



THE HDFC SCHOOL PUNE

Learning Design

Grade: VI

Subject: Mathematics

Date: 27th April to 8th May 2020

Topic : Whole Numbers

Learning Objectives: Students should be able to

1. Understand and define natural numbers and whole numbers.
2. Appreciate and enjoy the history of discovery of natural and whole numbers.
3. Understand that the smallest natural number has a predecessor in whole number.
4. Make out where and how to use the number line effectively.
5. Understand and demonstrate the properties of whole numbers.
6. Apply the knowledge acquired in daily life.

Flow of Content

This week covers the recapitulation of the concepts of numbers and the topics from the chapter Whole numbers.

Teaching/ Learning Strategies

1. Activity
2. Discussion/
Questioning
3. Explanation

The method of teaching adopted for this chapter is “Virtual classroom” using MS PowerPoint as the teaching tool during the MS Teams interactive sessions.

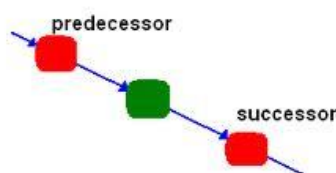
Day 1: With the help of **questioning technique**, the concepts of numbers learnt in previous classes will be recapitulated.



What are natural numbers and why are they called so?

Activity – Predecessor and Successor.

The concept of predecessor and successor will be revisited for natural numbers.



Students will understand that **all natural numbers have a successor in natural numbers.**

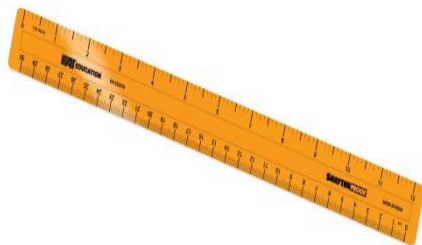
They will discuss **predecessors** of natural numbers and will conclude that **all natural numbers except 1 has a predecessor in**

natural numbers.

Ex 2.1 will be discussed and solved in the class with the help of student involvement.

Day 2:

Activity - Introduction to whole numbers



Teacher to show a scale starting from 1, ask them to measure any object.

Ask the students if this is accurate, can it give proper measurement?

Teacher will then discuss the need to have a zero in the system, and introduce the concept of whole numbers.

Students will then be able to define whole numbers as **“The natural numbers along with ‘0’ form the collection of whole numbers.”**

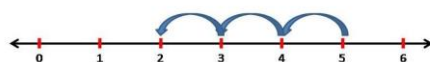
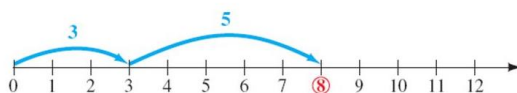
Day 3:

Activity :Addition, subtraction on a number line

The addition and subtraction of whole numbers will be experienced by the students during this activity of number line.

Activity method : Learning by doing

$$3 + 5$$



$$5 - 3 = 2$$

Students will actually do this and make a note in their notebooks.

Day 4: After performing all the operations on the number line and observing them closely, we notice several properties of whole numbers. These properties will be explained in the class.

Activity : Closure property

Remind the students of the **Closure Property**.

The Closure Property For Addition

If a and b are whole numbers, then $a + b$ is also a whole number.

The Closure Property For Multiplication

If a and b are whole numbers, then $a \times b$ is also a whole number.

- **Subtraction of whole numbers** does not always give a whole number. Thus whole numbers are not closed under subtraction.
 - For Example, $5 - 7 = -2$, which is a negative integer and not a whole number.
 - For Example, $9 - 6 = 3$ which is whole number.

Division of whole nos.

$$7 \div 7 = \frac{7}{7} = 1$$

$$7 \div 5 = \frac{7}{5}$$

Answer is NOT always a whole number.

Whole Numbers are not closed under Division

Closure property will be discussed for all the operations and students will make a note of the same in their note books.

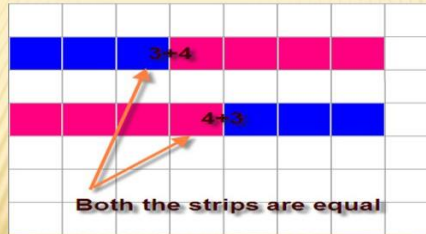
Day 5: Commutative property will be discussed in class.

Introductory activity

Using a weighing scale, students will understand the commutative property for addition and subtraction.

Math Lab activity: To verify that addition is commutative for addition.

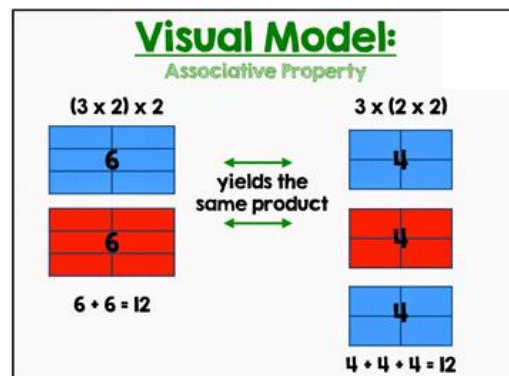
ACTIVITY :1.
TO VERIFY THAT ADDITION IS COMMUTATIVE FOR WHOLE
NUMBERS, BY PAPER CUTTING AND PASTING.



With the above activity, students will be able to prove that addition of whole numbers is commutative.

Day 6: Associative property

CG Activity 15: Understanding associativity with arrays

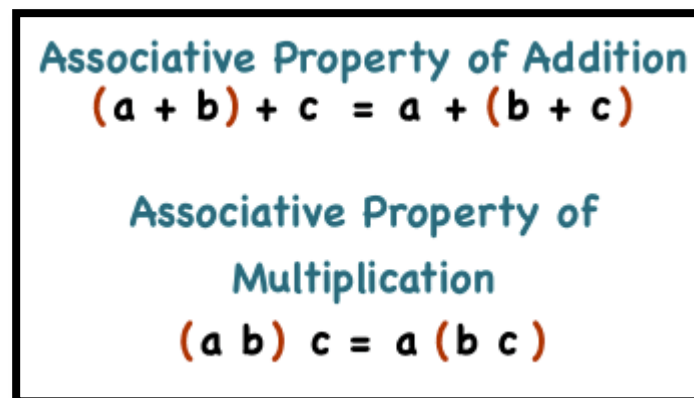


On a grid of paper students to practice the associative property of whole numbers. Teacher will give instructions based on the given example.

The associative property will be discussed about all the other operations as well.

students will share examples of each of them to explain the property.

Students will conclude that,



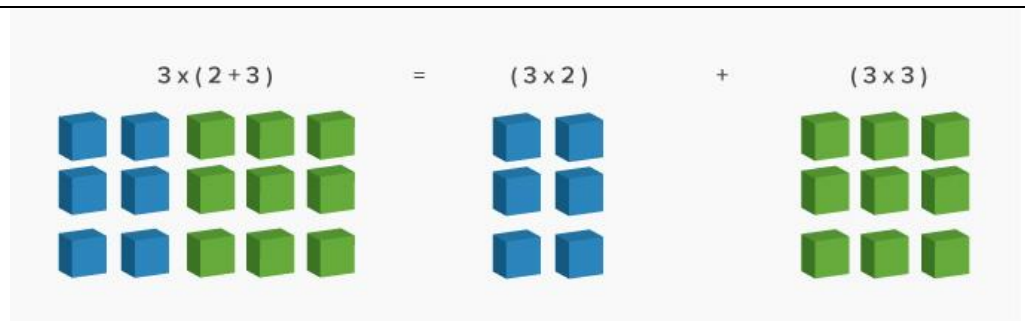
Associative property holds good for addition and multiplication whereas it is not true for subtraction and division.

Day 7: Distributive Property

Activity: Distributive Doctor

Teacher will **demonstrate** the following distributive doctor activity to students and **explain** the distribute law of whole numbers using soft cubes.

Students to practice the same with different set of numbers.



Students will also discuss the same property with regards to subtraction.

Distributive Property

Let a, b and c be real numbers.

ADDITION:

$$a(b + c) = ab + ac \quad 3(x + 5) = 3x + 15$$

$$(b + c)a = ba + ca \quad (x + 5)3 = 3x + 15$$

SUBTRACTION:

$$a(b - c) = ab - ac \quad 3(x - 5) = 3x - 15$$

$$(b - c)a = ba - ca \quad (x - 5)3 = 3x - 15$$

They will also understand that Distributive property is not applicable for multiplication and division.

Day 8: With the help of students' involvement exercise 2.3 will be discussed and solved in class.

Associative property

$$\begin{aligned} \text{e.g. } & 837 + 208 + 363 \\ &= (837 + 363) + 208 \\ &= 1200 + 208 \\ &= 1408 \end{aligned}$$

Distributive property

$$\begin{aligned} \text{e.g. } & 738 \times 103 \\ &= 738 \times (100 + 3) \\ &= 738 \times 100 + 738 \times 3 \\ &= 73800 + 2214 \\ &= 76,014 \end{aligned}$$

Day 9: Recapitulation of the chapter will be done with the help of a practice worksheet.

Students will solve the worksheet independently.

Day 10: Revision class test will be conducted.

Differentiated Learning :

For Remedial:

More examples of successors and predecessors will be done for a better understanding.
Exercise on operations on number line will be done.

For bright students:

They can explain the topics to the other children (peer learning) through think –pair - share

Resources & Reference Material Used:

NCERT text book

Videos for the following topics used to enhance the learning experience.

Introduction

Properties of whole numbers:

Learning Outcomes: Students are able to

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Inter Disciplinary Links:

A **debate** can be conducted on the topic “ **Zero is the be all and the end all of the universe**”

Connecting the concept to real life, using a weighing scale to understand the property of whole numbers.

Assessment/Assignment:

Practice questions from the exercise will be given.

Worksheet for practice of various concepts.

Class test will be conducted based on the concepts done. (10 Marks)