Star Public School

Dear Parents'

Today's assignment

Maths - Chapter 4

English - Reading practice

Home assignment

Maths - Learn tables

English - Do reading practice

Edited 12:58 PM

4 Multiplication

Learning Objectives

The learners will be able to

- learn multiplication facts.
- multiply numbers on a number line.
- multiply 3-digit numbers by 1-digit numbers.
- solve word problems involving multiplication.
- learn multiplication tables.
- multiply 2-digit numbers by 1-digit numbers.
- multiply numbers ending with zero.

We Will Learn About

- Multiplication
- Multiplication Tables
- Multiplication of 2-digit Number by 1-digit Number
- Multiplication by Numbers Ending with Zero
- Properties of Multiplication
- Multiplication on a Number Line
- Multiplication of 3-digit Number by 1-digit Number

Let's Tune Up

Colour the correct number of circles that need to be added together to find the given product. Also, write the repeated addition in the boxes.

(a) 6×3 — 3 3 3 3 3 3 3 3 3 3

Repeated Addition: 3+3+3+3+3+3

(b) 10×3 — 10 10 10 10 10 10 10 10 10 10

Repeated Addition: 10+10+10

(c) 5×4 — 4 4 4 4 4 4 4 4 4 4

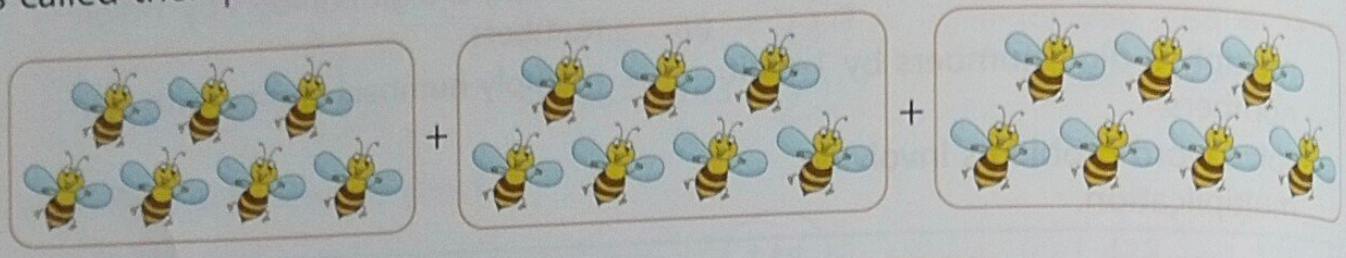
Repeated Addition: 4+4+4+4+4

Multiplication

Multiplication means to add similar group of things repeatedly which is also known as repeated addition. The symbol '×' is used for multiplication. Multiplication is a short and easy way to do repeated addition. The answer obtained on multiplying two or more numbers is called their product.

Keep in Mind

Repeated addition is to add the same number over and over again.



We can see that there are 3 groups of 7 honeybees each.

This can be written using repeated addition as $7 + 7 + 7 = 21$.

It can be written as $3 \times 7 = 21$ in the form of multiplication.

We can read it as 3 times 7 equals 21.

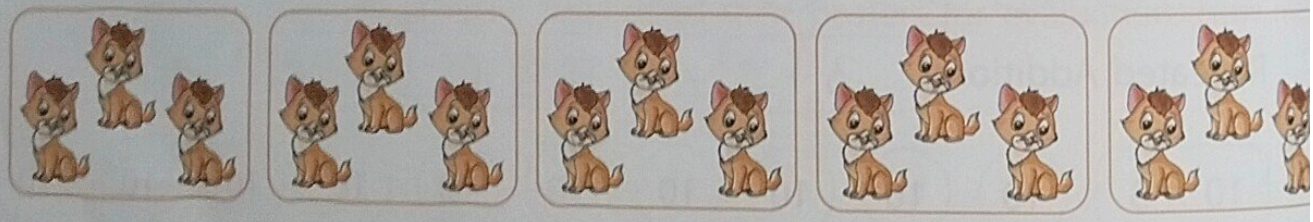
Try It Out

Match the following.

(a) 5×7	(i) 3 times 4
(b) 4×3	(ii) 2 times 6
(c) 2×6	(iii) 5 times 7
(d) 3×4	(iv) 4 times 3

Properties of Multiplication

- Changing the order of numbers does not affect their product. So, we ca multiply numbers in any order, and obtain the same product every time.



There are 5 groups of 3 kittens each.

$3 + 3 + 3 + 3 + 3 = 15$ or $5 \times 3 = 15$

Number of groups — Number in each group — Product

There are 3 groups of 5 kittens each.

$5 + 5 + 5 = 15$ or $3 \times 5 = 15$

Thus, $5 \times 3 = 3 \times 5 = 15$.

- The product of any number and 1 is the number itself.

  Examples: $7 \times 1 = 7$, $8 \times 1 = 8$, $5 \times 1 = 5$

- The product of any number and 0 is always 0.

  Examples: $4 \times 0 = 0$, $7 \times 0 = 0$, $9 \times 0 = 0$

Know More

The product of two numbers is always greater than the numbers unless one of the numbers is 1 or 0.

Multiplication Tables

We have already learnt multiplication tables of 2, 3, 4 and 5. Now let's learn the multiplication tables of 6, 7, 8, 9 and 10.

Try It Out

Tick the one that shows repeated addition.

(a) $1 + 3 + 2 + 4 = 10$ ☐

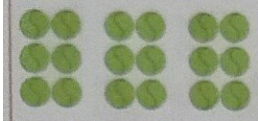
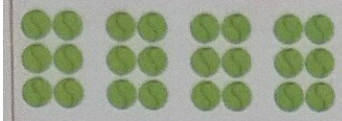
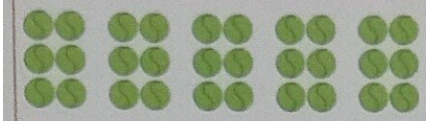
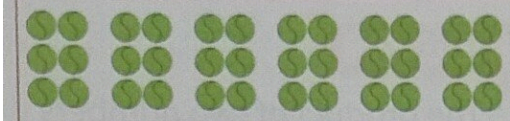
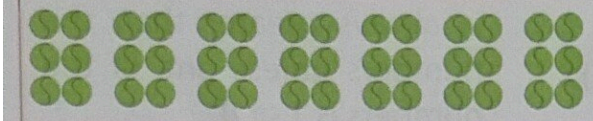
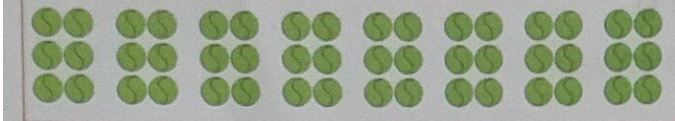
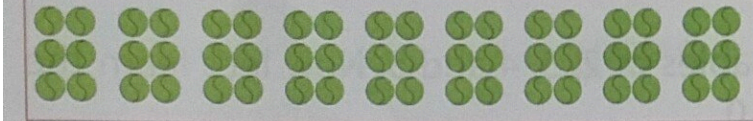
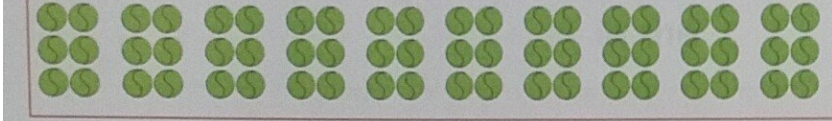
(b) $2 + 2 + 2 + 2 + 2 = 10$ ☑

Multiplication Table of 6

Repeated Addition of Groups of Six	Read as	Written as
	6 ones are 6.	$6 \times 1 = 6$
	6 twos are 12.	$6 \times 2 = 12$

For the Teacher

Reiterate that the order property is used to read and remember tables.

	6 threes are 18.	$6 \times 3 = 1$
	6 fours are 24.	$6 \times 4 = 2$
	6 fives are 30.	$6 \times 5 = 3$
	6 sixes are 36.	$6 \times 6 = 3$
	6 sevens are 42.	$6 \times 7 = 4$
	6 eights are 48.	$6 \times 8 = 48$
	6 nines are 54.	$6 \times 9 = 54$
	6 tens are 60.	$6 \times 10 = 60$

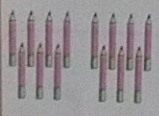
Try It Out

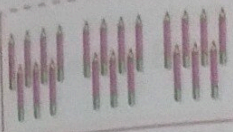
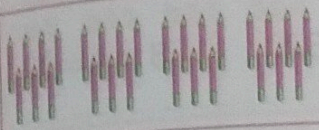
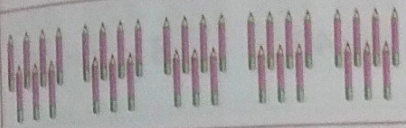
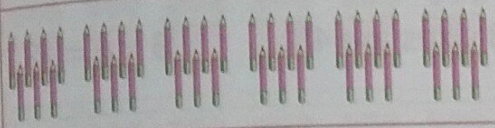
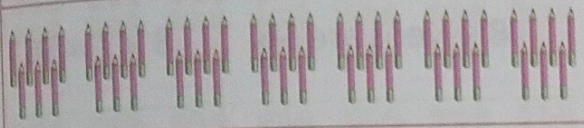
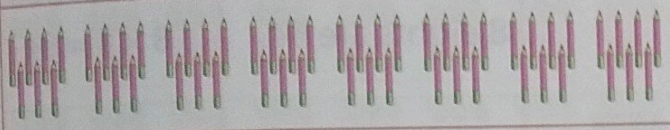
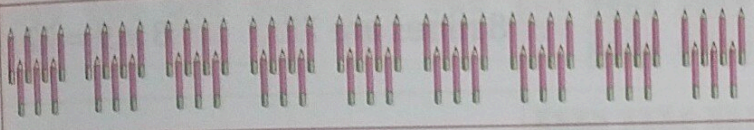
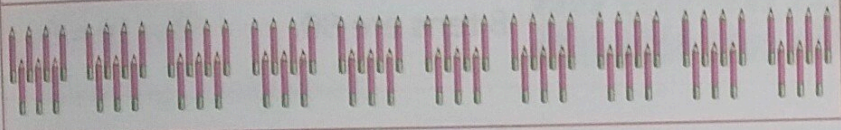
Fill in the blank boxes.

(a) $4 \times 6 =$ 24 $= 6 \times$ 4

(b) $2 \times 6 =$ 12 $=$ 6 $\times 2$

Multiplication Table of 7

Repeated Addition of Groups of Seven	Read as	Written as
	7 ones are 7.	$7 \times 1 = 7$
	7 twos are 14.	$7 \times 2 = 14$

	7 threes are 21.	$7 \times 3 = 21$
	7 fours are 28.	$7 \times 4 = 28$
	7 fives are 35.	$7 \times 5 = 35$
	7 sixes are 42.	$7 \times 6 = 42$
	7 sevens are 49.	$7 \times 7 = 49$
	7 eights are 56.	$7 \times 8 = 56$
	7 nines are 63.	$7 \times 9 = 63$
	7 tens are 70.	$7 \times 10 = 70$

Try It Out

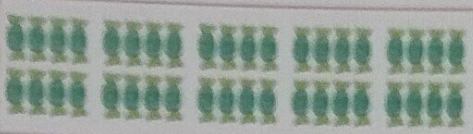
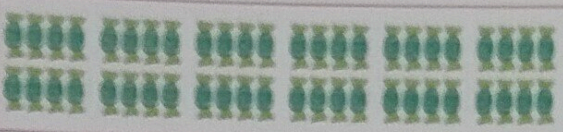
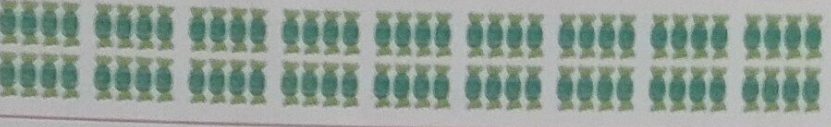
Fill in the blank boxes.

(a) $7 \times 2 =$ [14] $= 2 \times$ [7]

(b) $5 \times$ [7] $=$ [35] $= 7 \times 5$

Multiplication Table of 8

Repeated Addition of Groups of Eight	Read as	Written as
	8 ones are 8.	$8 \times 1 = 8$
	8 twos are 16.	$8 \times 2 = 16$

	8 threes are 24.	$8 \times 3 = 24$
	8 fours are 32.	$8 \times 4 = 32$
	8 fives are 40.	$8 \times 5 = 40$
	8 sixes are 48.	$8 \times 6 = 48$
	8 sevens are 56.	$8 \times 7 = 56$
	8 eights are 64.	$8 \times 8 = 64$
	8 nines are 72.	$8 \times 9 = 72$
	8 tens are 80.	$8 \times 10 = 80$

Try It Out

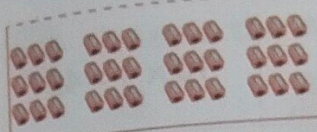
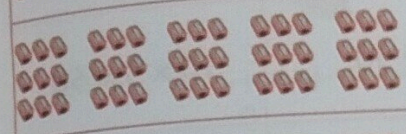
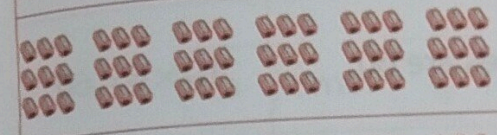
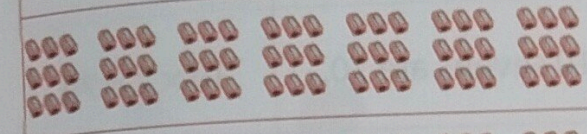
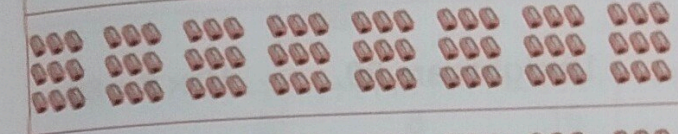
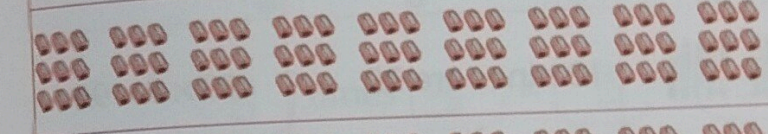
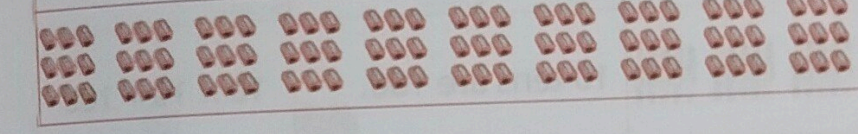
Fill in the blank boxes.

(a) $7 \times 8 = \boxed{56} = \boxed{8} \times 7$

(b) $6 \times \boxed{8} = \boxed{48} = 8 \times 6$

Multiplication Table of 9

Repeated Addition of Groups of Nine	Read as	Written as
	9 ones are 9.	$9 \times 1 = 9$
	9 twos are 18.	$9 \times 2 = 18$
	9 threes are 27.	$9 \times 3 = 27$

	9 fours are 36.	$9 \times 4 = 36$
	9 fives are 45.	$9 \times 5 = 45$
	9 sixes are 54.	$9 \times 6 = 54$
	9 sevens are 63.	$9 \times 7 = 63$
	9 eights are 72.	$9 \times 8 = 72$
	9 nines are 81.	$9 \times 9 = 81$
	9 tens are 90.	$9 \times 10 = 90$

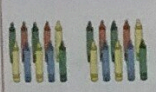
Try It Out

Fill in the blank boxes.

(a) $2 \times 9 =$ 18 $= 9 \times$ 2

(b) $8 \times 9 =$ 72 $= 9 \times$ 8

Multiplication Table of 10

Repeated Addition of Groups of Ten	Read as	Written as
	10 ones are 10.	$10 \times 1 = 10$
	10 twos are 20.	$10 \times 2 = 20$
	10 threes are 30.	$10 \times 3 = 30$

	10 fours are 40.	$10 \times 4 = 40$
	10 fives are 50.	$10 \times 5 = 50$
	10 sixes are 60.	$10 \times 6 = 60$
	10 sevens are 70.	$10 \times 7 = 70$
	10 eights are 80.	$10 \times 8 = 80$
	10 nines are 90.	$10 \times 9 = 90$
	10 tens are 100.	$10 \times 10 = 100$

Try It Out

Fill in the blank boxes.

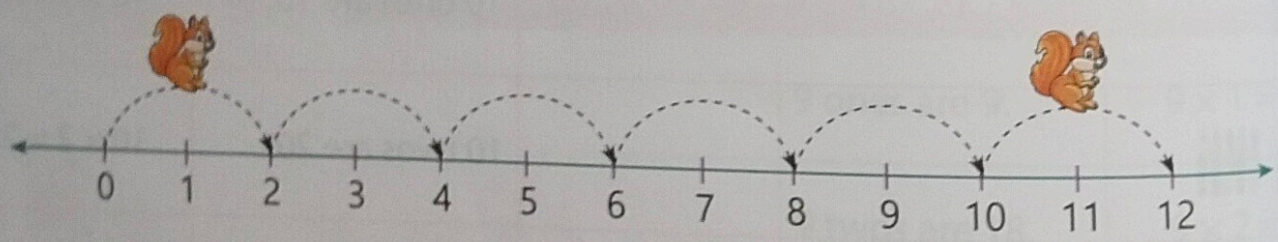
(a) $10 \times 7 = \boxed{70} = 7 \times \boxed{10}$

(b) $4 \times \boxed{10} = \boxed{40} = 10 \times 4$

Multiplication on a Number Line

Numbers can be multiplied using number line also.

Let's multiply 2 by 6 on a number line.

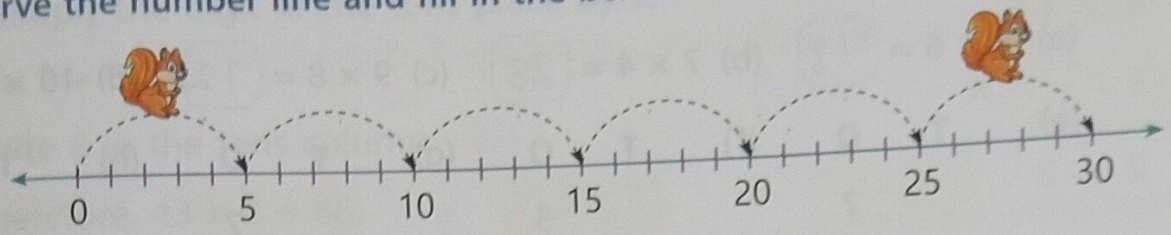


Here, the squirrel jumps 2 steps 6 times to reach 12.

So, 6 times 2 = 6 × 2 = 12.

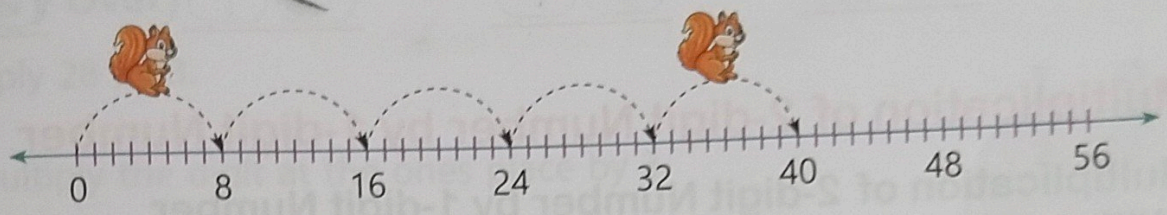
A Observe the number line and fill in the boxes.

(a)



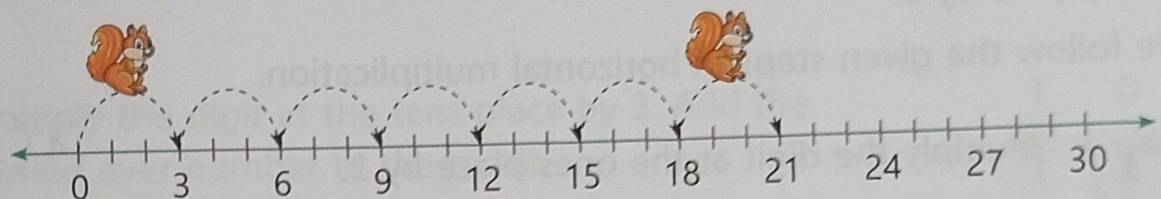
6 times 5 = 5 × 6 = 30

(b)



5 times 8 = 8 × 5 = 40

(c)



7 times 3 = 3 × 7 = 21

Methods of Multiplication

We can perform multiplication in two ways.

In horizontal multiplication, write the numbers next to each other with a multiplication sign in between. The product is also written in the same row. $9 \times 4 = 36$ is an example.

In vertical multiplication, write the numbers one below the other with a multiplication sign before the second number. The product is written below the second number. Look at the example given alongside.

	T	O	
		6	→ first number
×		3	→ second number
	1	8	→ product

B Find the product.

(a) $8 \times 6 =$ 48

(b) $7 \times 4 =$ 28

(c) $9 \times 8 =$ 72

(d) $10 \times 4 =$ 40

(e)

	T	O
		7
×		3
	2	1

(f)

	T	O
		3
×		8
	2	4

(g)

	T	O
		7
×		7
	4	9

(h)

	T	O
		4
×		6
	2	4

Multiplication of 2-digit Number by 1-digit Number

Multiplication of 2-digit Number by 1-digit Number (Without Carry Over)

Let's learn how to multiply 2-digit numbers by 1-digit numbers.

Multiply 43 by 2.

We follow the given steps in horizontal multiplication.

Step 1: Multiply the digit at the ones place by 2.

$4\ (3) \times (2)$

$3 \times 2 = 6$

Step 2: Multiply the digit at the tens place by 2.

$(4)\ 3 \times (2)$

$4 \times 2 = 8$

Step 3: Write the digits at their correct places.

Therefore, $43 \times 2 = 86$.

$43 \times 2 = 86$

We follow the given steps in vertical multiplication.

Step 1: Multiply the digit at the ones place by 2.

$3 \times 2 = 6$

Write 6 in the ones column.

	T	O
	4	3
×		2
		6

Step 2: Multiply the digit at the tens place by 2.

$4 \times 2 = 8$

Write 8 in the tens column.

Therefore, $43 \times 2 = 86$.

	T	O
	4	3
×		2
	8	6

Multiplication of 2-digit Number by 1-digit Number (With Carry Over)

Let's multiply 28 by 3.

Step 1: Multiply the digit at the ones place by 3.

$8 \times 3 = 24$

Since 24 is a 2-digit number, write 4 in the ones column and carry over 2 to the tens column.

	T	O
	(2)	
	2	8
×		3
		4

Step 2: Multiply the digit at the tens place by 3. Add the carried over number to the result.

$2 \times 3 = 6$

$6 + 2 = 8$

Write 8 in the tens column.

Therefore, $28 \times 3 = 84$.

	T	O
	(2)	
	2	8
×		3
	8	4

C **Find the product.**

(a)

	T	O
	1	2
×		3
	3	6

(b)

	T	O
	1	1
×		7
	7	7

(c)

	T	O
	4	0
×		2
	8	0

(d)

	T	O
	1	8
×		5
	9	0

D Multiply the given numbers.

(a)

	H	T	O
	4	2	3
×			2
	8	4	6

(b)

	H	T	O
	2	1	2
×			3
	6	3	6

(c)

	H	T	O
	2	3	0
×			2
	4	6	0

Multiplication by Numbers Ending with Zero

The numbers 10, 20, 30 and so on are numbers ending with zero. When we multiply a number by another number ending with one zero, the product always ends with a zero.

$7 \times 10 = 70$ $\quad 4 \times 20 = 80$ $\quad 6 \times 30 = 180$

Similarly, when we multiply two numbers such that both are ending with zero, the product always ends with two zeros.

$20 \times 40 = 800$ $\quad 60 \times 10 = 600$ $\quad 30 \times 30 = 900$

Keep in Mind

While multiplying numbers ending with zero, ignore the zeros in the numbers and multiply them. Then count the total number of zeros in both the numbers and write them to the right of the result obtained.

E Find the product of given numbers.

(a) $70 \times 5 = 350$ (b) $30 \times 10 = 300$ (c) $5 \times 30 = 150$

(d)

	H	T	O
		4	0
×		2	0

(e)

	H	T	O
		2	0
×		3	0

(f)

	H	T	O
		6	5
×		1	0

d Problems

l the given word problem carefully.

garden, there are 9 roses in each row. If there 25 rows of roses in the garden, how many roses there in the garden?

mber of rows = 25

mber of roses in one row = 9

al number of roses = 25 × 9 = 225

erefore, 225 roses are there in the garden.

	H	T	O
	②	④	
		2	5
×			9
	2	2	5

Solve the given word problems.

(a) There are 15 crayons in a set of crayons. If Hina bought 7 such sets of crayons, how many crayons does she have in all?

Number of crayons in one set

Number of sets

Total number of crayons

	H	3T	O
		1	5
×			7
	1	0	5

Hina has 105 crayons in 7 sets of crayons.

(b) Amandeep has 15 picture albums. In each album, 20 pictures can be pasted. How many pictures can Amandeep paste in these 15 albums?

Number of pictures in each album

Number of albums

Total number of pictures

	H	T	O
		1	5
×		2	0
		0	0
	3	0	x
	3	0	0

Amandeep can paste 300 pictures in 15 albums.

(c) On Sports Day, 4 types of races were conducted. If 12 students participate in each race, how many students participated in all 4 races?

Number of students in each race

Number of races

Total number of students

	T	O
	1	2
×		4
	4	8

48 students participated in all.

Think, Solve and Learn

1. Rishabh adds 5 ten times and multiplies the answer with 6. What number does he get?
2. Mehak subtracted a number from itself and multiplied the result with 70. What number does she get?
3. Write the 3-digit number obtained by adding 15 ten times repeatedly.

Skills Covered: Critical and logical thinking, Problem-solving, Brainstorming

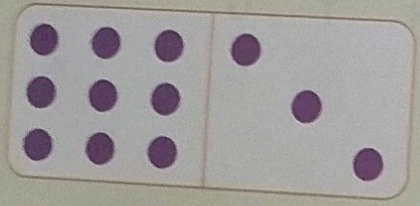
Maths Around

Dhruv and his friends can plant 5 trees in a week. How many trees can they plant in 7 weeks?

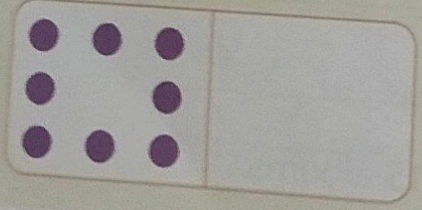
Skills Covered: Observation, Brainstorming, Critical thinking

Brush Up Your Concepts

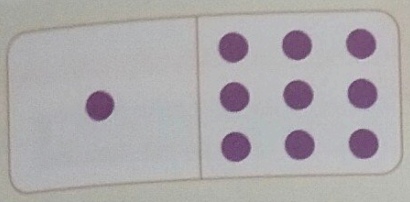
Count the number of dots on the faces of domino. Then multiply the numbers.

(a) 

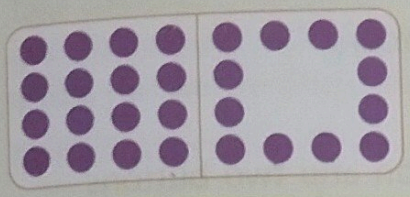
9 × 3 = 27

(b) 

8 × 0 = 0

(c) 

1 × 9 = 9

(d) 

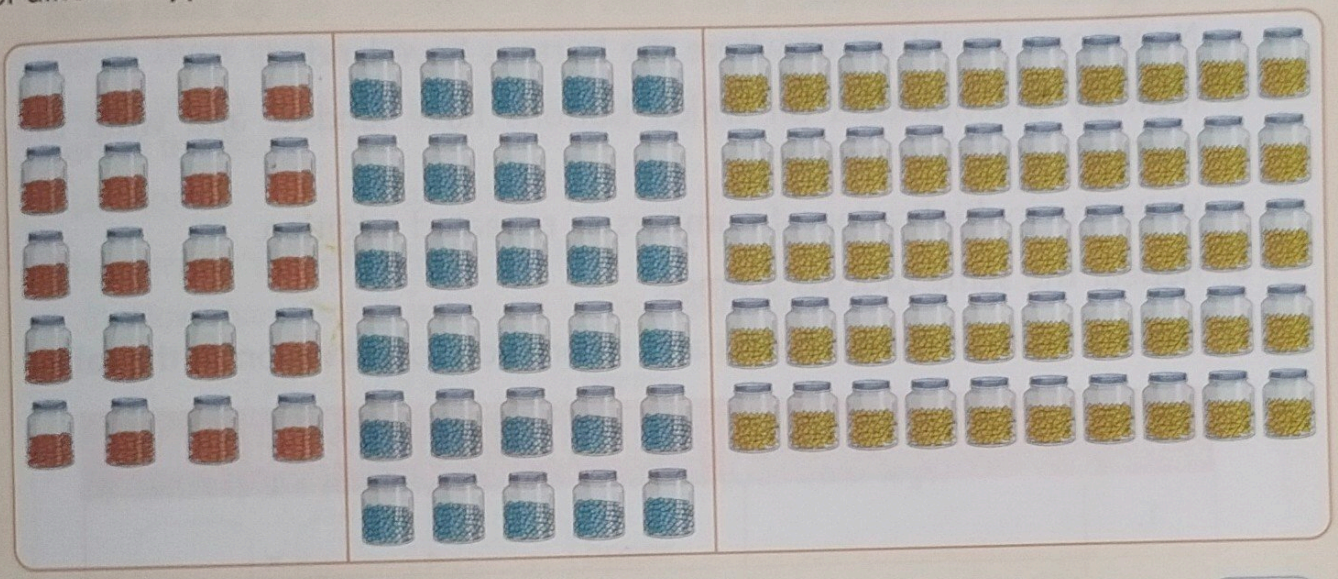
16 × 12 = 192

16
×12
32
+16×
192

Skills Covered: Critical and logical thinking, Brainstorming, Evaluation, Observation

Apply Your Learning

Mohena goes to a candy shop where she gets to see a lot of candies. Look at these jars of different type of candies.



(a) What is the total number of  jars?

4 × 5 = 20

(b) What is the total number of  jars?

5 × 6 = 30

(c) What is the total number of  jars?

10 × 5 = 50

(d) Each jar costs ₹ 50. If she buys two jars of each type, what amount will she pay?

2 × ₹ 20 + 2 × ₹ 30 + 2 × ₹ 50 = ₹ 40 + ₹ 60 + ₹ 100 = ₹ 200

Skills Covered: Observation, Critical and logical thinking, Evaluation, Brainstorming

Quick Check

1. **Fill in the boxes.**

(a) 4 times 7 = 4 × 7 = 28

(b) 5 times 9 = 5 × 9 = 45

(c) 8 × 4 = 4 × 8 = 32

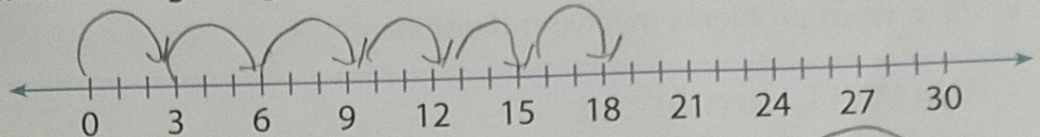
(d) 7 × 8 = 8 × 7 = 56

(e) 9 × 2 = 2 × 9 = 18

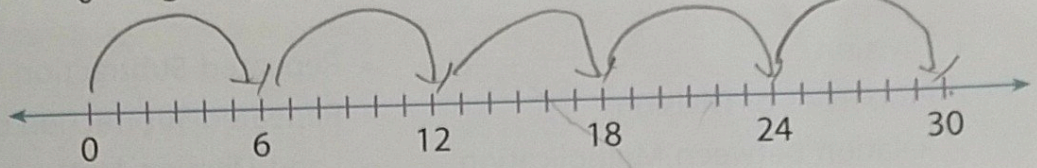
(f) 10 × 5 = 5 × 10 = 50

2. **Multiply the numbers using the given number line.**

(a) 8 times 3



(b) 5 times 6



3. **Find the product.**

(a) 32 × 3 = 96

(b) 124 × 6 = 744

(c) 106 × 5 = 530

(d) 40 × 20 = 800

(e) 105 × 3 = 315

(f) 20 × 30 = 600

4. **Solve the given word problems.**

(a) Riya has 6 chalk boxes. Each box has 8 chalks. How many chalks does Riya have in all?

Riya has 48 chalks in all.

	T	O
		6
×		8
	4	8

(b) In a school, there are 45 students in each class. Find the number of students in 6 classes.

There are 270 students in 6 classes.

	H	T	O
		3 4	5
×			6
	2	7	0

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Multiplication

(a)

	T	O
		7
X		3
	2	1

(b)

	T	O
		3
		8
	2	4

(c)

	T	O
		7
X		7
	4	9

(d)

	T	O
		4
X		6
	2	4

(e)

	T	O
	1	2
X		3
	3	4

(f)

	T	O
	7	7
X		7
	7	7

(g)

	T	O
	4	0
X		2
	8	0

(h)

	T	O
	1	8
X		5
	9	0

Q2 Multiply the given numbers.

(a)

	H	T	O
	4	2	3
X			2
	8	4	6

(b)

	H	T	O
	2	1	2
X			3
	6	3	6

(c)

	H	T	O
	2	3	0
X			2
	4	6	0

Q3 There are 15 crayons in a set of crayons. If Hina bought 7 such sets of crayons ... how many crayons does she have in

all?

Number of carryons in one set = 15

Number of sets = × 7

Total no of carryons = 105

Hina has 105 crayons in 7 sets.

Q4. Amandeep has 15 picture albums. In each album, 20 pictures can be pasted. How many pictures can amandeep paste in these 15 albums?

No of pictures in each album = 20

No of albums × 15

Total no of picture 100 + 200 = 300

Nitin
17/8/24