Unit 2

Numbers

Objectives

By the end of this unit you should be able to:

- perform operations involving addition with carrying and without carrying
- perform operations involving subtraction with borrowing and without borrowing
- perform operations involving multiplication
- perform operations involving division
- solve problems involving the four arithmetic operations

Unit 2 **Numbers**

Addition

```
AAA SUPERMARKET

Milk Podwer   200.00
Tea            60.00
Sugar          40.00
             _____
Total         300.00
```

Key words

Add
Sum
Total
In all
Altogether
How many

Electricity Bill

STATEMENT OF ACCOUNT	AMOUNT (Rs)
Consumption Charges	300.00
Meter Rental	10.00
TV License Fee	100.00
Total Amount	**410.00**

Name	Term I (20 marks)	Term II (30 marks)	Term III (50 marks)	Total 100 marks
Harry	10	15	22	**47**
Cédric	15	18	36	**69**
Céline	19	28	42	**89**
Anwar	12	19	30	**61**

Addition

The total number of students in Form I are shown below.

Class	Number of students
Form I A	24
Form I B	32
Total	**56**

$$\begin{array}{r} 2\ 4 \\ +\ 3\ 2 \\ \hline 5\ 6 \end{array}$$

24   32   24 + 32 = 56

and
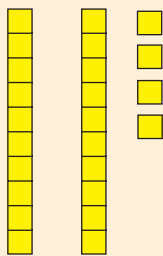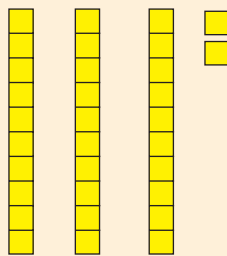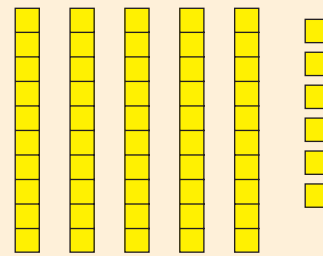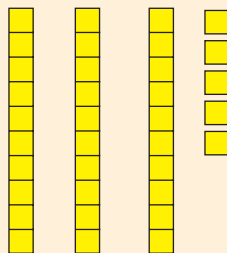
The total number of students in Form II are shown below.

Class	Number of students
Form II A	27
Form II B	35
Total	**62**

$$\begin{array}{r} \overset{1}{2}\ 7 \\ +\ 3\ 5 \\ \hline 6\ 2 \end{array}$$

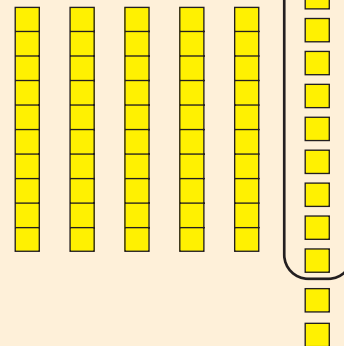27   35   27 + 35 = 62

and
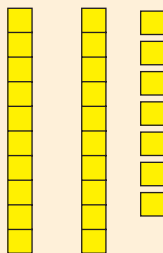
Unit 2 Numbers

1. Perform the following additions.

(a) 27 + 12 =

(b) 32 + 40 =

(c) 20 + 30 =

(d) 66 + 33 =

(e) 54 + 27 =

(f) 29 + 17 =

(g) 65 + 25 =

(h) 47 + 56 =

Addition

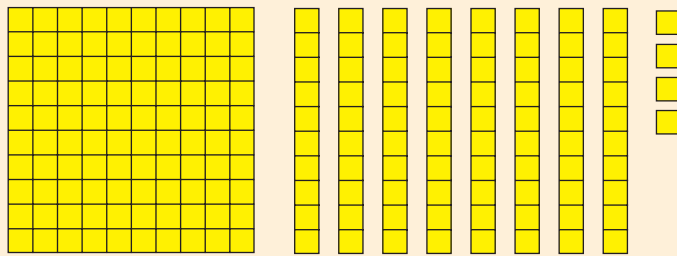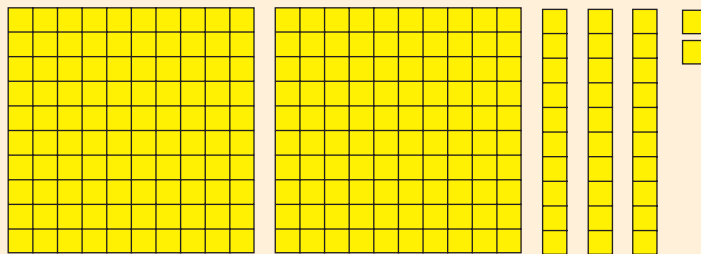## Addition involving 3-digit numbers

Study the addition below.

Items	Costs (Rs)
Milk Powder (2 Kg)	184
Washing Machine Powder (4 Kg)	232
Total	**416**

$$\begin{array}{r} 1 \\ 1\,8\,4 \\ +\,2\,3\,2 \\ \hline 4\,1\,6 \end{array}$$
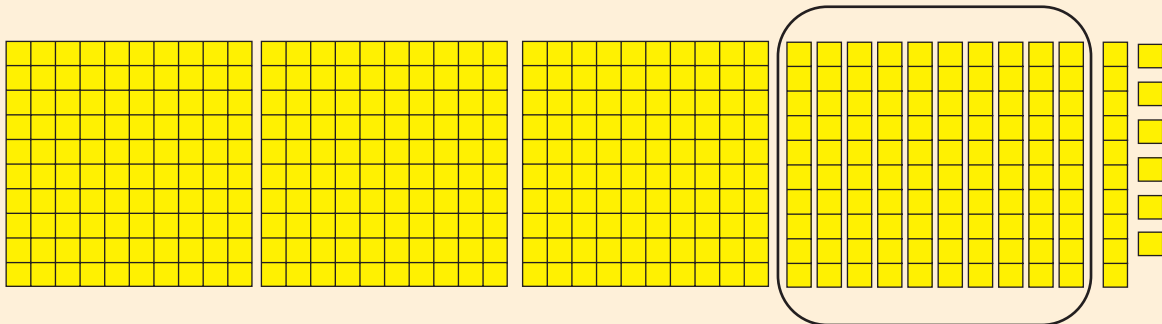
184

232

184 + 232 = 416

Unit 2 Numbers

2. **Work out the following additions.**

(a) 137 + 68 =   (b)   125 + 49 =

(c) 49 + 137=   (d)   27 + 221 =

(e) 125 + 497 =   (f)   536 + 289 =

(g) 258 + 195 =   (h)   343 + 289 =

(i) 605 + 217 =   (j)   209 + 388 =

3. **Mary has 12 books. Raja gives her 15 more books. How many books does Mary have altogether?**

4. **Raj has Rs 225. Devi has Rs 187. How much money do they have in all?**

Addition

5. A bag contains 105 red balls and 317 blue balls. How many balls are there in all in the bag?

6. A fruit seller sold 227 apples, 139 oranges and 240 kiwis on a certain day. Find the total number of fruits he sold on that day.

7. When a number is reduced by 225 the result is 349. Find the number.

8. The table below shows the number of apples and the number of oranges Adil and Marie bought during a year.

	Apples	Oranges
Adil	175	158
Marie	123	219

Study the table and answer the following questions:

(a) How many fruits did Adil buy altogether?

(b) How many fruits did Marie buy in all?

(c) What is the total number of fruits Adil and Marie bought?

Unit 2 Numbers

9. **The table below shows the number of students admitted in a primary school and a secondary school in year 2009 and in year 2010.**

| Year School	2009	2010
Primary	128	109
Secondary	204	197

(a) How many students altogether were admitted in

(i) the primary school in 2009 and 2010?

(ii) the secondary school in 2009 and 2010?

(b) In which year were more students admitted in the two schools?

(c) Find the total number of students admitted in the primary and secondary schools in 2009 and 2010?
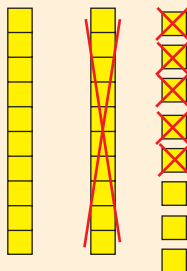
Subtraction

Subtraction without borrowing

Example 1: 28 – 15

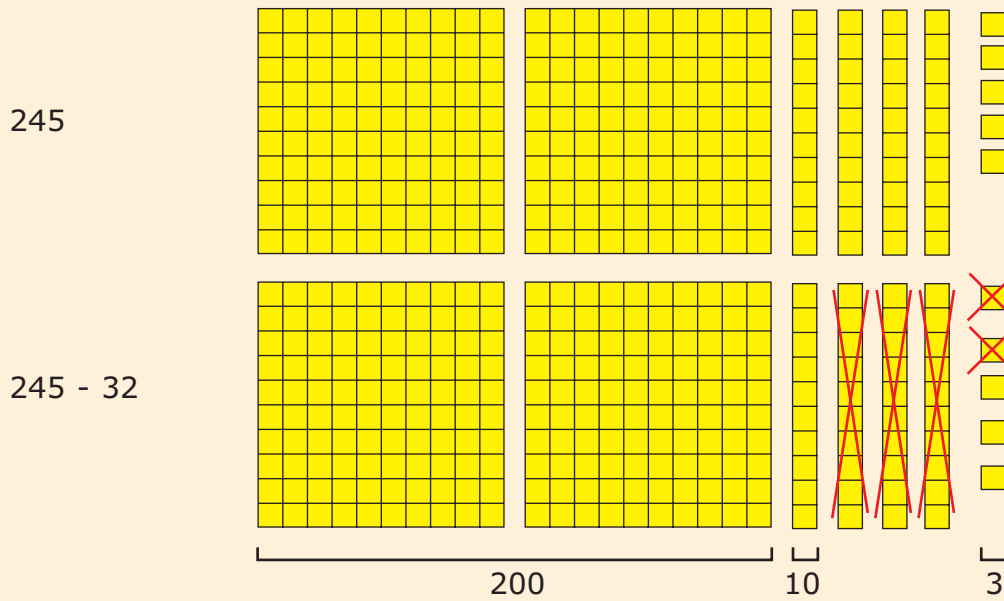28 can be represented as follows:
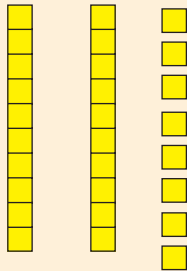
15 consists of 1 ten and 5 units.

```
   2 8
 – 1 5
 ─────
   1 3
```

Key words
Subtract
Left
Difference
Minus
Fewer

Example 2: 245 – 32

245

245 - 32

200   10   3

H	T	U
2	4	5
–	3	2
2	1	3

```
   2 4 5
 –   3 2
 ───────
   2 1 3
```

Unit 2 Numbers

1.   **Work out the following subtraction.**

    (a)   1 5 7
         – 2 4

    (b)   3 4 8
         – 3 5

    (c)   5 9 4
         – 7 1

2.   (a)   2 5 8
        – 1 3 4

    (b)   4 7 5
        – 2 5 0

    (c)   6 9 7
        – 4 0 5

3.   (a)   4 0 3
        – 1 0 2

    (b)   5 0 7
        – 2 0 5

    (c)   7 5 6
        – 3 5 4

4.   **Find the missing digit in each box.**

    (a)   9 7 5
        – 4 ☐ 3
          5 3 ☐

    (b)   ☐ 3 ☐
        – 1 2 5
          6 ☐ 2

    (c)   ☐ ☐ 5
        – 3 2 ☐
          1 2 5

Subtraction

Subtraction with borrowing

Example: 324 − 173

324
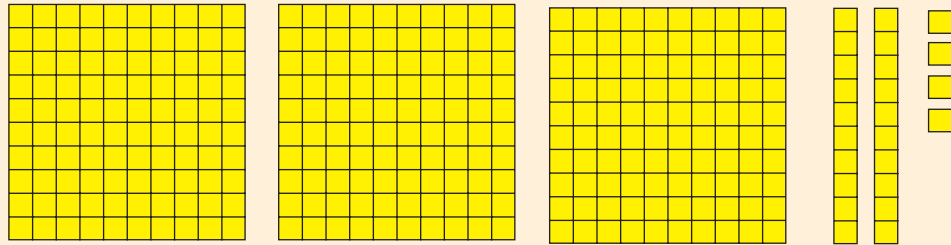
173 = 100 + 70 + 3

We have to remove : (i)   3 units

(ii) 7 tens block

(iii) a one-hundred block

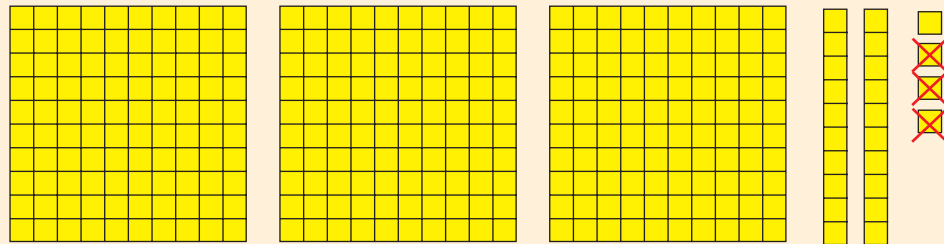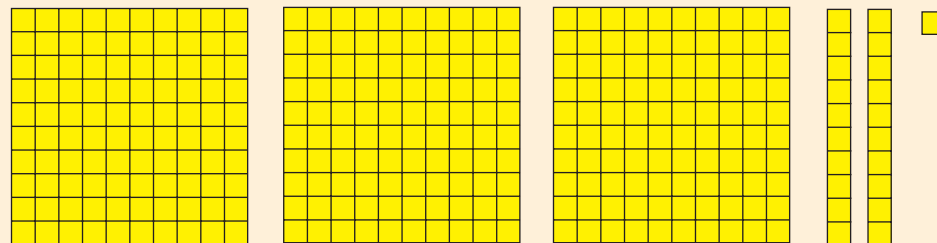**Step 1: Remove 3 units**

We are left with the following.

Unit 2 **Numbers**

Subtraction with borrowing

Step 2: Remove 7 tens blocks

We have only 2 tens block. So, we borrow from the hundreds.
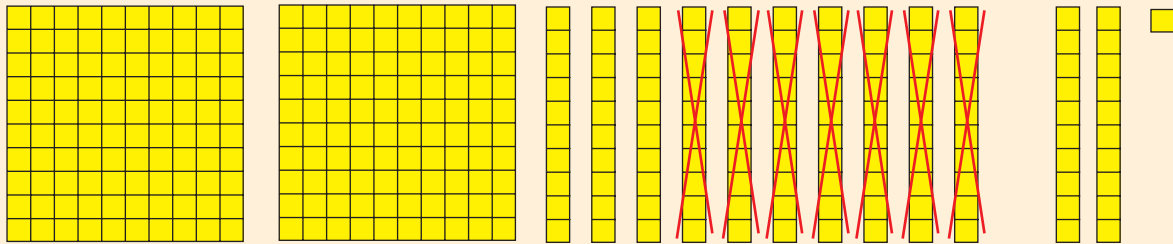
We are left with the following:
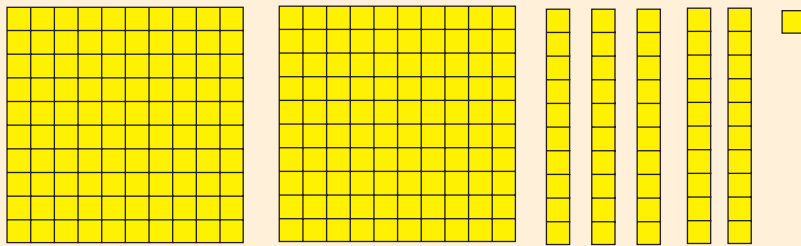
Step 3: Remove a one-hundred block

We are left with the following:

100   50   1
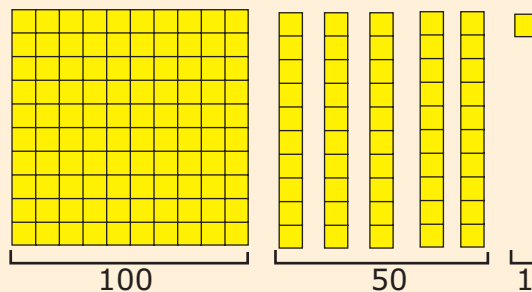
H	T	U
$\overset{2}{\cancel{3}}$	$\overset{10}{2}$	4
− 1	7	3
1	5	1

$$\begin{array}{r} \overset{2}{\cancel{3}}\ \overset{10}{2}\ 4 \\ -\ 1\ 7\ 3 \\ \hline 1\ 5\ 1 \end{array}$$

Subtraction

1. (a)
```
   6 3
 − 1 5
 ─────
 ─────
```
(b)
```
   4 2
 − 2 7
 ─────
 ─────
```
(c)
```
   6 1
 − 3 5
 ─────
 ─────
```

2. (a)
```
   8 6
 − 3 9
 ─────
 ─────
```
(b)
```
   1 3 5
 −   1 8
 ───────
 ───────
```
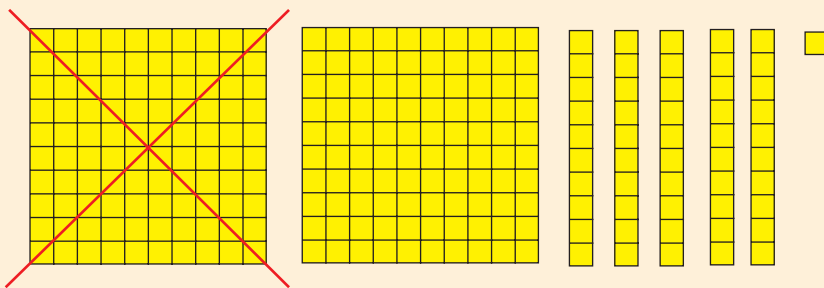(c)
```
   3 5 4
 −   3 7
 ───────
 ───────
```

3. (a)
```
   2 5 4
 − 1 3 8
 ───────
 ───────
```
(b)
```
   3 2 1
 − 2 1 6
 ───────
 ───────
```
(c)
```
   6 5 4
 − 4 2 9
 ───────
 ───────
```

4. Lim has 89 eggs. He sells 35 eggs. How many eggs has he left?

5. In a class there are 32 students. 15 of them are boys. How many girls are there in the class?

6. Vanita has 254 beads. She gives 138 to Lolita. How many beads has she left?

7. The teacher brings 525 balloons at school. He distributes 217 balloons among his students. How many balloons are left?

8. In a school there are 648 students. 375 students go on an outing. How many students stay at school?

Unit 2 Numbers

Subtraction Involving Zero

Study the following subtractions.

(i)   **425 − 103** =

H	T	U
4	2	5
− 1	0	3
3	2	2

(ii) **532 − 120** =

H	T	U
5	3	2
− 1	2	0
4	1	2

(iii) **405 − 214** =

H	T	U
³4̸	¹⁰0	5
− 2	1	4
1	9	1

(iv) **360 − 253** =

H	T	U
3	⁵6̸	¹⁰0
− 2	5	3
1	0	7

Subtraction

1. (a)　　2 3 5　　　　　(b)　　3 0 5　　　　　(c)　　7 0 0
　　　　– 1 0 4　　　　　　　– 2 0 3　　　　　　　– 3 0 0
　　　　‾‾‾‾‾‾‾　　　　　　　‾‾‾‾‾‾‾　　　　　　　‾‾‾‾‾‾‾

2. (a)　　2 0 5　　　　　(b)　　5 3 0　　　　　(c)　　3 0 2
　　　　– 1 2 5　　　　　　　– 2 1 7　　　　　　　– 1 7 1
　　　　‾‾‾‾‾‾‾　　　　　　　‾‾‾‾‾‾‾　　　　　　　‾‾‾‾‾‾‾

3. (a)　　4 0 0　　　　　(b)　　9 0 7　　　　　(c)　　8 7 0
　　　　– 3 1 0　　　　　　　– 4 2 7　　　　　　　– 6 3 5
　　　　‾‾‾‾‾‾‾　　　　　　　‾‾‾‾‾‾‾　　　　　　　‾‾‾‾‾‾‾

4. Jim has Rs 470. He spends Rs 225 on books. How much money has he left?

5. Mila has Rs 609. She pays Rs 327 for goods bought at a supermarket. How much money has she left?

Unit 2 **Numbers**

Multiplication

Study the following sets of objects.

The total number of eyes = 2+2+2

or 3 sets of 2 eyes

or 3 times 2

and we write 3 x 2
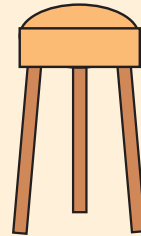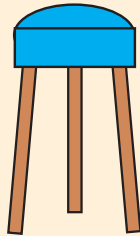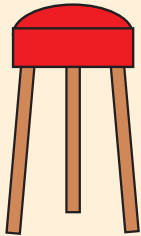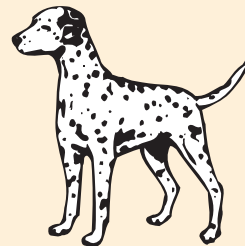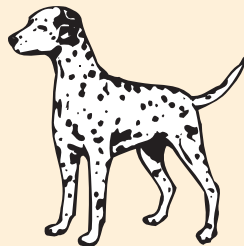
Total number of legs = 3 x 3

or 3 sets of 3 legs

or 3 times 3

and we write 3 x 3

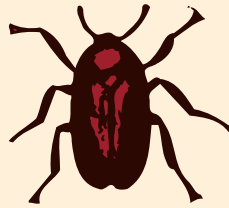Total number of legs = 3 x 4

Total number of arms = 3 x 5

Multiplication

Multiplication

Total number of legs = 3 x 6
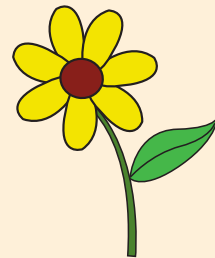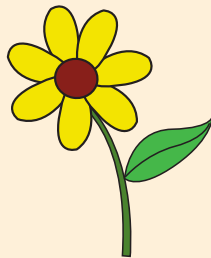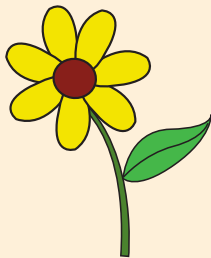
Total number of petals = 3 x 7
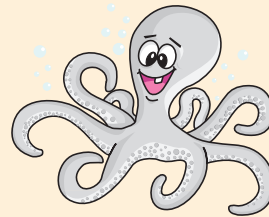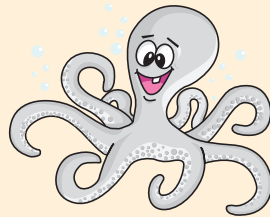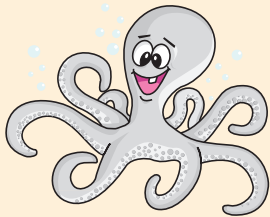
Total number of legs = 3 x 8
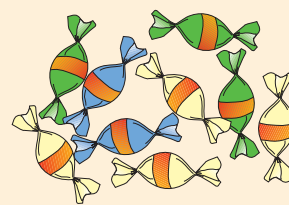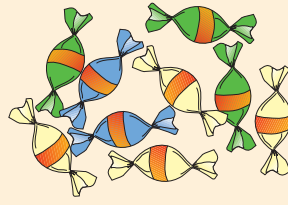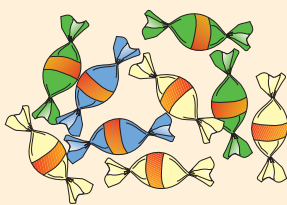
Total number of sweets = 3 x 9
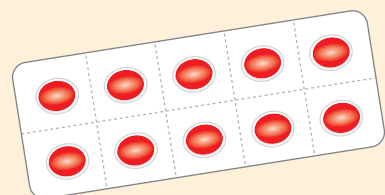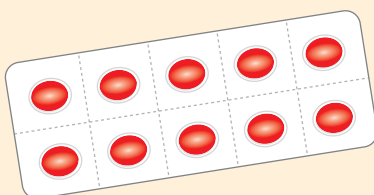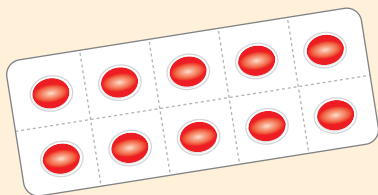
Total number of pills = 3 x 10

Unit 2 **Numbers**

Multiplication

Multiplication Tables

Table 2	**Table 3**	**Table 4**
1 x 2 = 2	1 x 3 = 3	1 x 4 = 4
2 x 2 = 4	2 x 3 = 6	2 x 4 = 8
3 x 2 = 6	3 x 3 = 9	3 x 4 = 12
4 x 2 = 8	4 x 3 = 12	4 x 4 = 16
5 x 2 = 10	5 x 3 = 15	5 x 4 = 20
6 x 2 = 12	6 x 3 = 18	6 x 4 = 24
7 x 2 = 14	7 x 3 = 21	7 x 4 = 28
8 x 2 = 16	8 x 3 = 24	8 x 4 = 32
9 x 2 = 18	9 x 3 = 27	9 x 4 = 36
10 x 2 = 20	10 x 3 = 30	10 x 4 = 40

Complete the multiplication tables below.

Table 5	**Table 6**	**Table 7**
1 x 5 =	1 x 6 =	1 x 7 =
2 x 5 =	2 x 6 =	2 x 7 =
3 x 5 =	3 x 6 =	3 x 7 =
4 x 5 =	4 x 6 =	4 x 7 =
5 x 5 =	5 x 6 =	5 x 7 =
6 x 5 =	6 x 6 =	6 x 7 =
7 x 5 =	7 x 6 =	7 x 7 =
8 x 5 =	8 x 6 =	8 x 7 =
9 x 5 =	9 x 6 =	9 x 7 =
10 x 5 =	10 x 6 =	10 x 7 =

Multiplication

Table 8	Table 9	Table 10
1 x 8 =	1 x 9 =	1 x 10 =
2 x 8 =	2 x 9 =	2 x 10 =
3 x 8 =	3 x 9 =	3 x 10 =
4 x 8 =	4 x 9 =	4 x 10 =
5 x 8 =	5 x 9 =	5 x 10 =
6 x 8 =	6 x 9 =	6 x 10 =
7 x 8 =	7 x 9 =	7 x 10 =
8 x 8 =	8 x 9 =	8 x 10 =
9 x 8 =	9 x 9 =	9 x 10 =
10 x 8 =	10 x 9 =	10 x 10 =

Multiplication by a 1-digit number.

Example

Example 1:

24 x 3

In expanded form, 24 = 20 + 4

	20	4
3	3 x 20 = **60**	3 x 4 = **12**

24 x 3 = 60 + 12 = 72

```
  24
x  3
  12
  60
  72
```

```
  ¹
  24
x  3
  72
```

Example 2:

253 x 4

In expanded form, 253 = 200 + 50 + 3

	200	50	3
4	4x200= **800**	4x50= **200**	4x3= **12**

253 x 4 = 800 + 200 + 12

= 1012

```
  253
x   4
   12
  200
  800
 1012
```

```
  ² ¹
  253
x   4
 1012
```

Unit 2 **Numbers**

Multiplication Involving Zero

A number multiplied by **0** is **0**.

1 x 0 = 0	0 x 1 = 0
2 x 0 = 0	0 x 2 = 0
3 x 0 = 0	0 x 3 = 0

Commutative Property

Example 1:   2 x 5 = 10   5 x 2 = 10

Observe that 2 x 5 = 5 x 2.

Example 2:   3 x 7 = 21   7 x 3 = 21
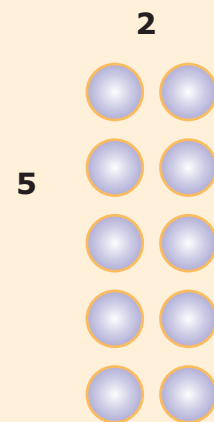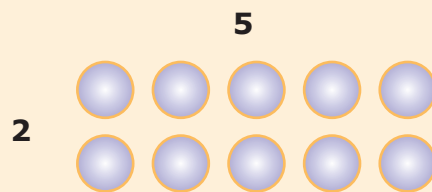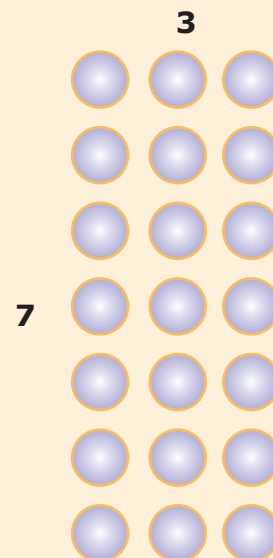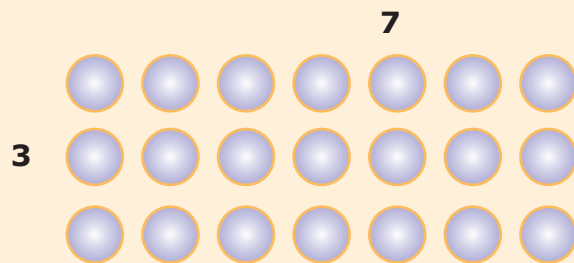
Observe that 3 x 7 = 7 x 3.

Multiplication

1. **Work Out**

   (a) 10 x 3 =   (f) 30 x 7 =

   (b) 11 x 5 =   (g) 17 x 9 =

   (c) 12 x 8 =   (h) 37 x 7 =

   (d) 15 x 6 =   (i) 86 x 3 =

   (e) 25 x 3 =   (j) 56 x 8 =

2. **Work Out**

   (a) 178 x 9 =   (b) 123 x 6 =

   (c) 256 x 8 =   (d) 363 x 5 =

   (e) 401 x 7 =   (f) 320 x 9 =

3. **Find the weight of 7 bags of carrots if each bag weighs 43 kg.**

4. **Father earns Rs 637 a day. Find his salary for six days.**

5. **Your teacher wishes to buy a pen for each student in the class. A pen costs Rs 8.00 and there are 25 students in the class. Find how much money your teacher needs.**

7. **How many pins are there in 7 boxes if there are 612 pins in each box?**

8. **A bus can carry 53 passengers on a trip. How many passengers can 9 such buses carry if each bus does 2 trips?**

Unit 2 Numbers

Division

Division arises as a result of sharing or grouping.

Example 1:

> **Form I red**
>
> Number of students = 30
>
> 6 students make a team

The teacher groups the students in teams of 6. How many teams can be made?
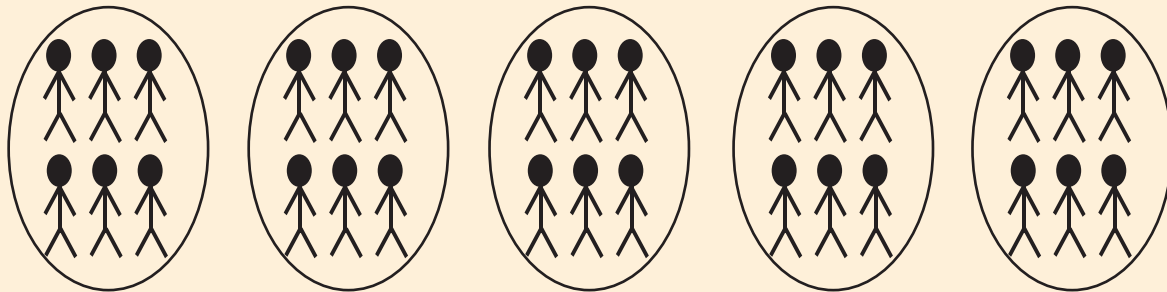
$$30 \div 6 = 5 \quad \text{or} \quad \frac{30}{6} = 5 \quad \text{or} \quad 6\overline{)30} \, 5$$

The teacher can make 5 teams.

Example 2:

> **Form I blue**
>
> Number of students = 30
>
> Number of teams = 5

The teacher makes five teams.

How many students are there in each team?

$$30 \div 5 = 6 \quad \text{or} \quad \frac{30}{5} = 6 \quad \text{or} \quad 5\overline{)30} \, 6$$

Each team has 6 students.

Division

Relationship between multiplication and division

Study the multiplication below and the corresponding divisions.

5 x 6 = 30,   30 ÷ 6 = 5   and 30 ÷ 5 = 6
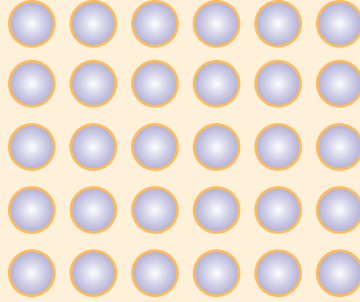
In a similar way,

(i)   3 x 2 = 6,   6 ÷ 2 = 3   and 6 ÷ 3 = 2

(ii)   6 x 4 = 24,   24 ÷ 4 = 6   and 24 ÷ 6 = 4

(iii) 5 x 7 = 35,   35 ÷ 7 = 5   and 35 ÷ 5 = 7

Example

Example 1

68 ÷ 2

$$2\overline{)68}$$

To perform division,
we start from the **left**.

How many 2's are there in 6? 3.

$$2\overline{)68} \quad 3$$

How many 2's are there in 8? 4.

$$2\overline{)68} \quad 34$$

68 ÷ 2 = 34.

Example 2

168 ÷ 2

$$2\overline{)168}$$

How many 2's are there in 1? 0

$$2\overline{)168} \quad 0$$

So, we divide 16 by 2 to obtain 8.

$$2\overline{)168} \quad 08$$

Then we divide 8 by 2 to obtain 4.

$$2\overline{)168} \quad 084$$

168 ÷ 2 = 84.

Unit 2 Numbers

1.   **Work out**

(a)   48 ÷ 4 = _____

(b)   248 ÷ 4 = _____

(c)   129 ÷ 3 = _____

(d)   279 ÷ 3 = _____

(e)   486 ÷ 6 = _____

2.   **On his birthday, Sunil buys 28 sweets and shares them equally among his 4 friends. How many sweets does each friend get?**

Division

3. **45 marbles are shared equally among 5 boys. How many marbles does each boy get?**

4. **Kevin has Rs 96. He buys exercise books, each costing Rs 8. How many exercise books does he get?**

5. **92 grapes were distributed equally to the students of Form I. Each student got 4 grapes. How many students were there in the class?**

Division Involving Zero

Example 1: $0 \div 2$

How many sets of 2 in 0?

Answer : 0

Example 2:

$4 \,|\, 2\ 0\ 8$
$\quad \boxed{\ }\boxed{\ }\boxed{\ }$

How many 4's are there in 2? 0

$4 \,|\, 2\ 0\ 8$
$\quad \boxed{0}\boxed{\ }\boxed{\ }$

So we divide 20 by 4 to obtain 5.

$4 \,|\, 2\ 0\ 8$
$\quad \boxed{0}\boxed{5}\boxed{\ }$

Then we divide 8 by 4 to obtain 2.

$4 \,|\, 2\ 0\ 8$
$\quad \boxed{0}\boxed{5}\boxed{2}$

$208 \div 4 = 52$

Unit 2 Numbers

1. Work out

(a)   0 ÷ 2   (b)   105 ÷ 5

(c)   240 ÷ 2   (d)   500 ÷ 5

(e)   808 ÷ 4   (f)   900 ÷ 3

Division involving remainder

There are 14 children in a class.They are playing a game in groups of 4.

(i) How many groups of children are playing?

(ii) How many children are not playing?

group of 4   group of 4   group of 4   2 left

14 ÷ 4 or 4⟌14
            3 Remainder 2

(i) 3 groups of children are playing.

(ii) 2 children are not playing.

Division

1. **Perform the following division and find the remainder.**

   (a)   21 ÷ 5 =

   (b)   20 ÷ 7 =

   (c)   19 ÷ 9 =

   (d)   65 ÷ 3 =

   (e)   79 ÷ 6 =

2. **73 oranges are packed in trays of 6.**

   (a)   How many trays of oranges are obtained?

   (b)   How many oranges are left over?

3. **99 stickers are shared equally among 8 boys.**

   (a)   How many stickers does each boy get?

   (b)   How many stickers are left over?

4. **How many teams, each of 7 children, can be formed from a group of 89?**

   (a)   How many children are left over?

   (b)   How many more children are needed to form another team?

5. **In a hall, 86 chairs are arranged in rows of 9?**

   (a)   How many rows of chairs are there?

   (b)   How many chairs are left over?

Unit 2 Numbers

Continuous Assessment

Addition

1.   Perform the following addition

(a)   243 + 76 =

(b)   196 + 932 =

(c)   556 + 480 =

(d)   345 + 299 =

(e)   515 + 151 =

2.   Find the sum of

(a)   659 and 418

(b)   738 and 675

(c)   533 and 401

3.   The table shows the number of breads sold by a shopkeeper on different days.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Number of breads sold	72	84	70	75	75

(a)   Find the number of breads sold on the first three days.

(b)   How many breads were sold on Tuesday and Friday?

(c)   How many breads were sold altogether during the five days?

Continuous Assessment

4. **A post office sold 526 and 437 stamps in two months. How many stamps were sold in all?**

5. **A sack of rice weighs 37 kg. A sack of maize weighs 17 kg more than the sack of rice. Calculate**

    (a)   the weight of the sack of maize.

    (b)   the total weight of the two sacks.

6. **After losing 76 marbles in a game, Jenna had 273 marbles left. How many did she have at first?**

Unit 2 **Numbers**

Subtraction

1. Work out

(a) 248 − 135 =

(b) 877 − 53 =

(c) 665 − 427 =

2. Find the missing number

(a) 653 - ☐ = 221

(b) 480 - ☐ = 224

3. The table shows the total number of pupils in a primary and a secondary school in a village.

	Number of boys	Number of girls	Total
Primary School		2510	5100
Secondary School	1245		2649

Calculate the number of

(a) girls in the secondary school

(b) boys in the primary school

(c) pupils in the primary and secondary school altogether.

Continuous Assessment

4. Subtract seven hundred and thirty five from nine hundred and fifty six.

5. A shopkeeper had 365 articles in stock. He sold 147. How many articles were left?

6. Find the difference between

    (a)   176 and 380.

    (b)   548 and 265.

7. Bag A contains 135 beads. Bag B contains 70 beads fewer than Bag A. Find

    (a)   the number of beads in bag B.

    (b)   the total number of beads in the two bags.

8.   A girl has Rs 75. How much more money does she need to buy a bag costing Rs 235?

Unit 2 Numbers

Multiplication

1. **Work Out**

(a)   3 2 4   (b)   5 9 0   (c)   4 8 6
          x 7   x 8   x 9
      ____   ____   ____

(d)   2 1 3   (e)   1 7 5
          x 5   x 6
      ____   ____

2. **A basket contains 385 mangoes. How many mangoes will 6 such baskets contain?**

3. **The table below shows the number of pupils in Prevocational Year 1, Year 2 and Year 3 of a certain school and the number of sections.**

	Prevoc Yr 1	Prevoc Yr 2	Prevoc Yr 3
Number of pupils in each section	57	45	38
Number of sections	3	4	5
Total number of pupils			

4. **In a class there are 27 pupils. Each pupil has 8 books and 6 copy books.**
    Calculate

(a)   how many books they have in all.

(b)   how many copy books they have altogether.

(c)   the total number of books and copy books.

Continuous Assessment

5. In a cinema hall there are 37 rows with 9 seats and 42 rows with 7 seats. Calculate the total number of seats in the cinema hall.

6. Work out

    (a) 24 ÷ 4 =   (b) 264 ÷ 7 =   (c) 630 ÷ 9 =

    (d) 0 ÷ 21 =   (e) 108 ÷ 3 =   (f) 480 ÷ 8 =

7. At a sports competition, 135 runners are grouped in teams of 9. How many teams are obtained?

8. 84 pencils are shared equally among 7 girls. How many pencils does each girl receive?

9. Mr Lim has 428 candles. He packs them in bundles of 6.

    (a) How many bundles does he get?

    (b) How many candles are left over?

10. Ali has 69 candies to pack. He makes 5 packets with the same number of candies in each packet. 4 candies are left. How many candies are there in each packet?

Unit 2 Numbers

Profiling

Numbers - Four Arithmetic Operations

		Good	Satisfactory	Needs improvement
1.	Add without carrying (3 digits)			
2.	Add with carrying (3 digits)			
3.	Solve word problems involving addition			
4.	Subtract without borrowing (3 digits)			
5.	Subtract with borrowing (3 digits)			
6.	Solve word problems involving subtraction			
7.	Multiply by a 1 digit number			
8.	Divide by a 1 digit number			
9.	Perform division involving remainder			
10.	Solve word problems involving multiplication and division			

Student's Progress

Teacher's Comments

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Signature of parent: ………………………….