2 X 10 = 20</td>
</tr>
<tr>
<td>3 X 5 = 15</td>
<td>3 X 10 = 30</td>
</tr>
<tr>
<td>4 X 5 = 20</td>
<td>4 X 10 = 40</td>
</tr>
<tr>
<td>5 X 5 = 25</td>
<td>5 X 10 = 50</td>
</tr>
<tr>
<td>6 X 5 = 30</td>
<td>6 X 10 = 60</td>
</tr>
<tr>
<td>7 X 5 = 35</td>
<td>7 X 10 = 70</td>
</tr>
<tr>
<td>8 X 5 = 40</td>
<td>8 X 10 = 80</td>
</tr>
<tr>
<td>9 X 5 = 45</td>
<td>9 X 10 = 90</td>
</tr>
<tr>
<td>10 X 5 = 50</td>
<td>10 X 10 = 100</td>
</tr>
</tbody>
</table>
**Multiplication facts in life situations**

An elephant has 4 legs. How many legs will 5 elephants have?

Number of elephants = 5

Number of legs for an elephant = 4

(1 X 4 = 4, 2 X 4 = 8, 3 X 4 = 12, 4 X 4 = 16, 5 X 4 = 20)

Total number of legs for 5 elephants = 5 x 4 = 20

**Example**

The students of class III sit in 6 rows. In one row there are 5 students. Find the number of students in the class.

Number of rows = 6

Number of students in 1 row = 5

Total number of students in the class = 6 x 5

(1 X 5 = 5, 2 X 5 = 10, 3 X 5 = 15, 4 X 5 = 20, 5 X 5 = 25, 6 X 5 = 30)

Total number of students = 30
There are 3 pencils in a packet. How many pencils are there in 6 such packets?

In a class each student has 5 books. How many books do 9 students have?

Ram gave sweets to 10 students. Each student got 4 sweets. Find out the number of sweets distributed by Ram?

There are 3 apples in a box. How many apples are there in 8 boxes?

There are 5 colour pencils in one packet. Find the number of colour pencils in 9 such packets?
**Multiplication of two digit number by one digit number**

**Multiply 12 by 3:**

\[ 12 \times 3 = ? \]

That is 3 times of 12 = ?

\[ 12 \times 3 = 3 \times 1 \text{ ten} + 3 \times 2 \text{ ones} \]

\[ = 3 \times 10 + 3 \times 2 \]

\[ = 30 + 6 \]

\[ = 36 \]

\[ 12 \times 3 = 36 \]

**Using multiplication tables:**

**Step 1:**

First multiply ones

3 \times 2 \text{ ones} = 6 \text{ ones}
Step 2:

Then multiply tens
$3 \times 1 \text{ ten} = 3 \text{ tens}$

Example

(i) Find the product:

$23 \times 3 = 69$
(ii) Find the product using multiplication tables:

- a. $23 \times 2$
- b. $20 \times 4$
- c. $44 \times 2$
- d. $32 \times 3$
- e. $11 \times 5$
- f. $22 \times 4$
Multiply 14 by 3

\[ 14 \times 3 = ? \]

That is 3 times of 14 = ?

(Regroup 12 ones as 1 ten + 2 ones)

\[ 14 \times 3 = 3 \times 1 \text{ ten} + 3 \times 4 \text{ ones} \]

(Regroup 3 \times 4 \text{ ones} = 12 \text{ ones as 1 ten + 2 ones})

\[ = 3 \text{ tens} + 1 \text{ ten} = 4 \text{ tens} + 2 \text{ ones} \]

\[ = 40 + 2 \]

\[ = 42 \]

\[ 14 \times 3 = 42 \]

Using multiplication tables we can multiply as follows:

Find the product of \( 14 \times 3 \)

Step 1:

- Multiply 4 ones by 3
  \( 3 \times 4 \text{ ones} = 12 \text{ ones} \).
- 12 ones = 1 ten + 2 ones.
- Write 2 ones under ones place.
- Carry over 1 to tens place.
Step 2:

- Multiply 1 ten by 3
  - $3 \times 1\ ten = 3\ tens$
- Add with 1 ten (regrouped)
  - $3\ tens + 1\ ten = 4\ tens$
- Write 4 in tens place

\[14 \times 3 = 42\]

Example

**Find the product of \( 23 \times 5 \)**

**Step 1:**

- Multiply 3 ones by 5
  - $5 \times 3\ ones = 15\ ones$.  
- 15 ones = 1 ten + 5 ones.
- Write 5 ones under ones place.
- Carry over 1 to tens place.

**Step 2:**

- Multiply 2 tens by 5.
- Add with 1 ten (regrouped).
- 10 tens + 1 ten = 11 tens
  - 11 tens = 1 hundred + 1 ten.
- Write 1 in tens place and 1 in hundreds place.
Step 3:

1) Find the product:

A

\[
\begin{array}{c}
32 \times 4 \\
23 \times 3 \\
14 \times 3 \\
48 \times 2
\end{array}
\]

B

\[
\begin{array}{c}
42 \times 2 \\
20 \times 2 \\
23 \times 4 \\
24 \times 5
\end{array}
\]

c

d

C

\[
\begin{array}{c}
61 \times 5 \\
21 \times 5 \\
62 \times 5 \\
26 \times 3
\end{array}
\]

d

e

D

2) Find the product:

X 5

H T O

2 3

1

1

23 \times 5 = 115

Exercise 10
1. Colour the pair of numbers adjacent to each other whose product is 12.

2. We can construct multiplication tables through sticks.

Let us construct the multiplication table 3

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>12</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1 X 3 = 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 X 3 = 6</td>
<td></td>
</tr>
<tr>
<td>3 X 3 = 9</td>
<td></td>
</tr>
<tr>
<td>4 X 3 = 12</td>
<td></td>
</tr>
<tr>
<td>5 X 3 = 15</td>
<td></td>
</tr>
<tr>
<td>6 X 3 = 18</td>
<td></td>
</tr>
<tr>
<td>7 X 3 = 21</td>
<td></td>
</tr>
<tr>
<td>8 X 3 = 24</td>
<td></td>
</tr>
<tr>
<td>9 X 3 = 27</td>
<td></td>
</tr>
<tr>
<td>10 X 3 = 30</td>
<td></td>
</tr>
</tbody>
</table>
Take 3 sticks and keep them vertically.
Take one stick and keep it across as shown above.
Count the number of points where they meet each other.
There are three meeting points.
1 time of 3 meeting points = 3 or 1 \times 3 = 3.
Take one more stick and keep it across as shown above.
Count the total number of meeting points, it is 6.
2 times of 3 meeting points is 6 or 2 \times 3 = 6.
Continue this process to get 3 times, 4 times etc up to 10 times.

3. Multiplication tables through playway method.

Let us construct the multiplication table 4.

Step 1:
Draw 4 circles in 10 rows.

Step 2:
Fill the numbers 1 to 40 inside the circles.

Step 3:
The numbers in the last column will be the product.

Construct other tables and enjoy
Mental sums

Ram’s age is 30 years. His father’s age is twice Ram’s age. Find the age of his father.

Geetha scored 45 marks in an exam. In the next exam she scored double of it. How much did she score in the next exam?

Sanjeeve scored 48 runs in the first match. He scored double in the second match. How much did he score in the second match?

Seetha’s weight is 16 kg. Her brother krishna weighs double. What is the weight of krishna?

Sheela bought a dozen of plantain. Saro bought 4 less than double of it. How many plantains did saro buy?
Ram has 6 apples. He wants to give equal number of apples to 2 children.

How do I share equally?

First give one to each

4 apples remain

Next give one more to each

2 apples remain

Finally give one more to each

No apples remain

Each child got 3 apples

“Equal sharing” is known as “Division”.
Thus Ram divided 6 apples equally between the 2 children with the help of his sister vidhya and finally each child got 3 apples.

Number of apples = 6
Number of persons = 2
Number of apples each got = 3
We write this as \[ \frac{6}{2} = 3 \]

This is read as 6 divided by 2 is equal to 3

\[ \frac{6}{2} = 3 \] is called as “division fact”

\( \div \) symbol represents “division”

Let us see how vidhya divided 6 apples equally into groups of 2 each.

She divided 6 apples into 3 groups of 2 each.

In this case, what is the division fact?

It is simple.
\[ 6 \div 2 = 3 \]
Complete the table by dividing the given items equally.

<table>
<thead>
<tr>
<th>Total number of items</th>
<th>Number of items in a group</th>
<th>Total number of groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Pencils</td>
<td>4 Pencils</td>
<td>2 Groups</td>
</tr>
<tr>
<td>9 Erasers</td>
<td>3 Erasers</td>
<td>3 Groups</td>
</tr>
<tr>
<td>15 Pebbles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Seeds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As given in the example, complete the following division facts.

Example

\[ 8 \div 4 = ? \]

The division fact is \[ 8 \div 4 = 2 \]

Exercise 1

a. \[ 4 \div 2 = \]

b. \[ 9 \div 3 = \]
Division is repeated subtraction

Division is not only sharing equally but it is also repeated subtraction of the same number.

There are 6 toys. Let us divide these toys equally.

1st time, keep one toy on each table

![Picture of toys]

Subtract 2 from 6

$6 - 2 = 4$

2nd time, keep again one toy on each table

![Picture of toys]

Subtract 2 from 4

$4 - 2 = 2$

3rd time, keep again one toy on each table

![Picture of toys]

Subtract 2 from 2

$2 - 2 = 0$

We have repeatedly subtracted 2 from 6, three times.

That is $6 \div 2 = 3$

Division is nothing but, “repeated subtraction”
Division through repeated subtraction:

**Example**

\[ 15 \div 3 \]

Let us subtract 3 from 15 repeatedly

\[
\begin{array}{c}
15 \\
- 3 \\
\hline
12 \\
- 3 \\
\hline
9 \\
- 3 \\
\hline
6 \\
- 3 \\
\hline
3 \\
- 3 \\
\hline
0
\end{array}
\]

Thus 3 is subtracted from 15, 5 times.

Therefore \[ 15 \div 3 = 5 \]

**Exercise 2**

Divide through repeated subtraction:

a. \[ 15 \div 3 \]

b. \[ 12 \div 4 \]

\[ 15 \div 3 = \]

\[ 12 \div 4 = \]
Relation between multiplication and division.

Some balls are arranged as follows:

<table>
<thead>
<tr>
<th>Multiplication</th>
<th>Division - 1</th>
<th>Division - 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Multiplication" /></td>
<td><img src="image" alt="Division - 1" /></td>
<td><img src="image" alt="Division - 2" /></td>
</tr>
<tr>
<td>Total number of balls</td>
<td>4 × 3 = 12</td>
<td>12 ÷ 3 = 4</td>
</tr>
</tbody>
</table>

From the above table we see that the multiplication fact has two division facts.

4 × 3 = 12

12 ÷ 3 = 4
12 ÷ 4 = 3

For each multiplication fact there are 2 division facts.

But, if the same numbers are multiplied, there will be only one division fact.

Example

3 × 3 = 9
Multiplication fact

9 ÷ 3 = 3
Division fact
Do the following:

<table>
<thead>
<tr>
<th>Multiplication fact</th>
<th>Division facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3 \times 2 = 6$</td>
<td>$6 \div 3 = 2$</td>
</tr>
<tr>
<td>$4 \times 3 = 12$</td>
<td></td>
</tr>
<tr>
<td>$7 \times 2 = \underline{14}$</td>
<td></td>
</tr>
<tr>
<td>$6 \times 5 = \underline{30}$</td>
<td></td>
</tr>
<tr>
<td>$3 \times 3 = \underline{9}$</td>
<td></td>
</tr>
<tr>
<td>$5 \times 4 = \underline{20}$</td>
<td></td>
</tr>
<tr>
<td>$2 \times 0 = 0$</td>
<td></td>
</tr>
<tr>
<td>$4 \times 4 = 16$</td>
<td></td>
</tr>
<tr>
<td>$9 \times 0 = 0$</td>
<td></td>
</tr>
<tr>
<td>$8 \times 5 = 40$</td>
<td></td>
</tr>
</tbody>
</table>

Note

If a number is multiplied with zero, it has only one division fact.

Example

$5 \times 0 = 0$

Multiplication fact

$0 \div 5 = 0$

Division fact

Zero $\div$ Any non zero number $= \text{ Zero}$

Exercise 3

Exercise 3
Division table

Using the multiplication tables we can get a lot of division facts.

Construct the division facts for the multiplication table 2

<table>
<thead>
<tr>
<th>Multiplication table 2</th>
<th>Division facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 X 2 = 2</td>
<td>2 ÷ 2 = 1</td>
</tr>
<tr>
<td>2 X 2 = 4</td>
<td>4 ÷ 2 = 2</td>
</tr>
<tr>
<td>3 X 2 = 6</td>
<td>6 ÷ 2 = 3</td>
</tr>
<tr>
<td>4 X 2 = 8</td>
<td>8 ÷ 2 = 4</td>
</tr>
<tr>
<td>5 X 2 = 10</td>
<td>10 ÷ 2 = 5</td>
</tr>
<tr>
<td>6 X 2 = 12</td>
<td>12 ÷ 2 = 6</td>
</tr>
<tr>
<td>7 X 2 = 14</td>
<td>14 ÷ 2 = 7</td>
</tr>
<tr>
<td>8 X 2 = 16</td>
<td>16 ÷ 2 = 8</td>
</tr>
<tr>
<td>9 X 2 = 18</td>
<td>18 ÷ 2 = 9</td>
</tr>
<tr>
<td>10 X 2 = 20</td>
<td>20 ÷ 2 = 10</td>
</tr>
</tbody>
</table>

Try to construct the division facts for the tables 3, 4, 5 and 10.

Simple Division Problems

(a) Division with grouping:

Example

Divide 24 stars in to groups of 4 stars each

Make groups of 4 stars each

24 stars can be divided into 6 groups of 4 stars each

24 ÷ 4 = 6
1) Divide 12 books into groups of 3 books each.

\[ 12 \div 3 = \square \]

2) Divide 15 candles into groups of 5 candles each.

\[ 15 \div 5 = \square \]

3) Divide 16 flowers into groups of 2 flowers each.

\[ 16 \div 2 = \square \]

4) Divide 12 dice into 4 equal groups.

\[ 12 \div 4 = \square \]

5) Divide 20 keys into 2 equal groups.

\[ 20 \div 2 = \square \]
Division using multiplication tables:

Example 1

Divide 15 ÷ 3

1 × 3 = 3
2 × 3 = 6
3 × 3 = 9
4 × 3 = 12

15 ÷ 3 = 5

Say the multiplication table 3 till you get product 15.

Example 2

Divide 30 ÷ 5

1 × 5 = 5
2 × 5 = 10
3 × 5 = 15
4 × 5 = 20
5 × 5 = 25

30 ÷ 5 = 6

Say the multiplication table 5 till you get product 30.

Exercise 5

Divide:

1. 15 ÷ 3 =
2. 18 ÷ 2 =
3. 20 ÷ 10 =
4. 28 ÷ 4 =
5. 10 ÷ 5 =
6. 16 ÷ 4 =
7. 35 ÷ 5 =
8. 27 ÷ 3 =
9. 25 ÷ 5 =
We measure the length of the objects to find out how long they are. We can measure the length using non-standard units such as:

- a handspan
- a cubit
- a pace
- a footspan

Similarly, we can measure the length using objects.

Length of the table = 5 sketch pens
Length of the Pen = 5 erasers.
ACTIVITY 1

1. Class table is .................. cubit long.
2. Length of your class room is .................. pace long.
4. Class room is .................. foot span long.

Need for a standard Unit

ACTIVITY 2

Take a rope. Measure it in hand span and fill the table given below.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the students</th>
<th>Length of the rope (in handspan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Look at the above measurements.

Are these measurements same?

No, they are not the same. Because each hand span of the students is different.

So, we need a standard unit to measure the length.

We use a metre or centimetre scale to measure length
Millimetre

Millimetre is the smallest unit of measuring length. It is used to measure small measurements. Look closely at your ruler. You will see very small lines between two numbers on the centimetre ruler as shown below. These are called millimetre. It is written as mm.

[Image of a ruler with millimetre markings]

**Centimetre**

Look at the picture:

The thickness of the book is 10mm. This is otherwise written as 1cm.

Centimetre is the next immediate higher unit of measuring length to that of millimetre.

It is written as cm.

[Image of a book with a 10 mm measurement]
Metre

Look at the picture:

The shopkeeper uses the metre scale to measure clothes which consists of 100 cm.

Metre is the next applicable higher unit of measuring length to that of centimetres. It is written as m.

100 cm = 1 m

Kilometre

Look at the picture:

The bus covers the distance in kilometre.

1 kilometre consists of 1000 m.

Kilometre is the bigger unit of length than metre.

It is written as km. It is used to measure long distance.

1000 m = 1 km
Complete the table by writing any two places in your school / locality and find the distance between them in metres / kilometres with the help of your teacher.

<table>
<thead>
<tr>
<th>Place I</th>
<th>Place II</th>
<th>Distance between them</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measuring in Centimetres**

Place the zero mark on centimetre ruler against one end of the object. Read the number at the other end.

- **Pencil is 14 cm long.**
- **Pen is 12 cm long.**
- **Eraser is 4 cm long.**

**ACTIVITY 4**

Measure the length of objects such as pencil box, duster, maths book, crayan which you have and tabulate them.
**ACTIVITY 5**

Measure the heights of the students in your class in centimetre and tabulate them.

<table>
<thead>
<tr>
<th>S.no</th>
<th>Name of the student</th>
<th>Height of the student (in cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACTIVITY 6**

Estimate the length of the following objects and verify it.

<table>
<thead>
<tr>
<th>S.no</th>
<th>Name of the objects</th>
<th>Estimated length</th>
<th>Actual length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chalk piece</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Duster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Pencil box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Bench</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Black board</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tabulate the estimated length and actual length of the materials available in your environment.
Recall

Look at the pictures
List out the objects in descending order based on your estimation of their weight.

Chalk pieces  Hand Kerchief  Pencil Box
Duster  Book

What do you infer from the above activity? Every object has its own weight!
Can you guess which school bag is heavier?

In each group circle the object which is heavier?

1. Exercise 1

Try it!

1

2

3

4
Simple Balance

Look at the picture. Use a thin stick, thread and plastic plates. Make a simple balance

Weighing objects using non-standard units

Now we measure the weight of the given objects by non-standard units using simple balance.

Example

1. Weight of one watermelon = 3 coconuts

2. Weight of one box = 4 pens
Observe the pictures find out the weight of the objects.

1. Weight of one chick
   = ________ balls.

2. Weight of one Papaya
   = ________ apples.

3. Weight of one Pineapple.
   = ________ dolls.

Project

Weigh some objects by your locally available non standard units such as seeds, stones etc., using the simple balance and tabulate your result.
The amount of liquid that a container can hold is the capacity of the container.

Container A holds 25 mugs of water.
Container B holds 18 mugs of water.
Which container has larger capacity?

Answer: _______________

Example

The pot is filled with 9 jugs of water.
So, the capacity of the pot is 9 jugs.

In non-standard units for measuring capacity, we use a small container to find out the capacity of big container.
Find out the measurement of the following container:

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<thead>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Two</td>
<td>of milk fill one</td>
<td>The capacity of the</td>
<td>is =</td>
<td>2</td>
<td></td>
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<tr>
<td>2</td>
<td>Eight</td>
<td>of water fill one</td>
<td>The capacity of the</td>
<td>is =</td>
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<tr>
<td>3</td>
<td>One</td>
<td>holds 15</td>
<td>of tea.</td>
<td>The capacity of the</td>
<td>is =</td>
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<tr>
<td>4</td>
<td>Five</td>
<td>of juice fill one.</td>
<td>The capacity of the</td>
<td>is =</td>
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<td></td>
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<tr>
<td>5</td>
<td>Ten</td>
<td>of oil fill one.</td>
<td>The capacity of the</td>
<td>is =</td>
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</table>
ACTIVITY 1

- Divide the students into four groups.
- For each group give different size of buckets.
- Give the same size of jug to each group.
- Ask them to fill their buckets with water using the jug.

Compare the capacity of the buckets and discuss:

<table>
<thead>
<tr>
<th>Name of the groups</th>
<th>Capacity of the buckets</th>
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<tbody>
<tr>
<td>A</td>
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<td>B</td>
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<td>C</td>
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<td>D</td>
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Arrange the groups based on the capacity of the buckets:

[ ] > [ ] > [ ] > [ ]

THINK!

For filling a particular tank, Kala needs 40 pots of water whereas Sathya needs 50 pots of water. Find out the reason.
1) Which vessel helps quicker in filling a container?
The capacity of the container is 5 mugs (or)
The capacity of the container is 3 mugs.

   Answer: _______________________________

2) If a narrow container holds 8 bottles of petrol and a wider container holds 8 bottles of diesel then the capacity of narrow container is ___________ the capacity of wider container (greater than / equal to / less than)

3) A beaker holds 25 cups of milk. The capacity of the beaker is ___________ cups.

4) A flask was filled with 7 cups of tea. Then the number of similar cups required to make the flask empty is ___________.

5) The capacity of the watercan is 30 bottles. Then the number of bottles of same size that will fill another watercan of same size is ___________.

Date:..........................
‘I can, I did’
Student's Activity Record

Subject:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Date</th>
<th>Lesson No.</th>
<th>Topic of the Lesson</th>
<th>Activities</th>
<th>Remarks</th>
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