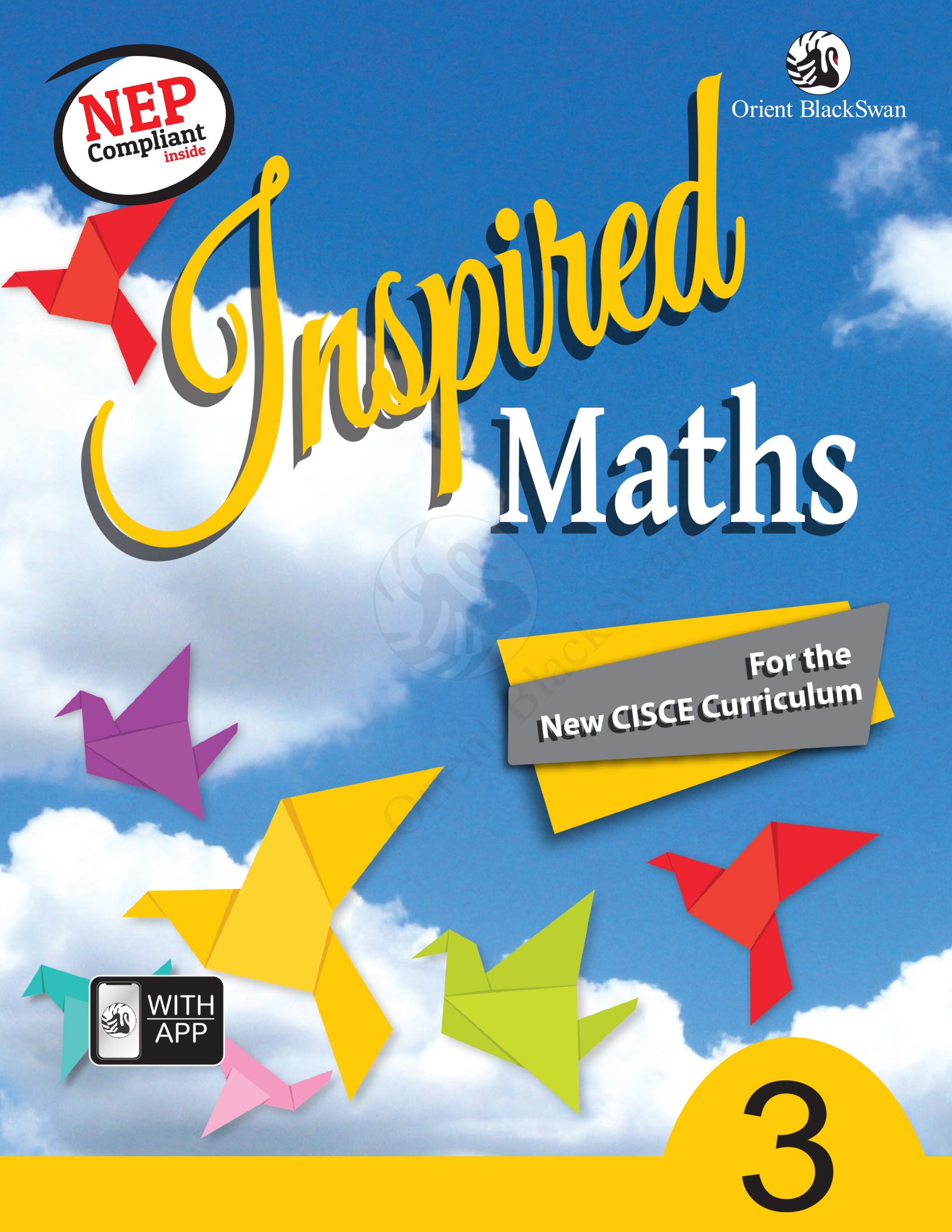
NEP
Compliant
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Orient BlackSwan
Inspired
Maths
For the
New CISCE Curriculum
WITH
APP
3

Inspired Maths

has been developed in accordance with

- the pioneering and exciting endeavours and initiatives for the effective teaching and learning of mathematics
- the need for students to develop the skills of problem solving and generating better algorithms, all directed towards developing the right attitude and approach to solving problems in a systematic manner
- sound pedagogical practices that enable students to learn effectively and apply their learning
- the needs of the teacher in the classroom

Students' Textbook

- complete syllabus coverage
- carefully graded text
- appropriate figures and images
- ample rigour to learn, understand and apply concepts and skills

Let's Learn

❖ Text and Exercises

Learning Outcomes

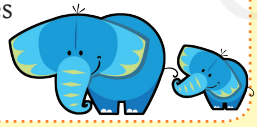
- encourage students to evaluate their progress and take responsibility for their learning

Warm Up

- **Activities** facilitate quick learning and easy understanding of new concepts
- **Recall exercises** help students recall concepts learnt and prepare for new learning

Guided Learning

- step-by-step approach consolidating each concept with solved and semi-solved exercises for guided learning



Activities

- extensively used to develop concepts, enhance skills and application

Variety of Exercises

- concept-based, calculation skill-based and application-based exercises

Common Mistakes

- students discover commonly committed mistakes on their own

Teachers' Resource Pack

- lesson plans for all lessons
- enrichment activities for teaching
- worksheets with answers for all lessons
- question bank with answers for all lessons
- assessment papers

Teachers' Smart Book

exciting and interactive with:

- embedded questions
- animations
- games
- presentations
- worksheets
- question paper generator

Students' App

- more practice for students of classes 3–8

Website

- a portal dedicated to the series with free access for teachers

www.inspiredmaths.com

Workouts

Let's Apply

WORKOUT 1 (Worksheet for concepts and calculation skills)

Concept-based and Calculation skill-based exercises

- to master concepts and calculation skills

Mental Maths

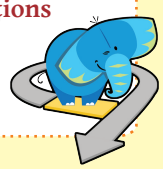
- to develop quick calculation skills

Problem Solving

- improve students' analytical and problem-solving skills

Cross-curricular Questions

- help apply maths to various subjects



Projects and Fun activities

- help students apply what they have learnt to real life and also have some fun

Our Heritage

- includes Vedic maths and yoga

WORKOUT 2 (Worksheet for higher skills)

Multiple Choice Questions

- provide feedback
- contribute to self-learning

Life Skills

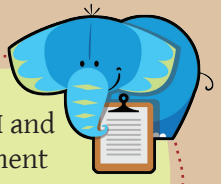
- help students gain self-management, communication, decision making and critical thinking skills

Values

- students understand values like honesty, sharing, ethical behaviour and so on

Assessment

In addition to the **variety of exercises** in the lesson and in the **Workout I** and **Workout II** sections, there are four assessment papers for regular assessment

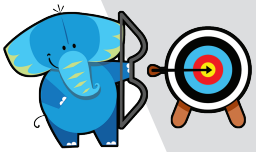


Contents

CHAPTER 1

4-Digit Numbers

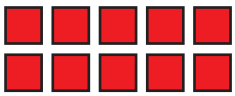
Learning Outcomes



At the end of this lesson, students will be able to:

- read and write 4-digit numbers using place values.
- express 4-digit numbers in expanded form.
- compare two 4-digit numbers and say which is greater/smaller.
- form greatest and smallest numbers with given digits, with and without repetition.

❖ Recall—3-digit numbers



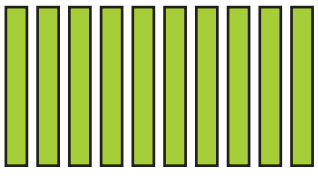
10 ones

are the same as

1 ten

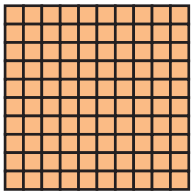
10 ones make 1 ten or 1 ten = 10 ones

Let us represent 1 ten as 



10 tens

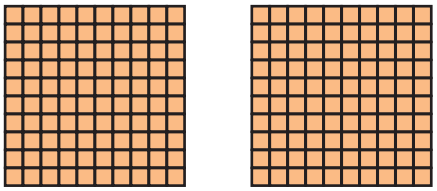
are the same as



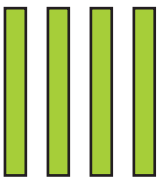
1 hundred

10 tens = 1 hundred

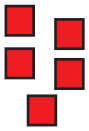
Fill in the blanks.



___ hundreds



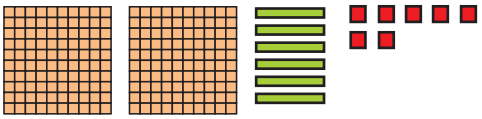
___ tens



___ ones = ____

Exercise 1.1

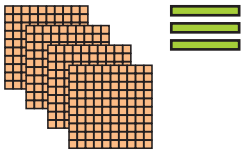
1. Write the numbers.

a) 

_____

b) 

_____

c) 

_____

2. Fill in the blanks and write the number names.

a) 501 = ___ hundreds + ___ tens + ___ one = _____

b) 946 = ___ hundreds + ___ tens + ___ ones = _____

c) 333 = ___ hundreds + ___ tens + ___ ones = _____

d) 240 = ___ hundreds + ___ tens + ___ ones = _____

3. Fill in the blanks and write the numbers.

a) Four hundred nine = ___ hundreds + ___ tens + ___ ones = ☐

b) Three hundred fifty = ___ hundreds + ___ tens + ___ ones = ☐

c) Nine hundred forty-nine = ___ hundreds + ___ tens + ___ ones = ☐

d) Five hundred fifty-four = ___ hundreds + ___ tens + ___ ones = ☐

4. Write in the short form.

a) 500 + 60 + 7 = _____

b) 800 + 90 + 0 = _____

c) 900 + 90 + 9 = _____

d) 6 hundreds + 6 tens + 3 ones = _____

e) 6 hundreds + 6 ones = _____

f) 9 hundreds + 1 ten + 0 ones = _____

5. Write in the expanded form.

a) 638 = ☐ + ☐ + ☐

b) 840 = ☐ + ☐ + ☐

c) 745 = ☐ + ☐ + ☐

d) 805 = ☐ + ☐ + ☐

6. Fill in the symbol <, > or = .

a) 314 ◯ 448

b) 318 ◯ 381

c) 500 ◯ 518

d) 901 ◯ 910

e) 456 ◯ 654

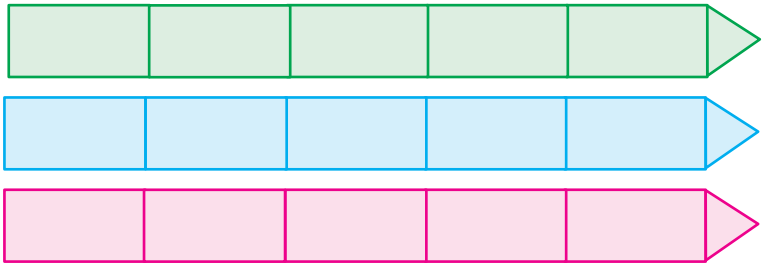
f) 949 ◯ 949

7. **Rewrite in ascending order (smallest to largest).**

a) 342, 43, 423, 234, 99

b) 245, 345, 500, 542, 88

c) 548, 753, 90, 900, 89

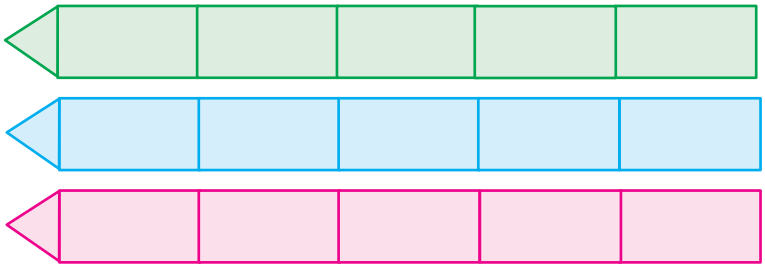


8. **Rewrite in descending order (largest to smallest).**

a) 199, 299, 99, 991, 999

b) 99, 199, 100, 109, 901

c) 788, 865, 901, 109, 87



❖ 4-Digit numbers

Manian has a big collection of stickers.
He has 999 stickers.

His friend Manisha gave him 1 more sticker.

Manian now has 999 + 1 stickers.

999 is 9 hundreds + 9 tens + 9 ones

So, 999 + 1 = 9 hundreds + 9 tens + 9 ones + 1 one

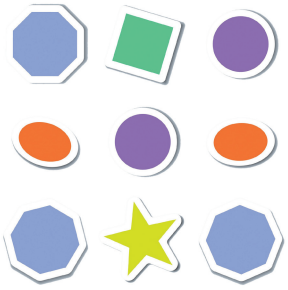
= 9 hundreds + 9 tens + 10 ones

= 9 hundreds + 9 tens + 1 ten

= 9 hundreds + 10 tens

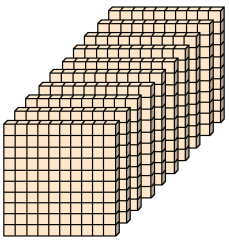
= 9 hundreds + 1 hundred

= 10 hundreds



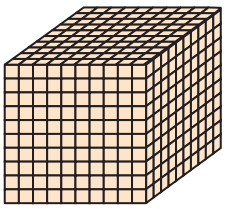
10 hundreds together make **1 thousand**.

If we stack 10 hundreds together we get 1 thousand.



10 hundreds

are the same as



1 thousand

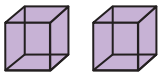
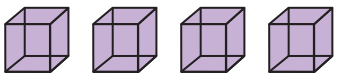
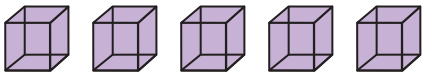
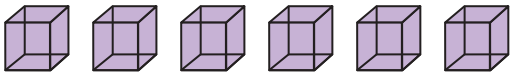
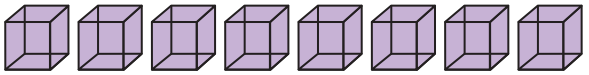
10 hundreds = 1 thousand

One thousand is a 4-digit number. We write one thousand as 1000.

Let us represent 1 hundred as  and 1 thousand as  .

❖ Counting in thousands

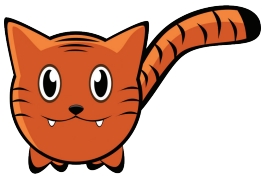
Fill in the blanks.

	1 thousand	1000
	2 thousands	2000
	3 thousands	3000
	4 thousands	_____
	5 thousands	_____
	6 thousands	_____
	7 thousands	_____
	8 thousands	_____
	9 thousands	_____

❖ Forming 4-digit numbers

Manian has one thousand stickers. His mother gave him 1 more sticker.

He now has 1000 + 1 = 1001 stickers.



The number name for 1001 is **one thousand one**.

The number name for 1010 is one thousand ten.

The number name for 1025 is _____.

The number name for 1101 is one thousand one hundred one.

The number name for 1102 is _____.

You can form numbers from 1000 till 9999, just as you did from 100 to 999.

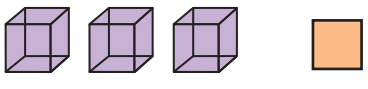
Look at this number.

It is read as two thousand two hundred thirty-one.

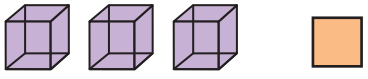
ACTIVITY 1

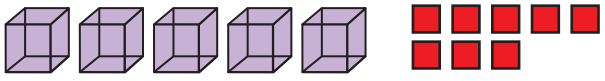
For the teacher: The representations for ones, tens, hundreds and thousands can either be made with cardboard or bought from maths equipment suppliers. Let children use them first to represent the numbers in this exercise, and then do them on paper.

Exercise 1.2: 1. Write the numbers and number names.

a)  = ☐ = _____

b)  = ☐ = _____

c)  = ☐ = _____

d)  = ☐ = _____

2. Represent the following numbers using  ,  ,  and 

a) 2134 b) 5243 c) 1250 d) 2104

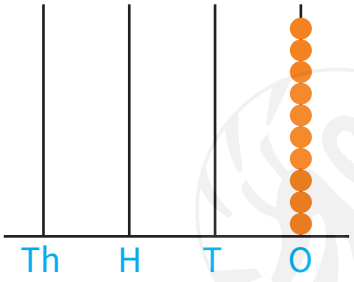
e) 3026 f) 2300 g) 2000 h) 1050

❖ Numbers on the abacus

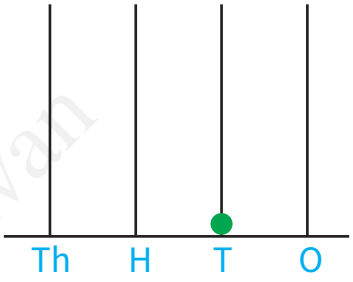
ACTIVITY 2

For the teacher: Let children represent the numbers on pages 5 and 6 and in Exercise 1.3 on an actual abacus, before doing the exercises on paper. This will help clear their concepts.

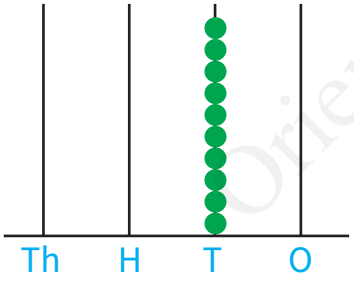
10 ones make one ten



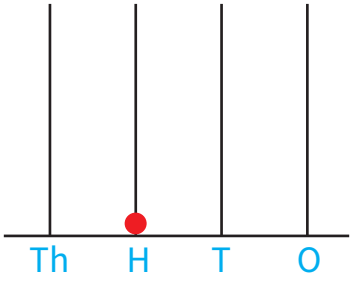
is the same as



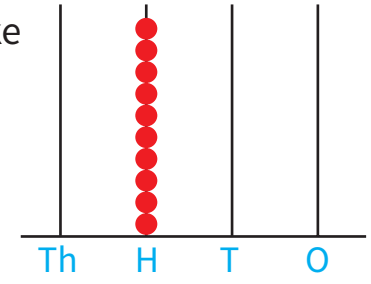
10 tens make one hundred



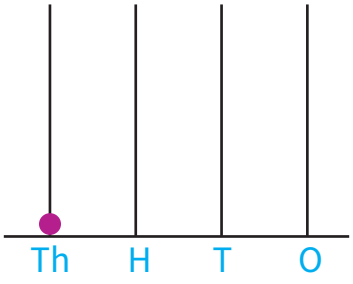
is the same as



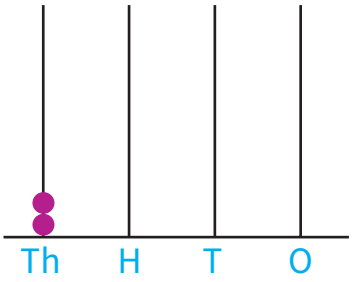
10 hundreds make one thousand



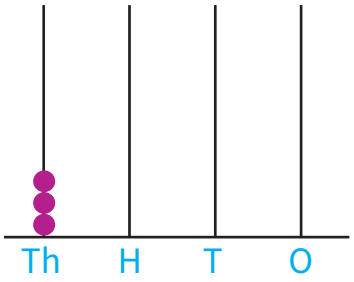
is the same as



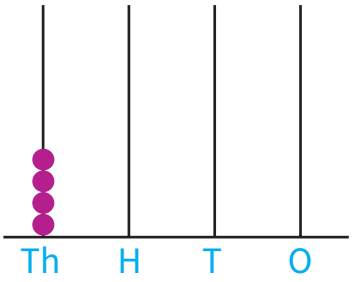
On the abacus 2000, 3000 and 4000 are shown as :



2000

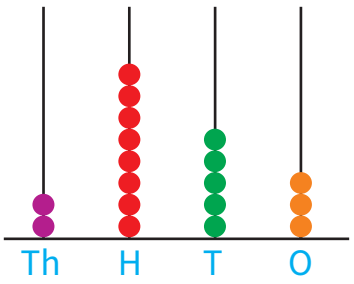


3000



4000

Let us now show the number 2853 on the abacus.



In 2853, there is 3 in the ones place. So we put 3 beads in the ones column.

2853 has 5 in the tens place. We put 5 beads in the tens column.

The digit in the hundreds place is 8. So the hundreds column has 8 beads.

There are 2 thousands in 2853. So we put ___ beads in the thousands column.

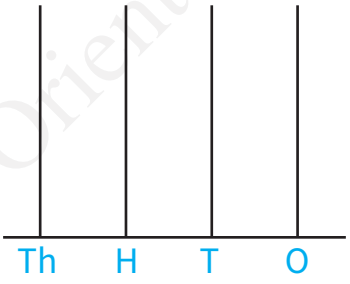
How will you show the number 3017? In 3017 there are:

_____ ones

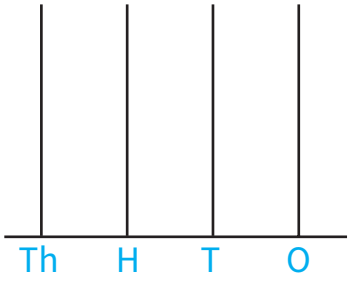
_____ tens

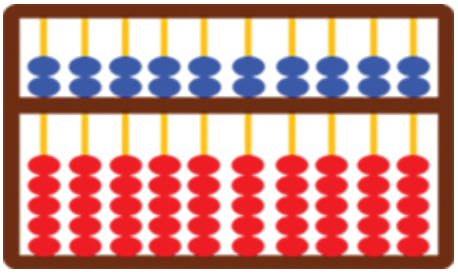
_____ hundreds

_____ thousands



Now show the number 5625 on the abacus.

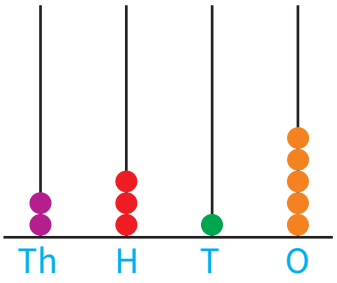




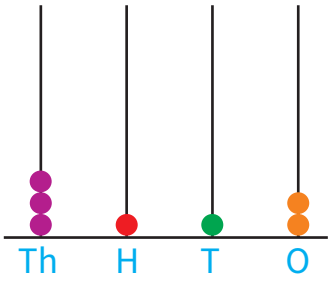
This is a Chinese abacus. It is still used as a calculating tool.

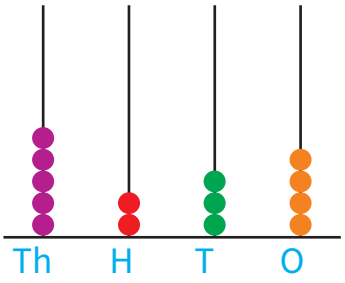
Exercise 1.3

1. Read the abacus and write the numbers and number names as shown in the example.

a) 

2315

b) 

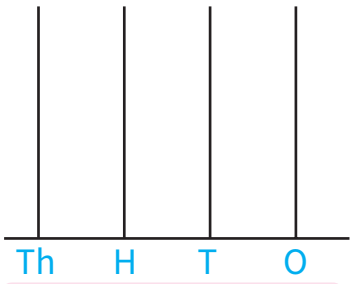
c) 

a) Two thousand three hundred fifteen

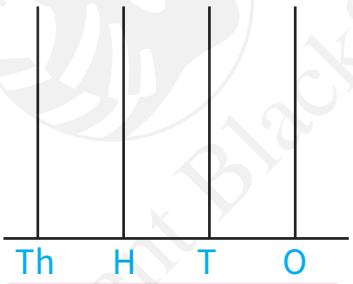
b) _____

c) _____

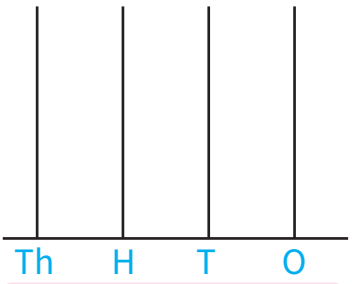
2. Show the numbers on the abacus and write their number names.

a) 

3015

b) 

1603

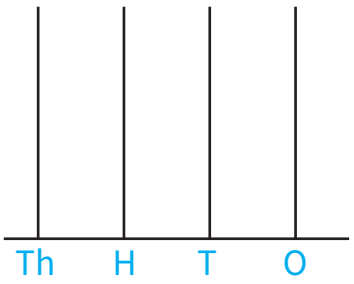
c) 

5003

a) _____

b) _____

c) _____

d) 

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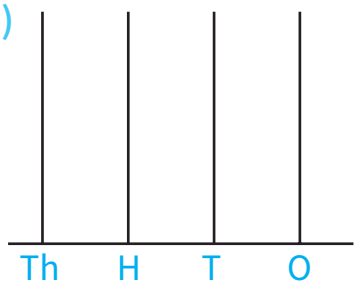
e) 

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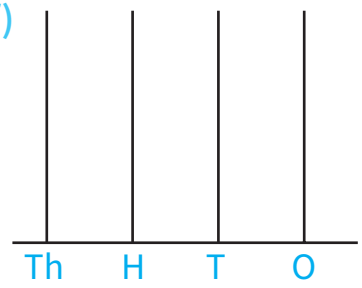
f) 

4576

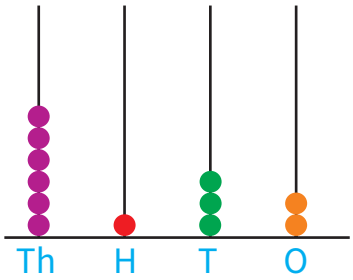
d) _____

e) _____

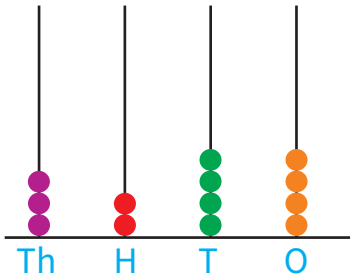
f) _____

3. Read the abacus and write the numbers and their number names.

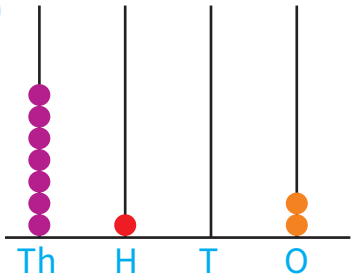
a)



b)



c)



a) _____

b) _____

c) _____

Smallest and largest 4-digit numbers

Study the pattern and fill in the blanks.

- Adding 1 to 9 we get 10. 1 + 9 = 10. Therefore 9 is the largest 1-digit number and 10 is the smallest 2-digit number.
- Adding 1 to 99 we get 100. 1 + 99 = 100. Therefore 99 is the largest 2-digit number and _____ is the smallest 3-digit number.
- Adding 1 to 999 we get 1000. 1 + 999 = 1000. Therefore _____ is the largest 3-digit number and _____ is the smallest 4-digit number.
- The largest 4-digit number is _____.

Exercise 1.4

1. Break up the number as shown.

a) 8003 = 8 thousands 0 hundreds 0 tens 3 ones

b) 7928 = _____ thousands _____ hundreds _____ tens _____ ones

c) 1030 = _____ thousand _____ hundreds _____ tens _____ ones

d) 2179 = _____ thousands _____ hundred _____ tens _____ ones

e) 4325 = _____ thousands _____ hundreds _____ tens _____ ones

2. Write the number for the number name as shown.

		Th	H	T	O
a)	Three thousand four hundred twenty-four	3	4	2	4
b)	Eight thousand five hundred eighty-seven				
c)	Seven thousand one hundred seventy				
d)	Three thousand five hundred twelve				
e)	One thousand seven hundred twenty-one				
f)	Two thousand two hundred three				
g)	Five thousand six hundred three				
h)	Six thousand four hundred fifty-four				
i)	Nine thousand forty-eight				
j)	Eight thousand three hundred twenty-nine				

3. Write the number name.

a) 3789 b) 6501 c) 4283 d) 9192 e) 8308

f) 4230 g) 7424 h) 1068 i) 8935 j) 2698

4. Counting in twos, write the next 5 numbers.

a) 3292 _____ _____ _____ _____ _____

b) 4058 _____ _____ _____ _____ _____

c) 5168 _____ _____ _____ _____ _____

5. Counting in tens, write the next 5 numbers.

a) 4320 _____ _____ _____ _____ _____

b) 3810 _____ _____ _____ _____ _____

c) 7230 _____ _____ _____ _____ _____

6. **Counting in hundreds, write the next 5 numbers.**

a) 7435

b) 5319

c) 3012

7. **Counting in thousands, write the next 5 numbers.**

a) 3826

b) 2032

c) 4444

❖ Place value

Look at the place value chart.

Thousands Th	Hundreds H	Tens T	Ones O
1000	100	10	1

Consider the numbers 1892 and 9128. Arrange them in the place value chart.

	Thousands Th	Hundreds H	Tens T	Ones O
	1000	100	10	1
1892 →	1	8	9	2
9128 →	9	1	2	8

Consider the number **1 8 9 2** →

2 is in the ones place.
Its place value is 2 ones = 2

9 is in the tens place.
Its place value is 9 tens = 90

8 is in the _____ place.
Its place value is 8 hundreds = 800

1 is in the _____ place.
Its place value is 1 _____ = ____

Now, consider the number **9128**

- The place value of **8** is **8**.
- The place value of **2** is _____.
- The place value of **1** is **100**.
- The place value of **9** is _____.

❖ Face value

The face value of a digit is the value of the number itself. It remains the same in all places.

In 9128, the face value of:

9 is 9 1 is 1 2 is 2 8 is 8

❖ Expanded form

The numbers 1892 and 9128 are formed by the digits 1, 2, 8 and 9.
But these two numbers are different. Do you know why?

They are different because the digits are in different places.
So, the place value of each digit in the two cases is different.

The expanded form of 1892 is: 1000 + 800 + 90 + 2

The expanded form of 9128 is: 9000 + 100 + 20 + 8

1892 or 9128 are the short or standard forms of the numbers.

Activity 3

For the teacher: Let children work in groups to make numbers using place-value cards.

1	2	----------	9
10	20	----------	90
100	200	----------	900
1000	2000	----------	9000

This will further strengthen the concept of place-values.

Use the place-value cards to make these numbers.

a) 5846 b) 2387 c) 5400 d) 6201

Exercise 1.5

1. Arrange the numbers in the place value chart.
Write their expanded forms.

	Thousands 1000	Hundreds 100	Tens 10	Ones 1	Expanded form
4538					
3085					
5098					
6137					
9562					

2. Write in figures the place value of the digit in red.

a) 3642 b) 6078 c) 5687 d) 4535 e) 1079

f) 4183 g) 8777 h) 5500 i) 9679 j) 2304

3. Write in the expanded form.

a) 3819 b) 5983 c) 7812 d) 6234 e) 4609

f) 5962 g) 1011 h) 9009 i) 8019 j) 7433

4. Write in the short form.

a) 4000 + 300 + 80 + 8 : _____ b) 6000 + 400 + 30 + 9 : _____

c) 7000 + 700 + 7 : _____ d) 9000 + 90 + 9 : _____

e) 1000 + 100 + 10 + 1 : _____ f) 5000 + 700 + 80 : _____

g) 3000 + 3 : _____ h) 5000 + 100 : _____

i) 2000 + 20 + 3 : _____ j) 4000 + 300 + 20 + 1 : _____

❖ Ordering of numbers

How can you find out if a number is greater than another? For that you have to compare the numbers.

Example 1: Compare 3892 and 991.

If you place the numbers one below the other, it becomes easier to compare them.

3 8 9 2
9 9 1

3892 has four digits. 991 has only three digits. Therefore, 3892 > 991.

Example 2: Compare 8326 and 5810.

Both numbers have 4 digits.
Compare the digit in the thousands place.

8 3 2 6
5 8 1 0

Since 8 > 5, therefore 8326 > 5810

Example 3: Compare 8326 and 8213.

The digits in the thousands place are the same.
Compare the digits in the hundreds place.

8 3 2 6
8 2 1 3

Since 3 > 2, therefore 8326 > 8213

Example 4: Compare 8326 and 8385.

The digits in the thousands and hundreds places are the same.
Compare the digits in the tens place.

8 3 2 6
8 3 8 5

Since 2 < 8, therefore 8326 < 8385

Example 5: Arrange in descending order:

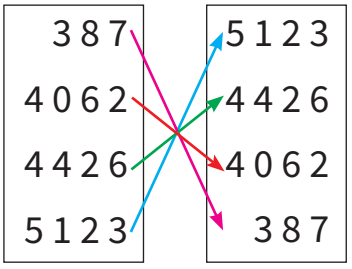
387 4062 4426 5123

Arrange the numbers one below the other.

387 has 3 digits. It is the smallest number. Write it last.

Look at the thousands digits.

5123 has the greatest thousands digit. It is the greatest number. Write it first.



Both 4426 and 4062 have the same thousands digit. Compare their hundreds digits.

Since 4 > 0, therefore 4426 is bigger. Write it after 5123. Next write 4062.

The numbers in descending order are: 5123, 4426, 4062, 387

Exercise 1.6

1. Fill in the correct symbol < or >.

a) 3149 ◯ 3448
b) 4807 ◯ 4078
c) 5308 ◯ 2441
d) 4705 ◯ 5681
e) 6817 ◯ 2828
f) 4715 ◯ 5078
g) 7286 ◯ 7305
h) 8391 ◯ 8395
i) 4005 ◯ 5004

2. **Put ✓ on the greatest number and ✗ on the smallest number.**

a) 823 1011 9990 679

b) 1386 1066 1145 1277

c) 7451 7476 7429 7420

d) 89 1001 875 888

e) 9305 953 1999 9315

f) 7425 2574 5247 754

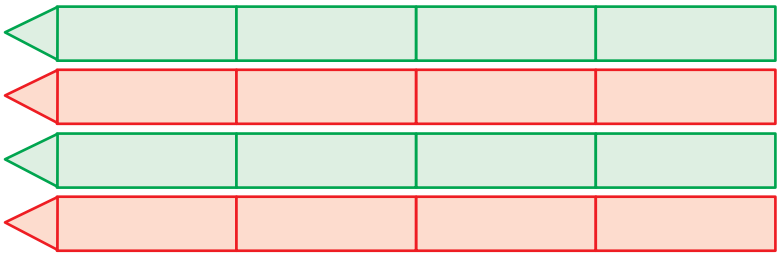
3. **Arrange in decreasing order of numbers (descending order)**

a) 9325, 9965, 3259, 5239

b) 825, 5820, 2085, 8025

c) 4050, 5004, 4005, 4500

d) 7186, 7786, 789, 798



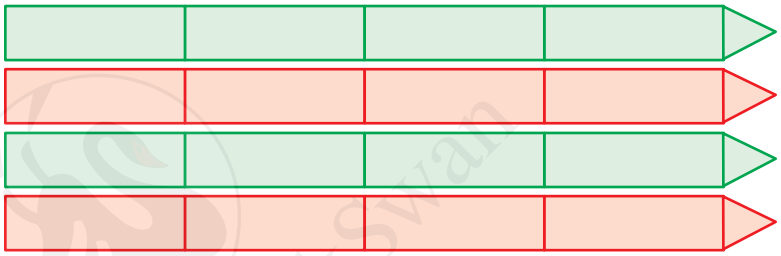
4. **Arrange in increasing order of numbers (ascending order)**

a) 6393, 9236, 3692, 2963

b) 4892, 9284, 2849, 9824

c) 2300, 2003, 2030, 3002

d) 1702, 1699, 1969, 1996



❖ Forming greatest and smallest numbers

Without repeating digits

ACTIVITY 4

You are given these number cards: 9 1 2 8

You can make many 4-digit numbers by arranging them in different ways.

Some examples are: 1 2 9 8 2 1 8 9 8 1 2 9

See how many more you can make.

Think! How will you make the greatest number from these digits?

Simple! Arrange the digits in descending order: 9 8 2 1

How will you make the smallest number?

Simple: Arrange the digits in ascending order: 1 2 8 9

Example 1: Form the greatest and smallest 4-digit numbers using the digits 9, 4, 6 and 2.

To form the greatest number, arrange the digits in descending order.
The greatest 4-digit number is: **9642**

To form the smallest number, arrange the digits in ascending order.
The smallest 4-digit number is: **2469**

Example 2: Arrange the digits 5, 7, 2 and 0 to form the greatest and smallest 4-digit numbers.

Greatest number: **7520**

Smallest number: Arranging in ascending order, the number is 0257.
But this is 257, which is a 3-digit number.
So, you cannot put 0 in the thousands place. Therefore 0 will come in the hundreds place.
The smallest 4-digit number is **2057**.

With repeating digits

Activity 5

You are given two sets of number cards for the digits 1, 5 and 6.

So, you have the number cards: 1 1 5 5 6 6

Make the greatest 4-digit number with these digits.

- First arrange the digits 1, 5, 6 in descending order: 6 5 1
- Next **repeat the largest digit** to make a 4-digit number. Therefore, the greatest number is: 6 6 5 1

To make the smallest 4-digit number:

- Arrange the digits in ascending order 1 5 6
- **Repeat the smallest digit** to make a 4-digit number. This gives the smallest number: 1 1 5 6

Example 3: Form the greatest and smallest 4-digit numbers using the digits 3, 4, 5 by repeating digits as required.

Greatest number

- Arrange the digits in descending order: **543**
- Repeat the largest digit as many times as necessary to make a 4-digit number: **5543**

Smallest number

- Arrange the digits in ascending order: **345**
- Repeat the smallest digit as many times as necessary to make a 4-digit number: **3345**

Example 4: Form the greatest and smallest numbers using the digits 5, 0 and 2, by repeating digits as required.

Greatest number: **5520**

Smallest number: You cannot begin with 0. So arrange the digits as: **205**

Now repeat the smallest digit 0 to make the smallest 4-digit number: **2005**

Exercise 1.7

1. Make a greatest and smallest 4-digit numbers using the following digits.

	Greatest	Smallest
a) 3, 9, 8, 4		
b) 6, 0, 5, 9		
c) 9, 8, 0, 3		
d) 2, 5, 4, 6		
e) 4, 7, 1, 6		
f) 1, 8, 3, 5		
g) 6, 0, 9, 0		
h) 7, 9, 8, 0		

2. **Make the greatest and smallest 4-digit numbers using the given digits, by repeating digits as required.**

a) 3, 6, 2

b) 7, 8, 9

c) 1, 3, 5

d) 5, 0, 7

e) 3, 8

f) 4, 7

g) 0, 1, 2

h) 9, 1, 0

❖ Successor and predecessor

The number that comes just after a given number is called its **successor**.
'Successor' is therefore a different way of saying 'what comes next'.

Number	Successor	Number	Successor
111	112	1009	_____
999	1000	1119	_____
3019	3020	1199	_____

Add 1 to a number to get its successor.

The number that comes just before a given number is called its **predecessor**.

Number	Predecessor	Number	Predecessor
7	6	201	_____
20	19	1010	_____
5000	4999	3100	_____

Subtract 1 from a number to get its predecessor.

Exercise 1.8

1. Write the successor of each of the following:

a) 3129 b) 7034 c) 4119 d) 5099 e) 6289

f) 6399 g) 2999 h) 1009 i) 3089 j) 8999

2. Write the predecessor of each of the following:

a) 1000 b) 3260 c) 1099 d) 4190 e) 6001

f) 9970 g) 5000 h) 4100 i) 2900 j) 1009

Activity 6

Number game

To the teacher: Divide the class into groups of 4 students each. Give each group a set of ten 4-digit number cards. Now ask students to take out cards according to your instructions.

For example:

Take out the cards for all numbers that:

1. have 5 in the hundreds place
2. do not have 0 or 2 in the ones place.
3. have digits less than 5 in the tens place

After each instruction check the cards taken out by each group and then mix the cards again before giving the next instruction.

The group that gets the most numbers correct is the winner.

Exercise 1.9: Real life applications

Example: The price of a TV set is ₹ 8595. The price of a sofa set is ₹ 8459. Which of the two costs more?

Compare 8595 and 8459.

8 **5** 9 5

8 **4** 5 9

The digits in the thousands place are the same.

In the hundreds place, 5 > 4; therefore 8595 > 8495

Therefore, the TV set costs more.

1. Mala's school fee is ₹ 3056 per month and Ashok's school fee is ₹ 3075 per month. Whose school fee is more?

2. Saira and Ishan went for a walk. Saira walked 2560 steps and Ishan walked 2800 steps. Who walked more steps?

3. Akshay earns ₹ 9856 per month and Sachin earns ₹ 8956 per month. Who earns less?

4. Harinder bought a coat. The price of the coat was ₹ 1 less than ₹ 2000. What was the price of the coat?

5. Lata wants to buy a pair of shoes for ₹ 2500 and a dress for ₹ 500. She has a ₹ 2000 note with her. Does she have enough money to buy both things?

6. In a counting competition, students had to count fast for exactly 10 minutes. Whoever reached the highest count was the winner. The numbers up to which the participants counted were:

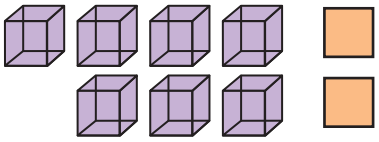
   Namita: 3456 Arnab: 4011 Sunitha: 2999 Aslam: 4200

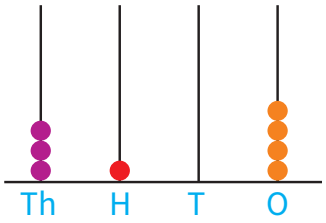
   Who was the winner? Who came second?

WORKOUT 1

understand and calculate

1. Write the number and number name.

a)  = _____

b) 

= _____

2. Write the expanded form.

a) 4803 = _____ + _____ + _____ + _____

b) 9875 = _____ + _____ + _____ + _____

c) 6024 = _____ + _____ + _____ + _____

d) 3333 = _____ + _____ + _____ + _____

3. Write the place and face values of:

a) 4 in 2489: Place value: _____ Face value: _____

b) 9 in 8009: Place value: _____ Face value: _____

4. Write in the short form.

a) 8000 + 200 + 6: _____

b) 5000 + 500: _____

5. Fill in the correct symbol <, > or =.

a) 2876 ____ 6782

b) 999 ____ 1000

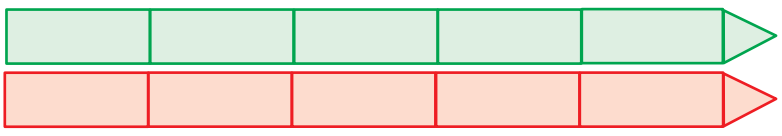
c) 7654 ____ 7653

d) 7050 ____ 5070

6. Arrange in ascending order.

a) 6007 6070 6700 7600 760

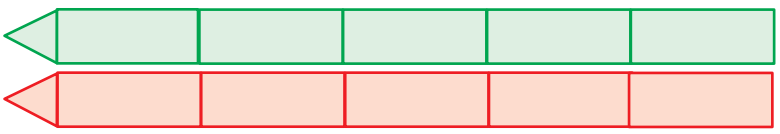
b) 4768 4709 5113 8214 986



7. Arrange in descending order.

a) 2489 8211 5464 3603 894

b) 456 4506 5604 6504 4560



8. Form the greatest and smallest 4-digit numbers using the following digits, without repeating any digit.

a) 4, 9, 2, 1 Greatest: _____ Smallest: _____

b) 3, 0, 7, 8 Greatest: _____ Smallest: _____

9. Form the greatest and smallest 4-digit numbers using the following digits, by repeating digits as required.

a) 2, 9 Greatest: _____ Smallest: _____

b) 3, 0, 4 Greatest: _____ Smallest: _____

10. Solve the story sums.

a) Sumit walks 2650 steps every day. Sunita walks 2750 steps. Who walks more?

b) The airfare from Delhi to Mumbai is ₹ 5065. The airfare from Delhi to Chennai is ₹ 7065. From Delhi, is it cheaper to fly to Mumbai or to Chennai?

Mental maths

11. What is:

a) 10 less than 4675? _____

b) 100 less than 8795? _____

c) 1 less than 2346? _____

d) 1000 less than 7500? _____

e) 1 more than 3456? _____

f) 10 more than 3465? _____

g) 100 more than 3465? _____

h) 1000 more than 3465? _____

WORKOUT 2
think and apply

MCQs

1. The largest 4-digit number is:

   a) 4000 b) 9999 c) 9000 d) 10000

2. The place value of 6 in 5769 is:

   a) 6 b) 60 c) 600 d) 6000

3. The smallest 4-digit number formed by the digits 6, 0, 7, 9 is:

   a) 6079 b) 679 c) 9760 d) 9067

4. The face value of 5 in 5400 is:

   a) 5000 b) 500 c) 50 d) 5

5. The place value of 5 in 5400 is:

   a) 5000 b) 500 c) 50 d) 5

Problem solving

6. I am a 4-digit number. If my digits are reversed I become a 3-digit number. What is the digit in my ones place? _____

7. a) Which is the smallest 4-digit number in which all 4 digits are the same?_____

   b) Which is the smallest 4-digit number in which all 4 digits are different? _____

Project

8. Find the heights of these mountains in metres. Arrange them in descending order of their heights.

   Mount Kanchenjunga Mount Lhotse

   Mount Everest Mount Godwin Austen

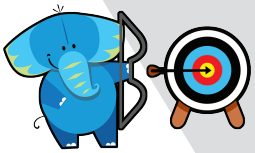
Heritage (Vedic maths)

The system of writing numbers using 10 digits 0 – 9 was invented by ancient Indian mathematicians. The Arabs learnt the system and passed it on to other countries. It is now used all over the world. Find out what this number system is commonly known as.

CHAPTER 6

Division

Learning Outcomes

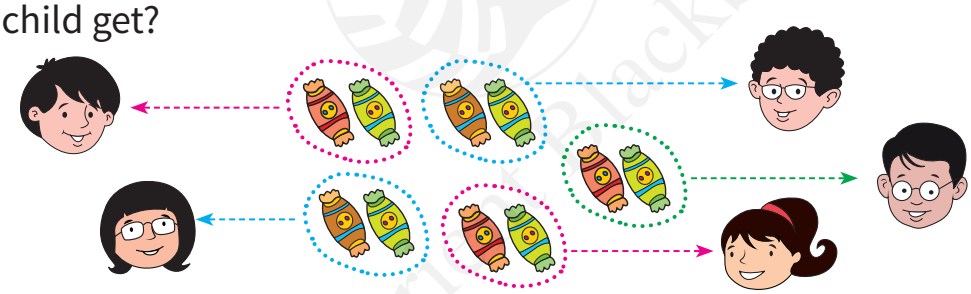


At the end of this lesson, students will be able to:

- divide by repeated subtraction.
- divide by equal sharing.
- use multiplication tables to divide.

❖ Recall—equal sharing

10 chocolates are shared equally between 5 children. How many chocolates does each child get?



Each child gets _____ chocolates.

Dividing into equal groups is called **division**. Division helps us to find how many in each group.

Revision exercise

1. Divide into equal groups. Write how many in each group.

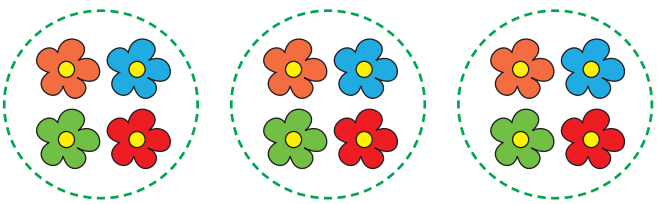
a) 12 divided by 3

Total number of flowers = _____

Number of groups = _____

Each group has _____ flowers.

12 divided by 3 equals _____



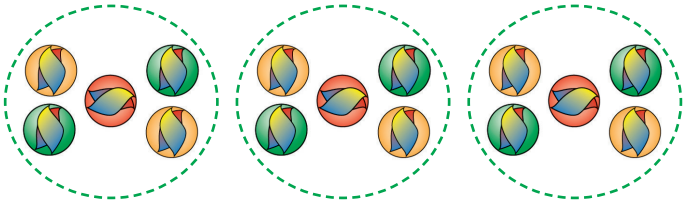
b) 15 divided by 3

Total number of marbles = _____

Number of groups = _____

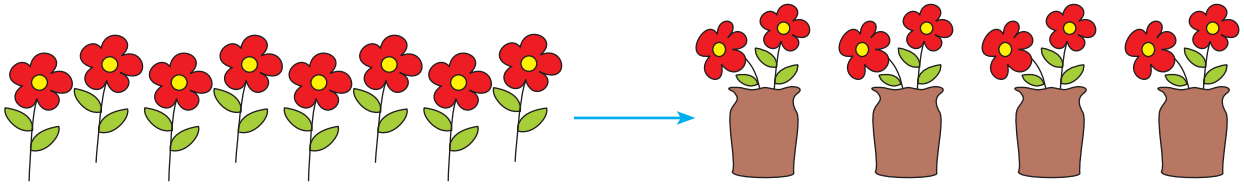
Each group has _____ marbles.

15 divided by 3 equals _____



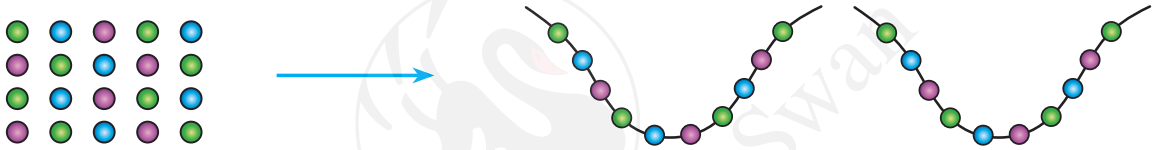
2. Write the division sum.

a)



_____ divided by _____ equals _____

b)



_____ divided by _____ equals _____

Activity 1

Dividing into equal groups

Objective: To develop conceptual understanding of division.

Material required: Concrete objects such as counters, ice-cream spoons or pencils.

Method:

1. Divide children into groups of 2 each. Give each group about 40 counters.
2. To divide 10 by 5, ask them to take out 10 counters.
3. Tell them to divide the counters into 5 groups. Demonstrate how this should be done—by keeping counters one at a time into the 5 groups. Ask them how many there are in each group.
4. Let them say aloud: '10 divided by 5 equals 2.'

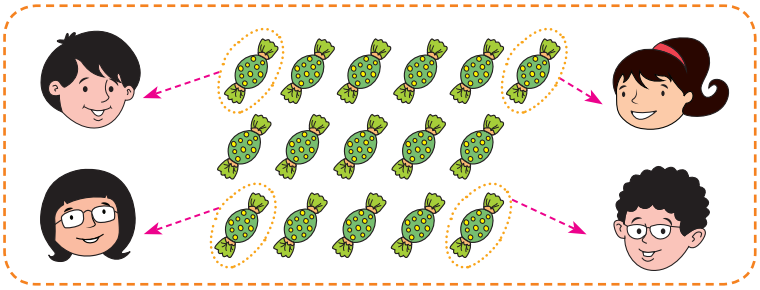
❖ Division symbol

You have 16 sweets. You want to divide them equally among 4 friends. How will you do this?

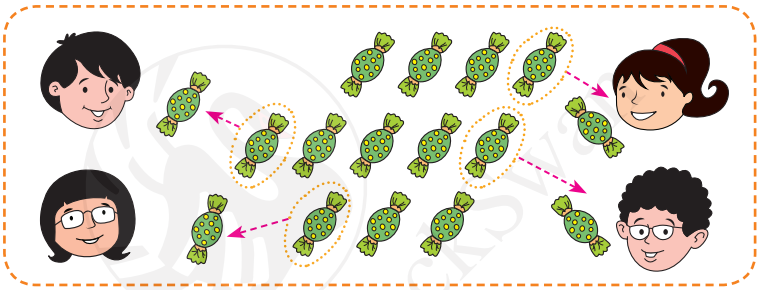
Give 1 sweet to each friend. Then give 1 more to each. Continue until no sweets are left.

How many did each friend get? _____

1.



2.



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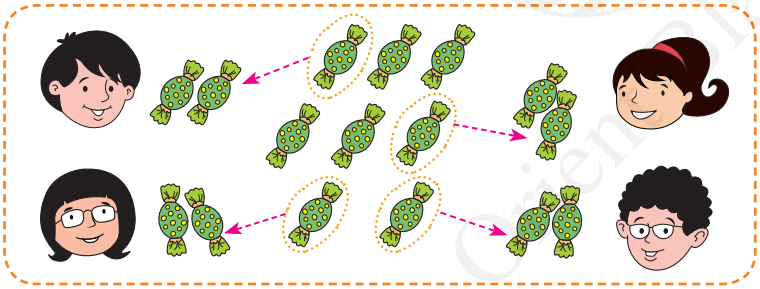

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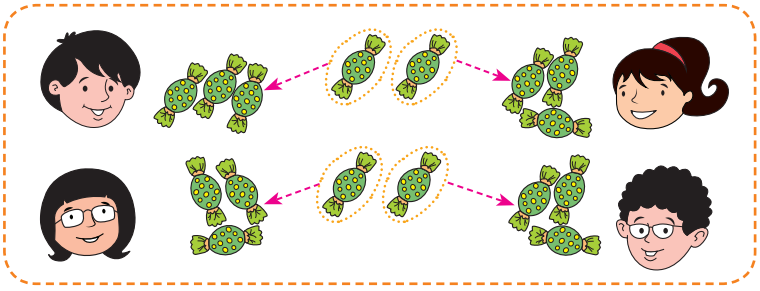
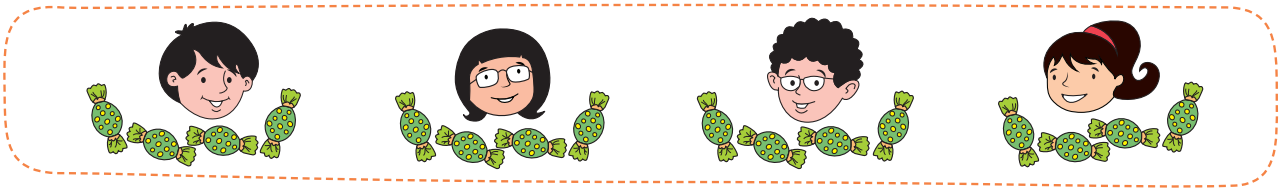


5.



	If 16 is	**equally divided into**	4 groups,	**each group has**	4
We say:	16	**divided by**	4	**equals**	4
We write:	16	**÷**	4	**=**	4

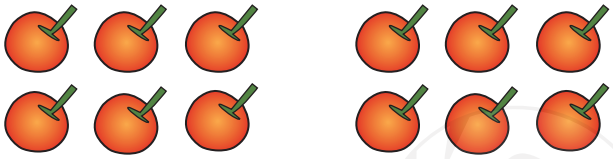
The symbol for division is **÷**

Exercise 6.1

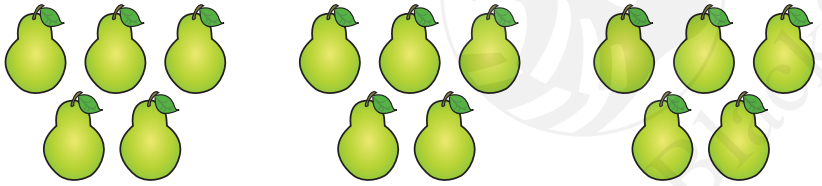
The objects are divided into equal groups. Write the division fact for each.

a) 

8 ÷ 4 = _____

b) 

12 ÷ _____ = _____

c) 

_____ ÷ _____ = _____

d) 

_____ ÷ _____ = _____

e) 

_____ ÷ _____ = _____

f) 

_____ ÷ _____ = _____

❖ Finding number of groups

You have seen that division means sharing equally. We can also use division to find **'How many groups?'**.

You have 12 sweets. You want to divide them into packets of 4 each. How many packets will you get?

You have **12** sweets.

Take away 4 sweets and put them in a packet.

You have **12 – 4 = 8** left.

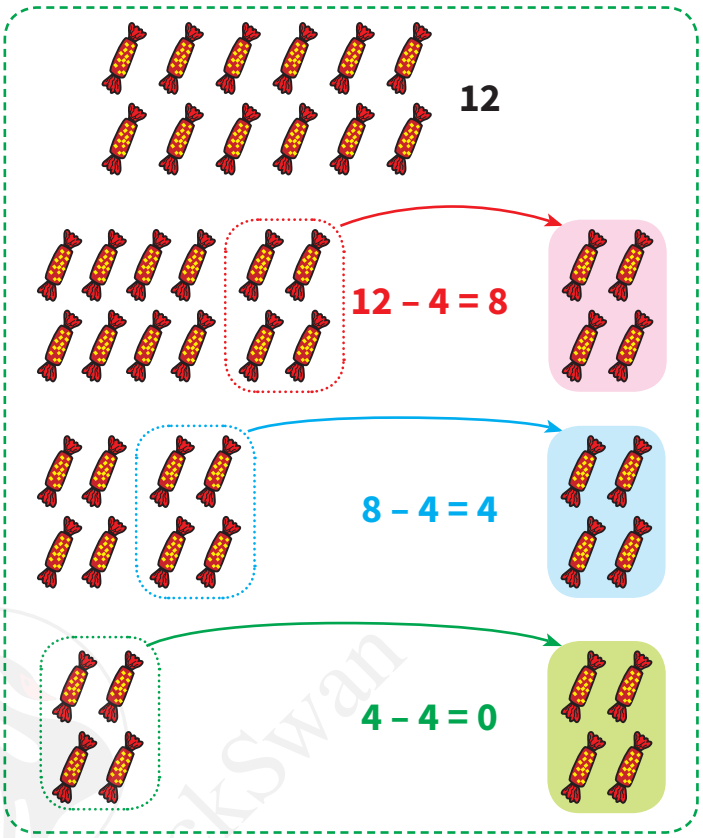
Take away 4 more and put them in another packet.

You have **8 – 4 = 4** left.

Take away 4 more and put them in a third packet.

You have **4 – 4 = 0** left.

How many packets did you get? _____



We see that:

12 **put into equal groups** of 4 each **gives** 3 groups

12 **divided by** 4 **equals** 3

12 **÷** 4 **=** 3

Activity 2

Dividing by finding the number of groups

Objective: To develop conceptual understanding of division.

Material required: Concrete objects such as counters, ice-cream spoons or pencils.

Method: To divide 10 by 2, proceed as follows.

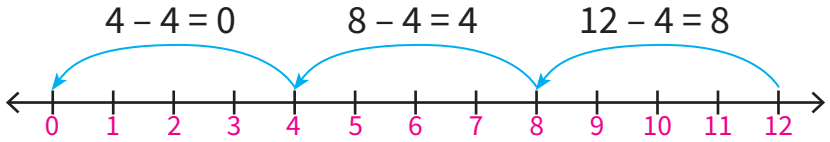
1. Divide children into pairs. Give 10 counters to each pair.
2. Tell them to take out 2 counters at a time and keep them in separate groups until no counters are left.
3. Ask them how many groups of 2 counters each they have.
4. Let them say aloud: '10 divided by 2 equals 5.'

❖ Division as repeated subtraction

How did you divide 12 sweets into groups of 4 each?

You **repeatedly subtracted** 4 from 12 till no sweets were left.

You can see this on the number line:

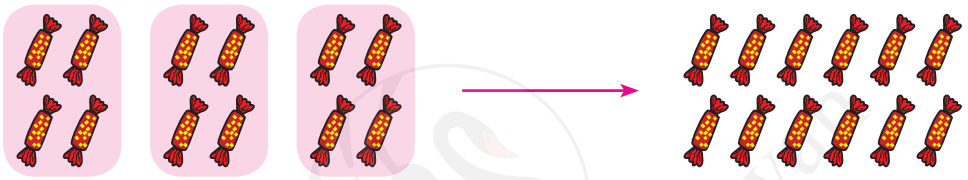


4 can be **repeatedly subtracted** from 12 **three times**.

This means that 12 ÷ 4 = 3

Therefore, we can say that **division is repeated subtraction**.

12 ÷ 4 = 3 shows that there are **3 fours in 12**.



3 fours make **12**

Exercise 6.2

1. Subtract repeatedly to get the division fact.

a) 20 ÷ 5 = ____

```
 2 0
 – 5
 1 5
 – 5
 1 0
 – 5
   5
 – 5
   0
```

b) 21 ÷ 7 = ____

```
 2 1
 – 7
 1 4
 – 7
   7
 – 7
   0
```

c) 24 ÷ 6 = ____

2. Use repeated subtraction to divide.

a) 18 ÷ 6 = _____ b) 14 ÷ 7 = _____ c) 24 ÷ 8 = _____ d) 36 ÷ 9 = _____

3. **How many:**

a) fives in 25? _____

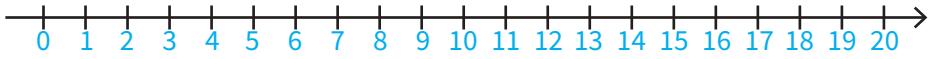
b) eights in 16? _____

c) fours in 24? _____

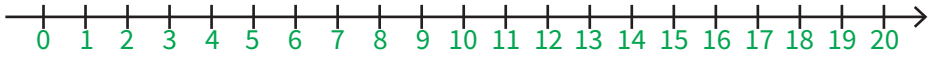
d) sixes in 36? _____

4. **Divide with the help of the number line.**

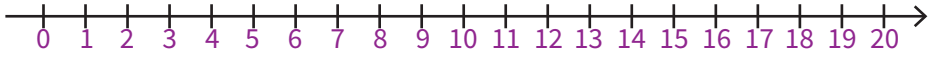
a) 15 ÷ 3 = _____



b) 16 ÷ 2 = _____



c) 20 ÷ 4 = _____



❖ Multiplication and division

If 3 groups of 4 marbles each are put together, you get 12 marbles.

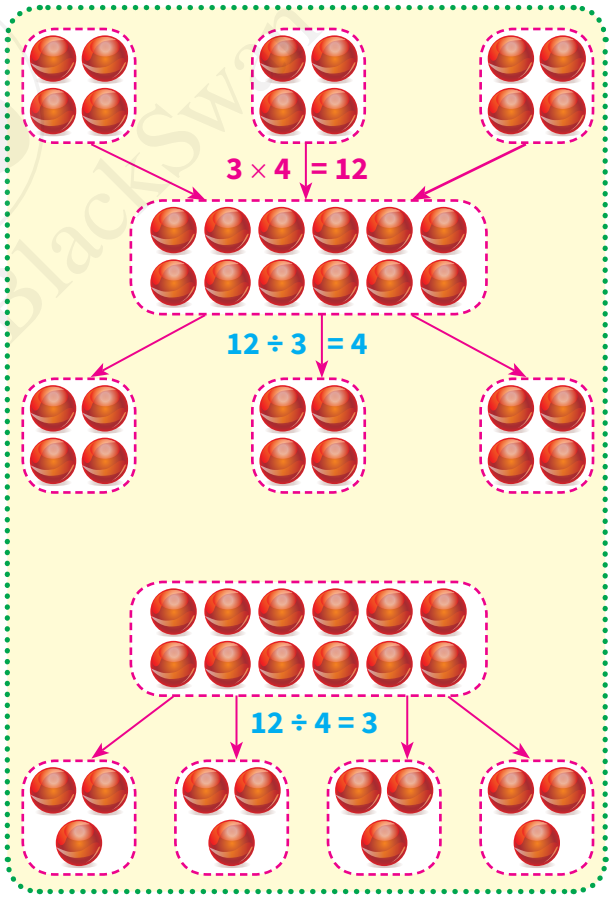
This is written as: **3 × 4 = 12**

If 12 marbles are divided into 3 groups, there are 4 marbles in each group.

This is written as: **12 ÷ 3 = 4**

Also if 12 marbles are divided into 4 groups, there are 3 marbles in each group.

This is written as: **12 ÷ 4 = 3**



Multiplication means **putting equal groups together**.

Division means **dividing into equal groups**.

Therefore division and multiplication are the opposite of each other.

For one multiplication fact: **3 × 4 = 12**

we can write two division facts: **12 ÷ 3 = 4** and **12 ÷ 4 = 3**

Exercise 6.3

1. For each multiplication fact, write the two division facts.

a) $8 \times 2 = 16$ _____ _____

b) $9 \times 3 = 27$ _____ _____

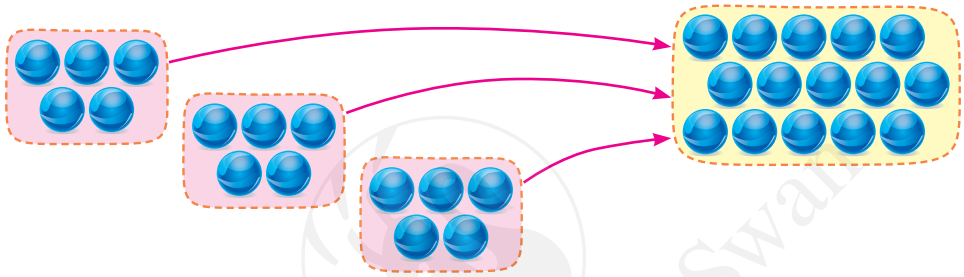
c) $6 \times 7 = 42$ _____ _____

d) $4 \times 6 = 24$ _____ _____

❖ Division using tables

You have seen that:

$15 \div 5 = 3$ means that there are **3 fives in 15**.



So, to divide 14 by 2 you have to find how many twos there are in 14.

You can do this by using the 2-times table.

From the table you can see that:

7 twos are 14.

Therefore, $14 \div 2 = 7$

It is easy to divide if you know your tables.

1 two is 2	$1 \times 2 = 2$
2 twos are 4	$2 \times 2 = 4$
3 twos are 6	$3 \times 2 = 6$
4 twos are 8	$4 \times 2 = 8$
5 twos are 10	$5 \times 2 = 10$
6 twos are 12	$6 \times 2 = 12$
7 twos are 14	$7 \times 2 = 14$
8 twos are 16	$8 \times 2 = 16$
9 twos are 18	$9 \times 2 = 18$
10 twos are 20	$10 \times 2 = 20$

Exercise 6.4

1. Divide using the 2-times table.

a) $20 \div 2 =$ _____ (see the table to find how many twos there are in 20.)

b) $12 \div 2 =$ _____ c) $16 \div 2 =$ _____ d) $8 \div 2 =$ _____

2. Divide using the 5-times table.

a) $20 \div 5 =$ _____ b) $30 \div 5 =$ _____ c) $15 \div 5 =$ _____ d) $50 \div 5 =$ _____

3. Divide using tables.

a) 40 ÷ 8 = ☐ b) 40 ÷ 5 = ☐ c) 10 ÷ 5 = ☐ d) 30 ÷ 6 = ☐

e) 49 ÷ 7 = ☐ f) 32 ÷ 8 = ☐ g) 28 ÷ 4 = ☐ h) 42 ÷ 6 = ☐

i) 27 ÷ 9 = ☐ j) 50 ÷ 10 = ☐ k) 30 ÷ 3 = ☐ l) 63 ÷ 7 = ☐

❖ Properties of division

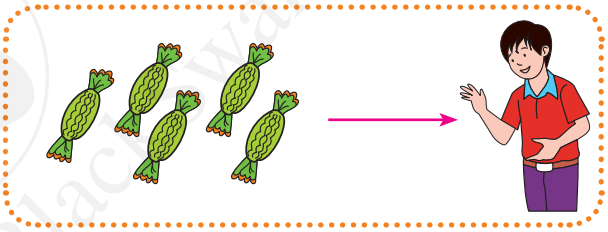
In the division:

15 ÷ **5** = **3**

- **15**: The number to be divided is called the **dividend**.
- **5**: The number that we are dividing by is called the **divisor**.
- **3**: The answer is called the **quotient**.

1. Dividing by 1

If 5 sweets have to be divided between only 1 person, that person will get all 5 sweets!



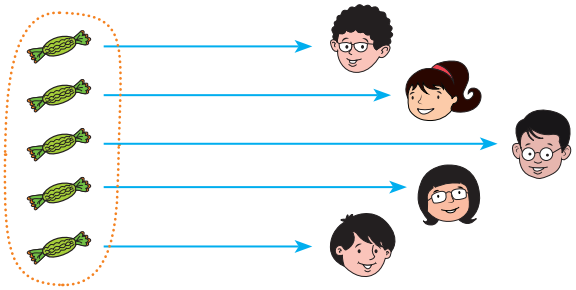
Therefore, 5 ÷ 1 = 5

Any number divided by 1, gives the same number as the quotient.

Examples: 7 ÷ 1 = 7 9 ÷ 1 = ☐ 16 ÷ 1 = ☐

2. Dividing a number by itself

If 5 sweets have to be equally divided between 5 children, each child will get 1 sweet!



Therefore, 5 ÷ 5 = 1

Any number divided by itself will give 1 as the quotient.

Examples: 6 ÷ 6 = 1 8 ÷ 8 = ☐ 15 ÷ 15 = ☐

3. Dividing 0

If 0 sweets have to be equally divided between 5 children, each child will get 0 sweets!

Therefore, 0 ÷ 5 = 0

When 0 is divided by any number (other than 0) the quotient is 0.

Examples: 0 ÷ 5 = 0 0 ÷ 10 = ☐ 0 ÷ 17 = ☐

4. Dividing by 0

A number cannot be divided by 0.

Think! What will happen if you repeatedly subtract 0 from 5? You will keep on getting the difference as 5, no matter how many times you subtract!

5 – 0 = 5 5 – 0 = 5 5 – 0 = 5 5 – 0 = 5 5 – 0 = 5 ...

Exercise 6.5

Fill in the blanks, using the properties of division.

a) 0 ÷ 2 = ☐ b) 9 ÷ 1 = ☐ c) 16 ÷ 16 = ☐ d) 0 ÷ 10 = ☐

e) 10 ÷ 1 = ☐ f) 0 ÷ 6 = ☐ g) 6 ÷ 6 = ☐ h) 0 ÷ 1 = ☐

i) 9 ÷ 9 = ☐ j) 15 ÷ 1 = ☐ k) 20 ÷ 1 = ☐ l) 10 ÷ 10 = ☐

Exercise 6.6: Real life applications

1. Hari has 24 pencils. He has 3 boxes. He puts an equal number of pencils in each box.

How many pencils are there in each box?

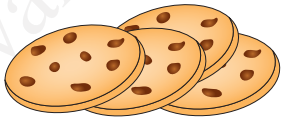
Number of pencils = 24
Number of boxes = 3
So, number of pencils in each box = 24 ÷ 3 = 8

2. Raju's mother buys 56 rose plants. She plants them in 7 equal rows.

How many plants are there in each row?

3. 60 biscuits are equally packed in 6 boxes.

How many biscuits are there in each box?

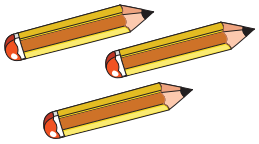


4. Mary has 30 marbles and 5 bags. She puts equal number of marbles in each bag.

How many marbles are there in each bag?

5. 64 pencils were equally divided among 8 children.

How many pencils did each child get?



6. 54 boys are standing in 9 rows. The number of boys in each row is the same.

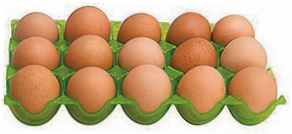
How many boys are there in each row?

Exercise 6.7: Mixed real life applications

1. One story book costs ₹ 10. What is the price of 5 story books?

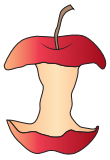
2. How many weeks are there in 49 days?
   (**Hint:** How many days does a week have?)

3. There are 72 apples in 8 boxes. How many apples are there in each box?

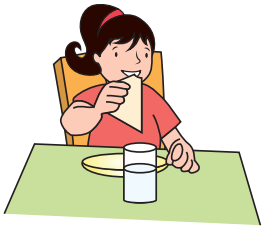


4. Mina bought 5 boxes of eggs. There were 6 eggs in each box. How many eggs did Mina buy?

5. Asha had 72 stamps and Asma had 8 stamps. How many stamps did they have altogether?



6. Abha's mother bought 12 apples. 6 apples were eaten on the first day and 3 on the second day. How many apples are left?



7. 20 sandwiches were divided equally among some children. If each child got 2 sandwiches, how many children were there?

8. The cost of 8 pencils is ₹ 32. What is the cost of 1 pencil?

WORKOUT 1

understand and calculate

1. 12 flowers are equally divided into 3 groups. Fill in the blanks.

Total number of flowers = _____

Number of groups = _____

Number of flowers in each group = _____

Write the division to show the above: _____

2. Write the division facts for the given multiplication fact.

a) $3 \times 7 = 21$ _____ _____

b) $8 \times 6 = 48$ _____ _____

c) $9 \times 4 = 36$ _____ _____

3. Write the multiplication fact for the given division fact.

a) $16 \div 2 = 8$ _____ b) $30 \div 10 = 3$ _____

c) $60 \div 6 = 10$ _____ d) $28 \div 7 = 4$ _____

4. Divide using tables.

a) $14 \div 7 =$ ☐ b) $48 \div 8 =$ ☐ c) $54 \div 9 =$ ☐

d) $20 \div 4 =$ ☐ e) $35 \div 7 =$ ☐ f) $28 \div 4 =$ ☐

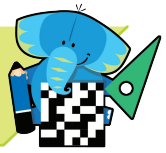
g) $12 \div 2 =$ ☐ h) $15 \div 3 =$ ☐ i) $35 \div 5 =$ ☐

j) $70 \div 10 =$ ☐ k) $18 \div 9 =$ ☐ l) $48 \div 6 =$ ☐

5. 36 friends decide to go for a picnic by car. 6 persons can sit in each car. How many cars are needed?

6. Colour pencils are sold in boxes of 10 each. A shopkeeper has 90 colour pencils. How many boxes can he make?

WORKOUT 2
think and apply



MCQs

1. If 20 marbles are equally divided among 5 children, the number of marbles each child gets is equal to:

   a) 20 – 5 b) 5 ÷ 20 c) 20 ÷ 5

2. If 20 × 8 = 160, which of the following is true?

   a) 160 ÷ 20 = 8 b) 160 ÷ 8 = 20 c) both a and b

3. 5 buttons are needed for 1 shirt. How many buttons are needed for 10 shirts?

   a) 10 × 5 b) 10 + 5 c) 10 ÷ 5 d) 10 – 5

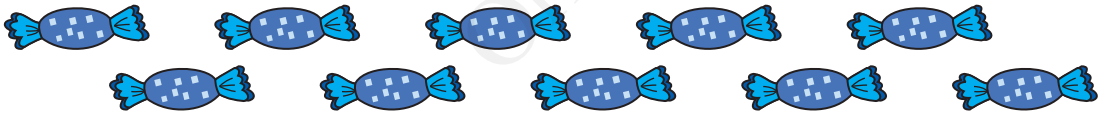
Problem solving

4. How many division facts can you write for 4 × 4 = 16?

   Can you find two more multiplications where the number of division facts is not 2?

5. You have 10 sweets. You want to distribute them equally between 3 friends. Can you do this?

   Distribute and see what happens.



Cross-curricular question

6. Mala wants to make a garland of 50 petals of the geranium flower.

   Each geranium flower has 5 petals. How many flowers will Mala need?

Inspired Maths

For the CISCE curriculum
CLASS 3

Orient BlackSwan

The National Education Policy (NEP) 2020 emphasises certain crucial parameters based on content and pedagogy. The Inspired Maths series provides a rich range of exercises and activities for each of the parameters. Here is a quick reference guide to some of the examples in this book.

The Inspired Maths series is mapped perfectly to the National Education Policy 2020.

21st Century Skills

A broad set of skills, knowledge, work habits and character traits that are important for success in the 21st century

The NEP parameters	Features	Page nos.
The 4Cs		
Collaboration	Activity 3	12
Creativity	Workout 2-Fun Activity	126
Collaboration, Communication	Activity 7	124
Creativity and Collaboration	Make your own story sums	33–34
Critical Thinking	Workout 2-Problem Solving	93, 108, 145
Critical Thinking, Creativity	Workout 2-Problem Solving	37, 49

Experiential/ Constructivist Approach

Learners construct their knowledge, based on what they already know, through experience or by doing and reflection

The NEP parameters	Features	Page nos.
Experiential/Constructivist Approach	Activity 1–2, 4–5	5, 6,15,16
	Activity 1–2, 4–9	131, 133, 135–138, 140, 141
	Workout 2-Project	145
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Integrated Approach

An approach to teaching and learning that works by connecting knowledge and skills across the curriculum, by bringing real life examples to the classroom

The NEP parameters	Features	Page nos.
Subject Integration	Workout 2-Cross-curricular (EVS)	63
	Workout 2-Cross-curricular (EVS)	108
	Workout 2-Cross-curricular (EVS)	145
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	Workout 2-Cross-curricular	162

The NEP parameters	Features	Page nos.
Know more about India	Workout 2-Heritage	23

India Knowledge

A strong focus on ancient knowledge from India, traditional values, modern developments and future aspirations

Digital Integration

The use of digital tools to enhance and support the teaching–learning process

ICT/Digital resources

OrientBlackSwan Smart App - Interactive Tasks for Practice and Revision

Teachers' Smart Book - Embedded Questions, Interactive Tasks, Animations, Games, Presentations, Worksheets, Teachers' Resources, Question Paper Generator

Teacher Empowerment

Teachers' Resource Pack - Lesson Plans with Extension Activities, Worksheets with Answers, Question Bank with Answers, Assessment Papers

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