**Poorna Learning Centre**

**Group 7 Lesson Plan (2018-19)**

**Chapter 1: Integers**

**Objectives:**

* + Review Natural Numbers(N), Whole Numbers(W) and Integers(Z). Represent them on Number line.
	+ Perform the four major arithmetic operations on Integers
	+ Understand and use the various properties of Integers

**Resource Material:**

NCERT Mathematics textbook for class 7

**Before We Begin:**

|  |  |
| --- | --- |
| Terms | Methods |
| Number Types:* Natural Numbers (N)
* Whole Numbers (W)
* Integers (Z)
 | Addition, subtraction, multiplication and division of:* N, W
 |

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Teacher's Activity  | Student's Activity | Assignments |
| 1.1/1.2 Review the various number systems from N to Z. | * Ask for examples of each number type
* Ask to represent each number type on a number line.
* Ask children to arrange integers in an order.
* Elicit the real life uses of integers
* Review addition of integers
* Review subtraction of negative number

Ex: The difference between -3 and 6 = 9 (Children intuitively arrive at the answer by looking at the thermometer with integers marked on it)Teacher helps children understand that the statement “difference between -3 and 6” can be mathematically written as 6-(-3) = 9. * With multiple examples, children will conclude that negative of negative is positive.
 | * Give examples of different number types
* Represent different number types on number line.
* Arrange integers in order.
* Give examples of integers in real life.
* Solve addition and subtraction of integers
 | Worksheet on identifying and comparing Integers.Worksheet on addition and subtraction of Integers.Ex 1.1 |
| 1.3 Properties of Addition and Subtraction on Integers:* Closure under Addition
* Closure under Subtraction
* Commutative
* Associative
* Additive Identity
 | * Remind children of the various properties covered last year for Natural numbers and Whole numbers.
* Extend the examples with various integers and explain each property and conclude if it is true or not for the given integer set
 | * Solve various examples on properties.
 | * Ex 1.2
 |
| 1.4 Multiplication of Integers:* Positive and a Negative
* Two Negative Integers
* Three or more Negative Integers

  | * Recall multiplication as repeated addition for whole numbers.
* Help children deduce that multiplication of positive and negative numbers results in negative number.
* With the help of patterns, deduce that the product of two negative integers is a positive integer.
* With the help of examples explain what the product of more than three negative integers is.
 | * Understand that product of positive and negative integer is negative.
* Understand that product of two negative integers is positive.
* Find the product of three or more negative integers
 | * Worksheet on integer multiplication
 |
| 1.5 Properties of Multiplication of Integers:* Closure
* Commutative
* Associative
* Distributive
* Multiplication by Zero
* Multiplicative Identity
 | * Remind children of the various properties covered last year for Natural numbers and Whole numbers.
* Extend the examples with various integers and explain each property and conclude if it is true or not for the given integer set
 | * Solve various examples involving multiplication properties.
 | * Ex 1.3
 |
| 1.6 Division of Integers1.7 Properties of Division of Integers | * Recall division of whole numbers.
* Extend the concept of multiplication of integers to division with the help of examples
 | * Divide integers

Ex: 8 ÷ (-2) = -4Ex: -8/2 = -4 | * Ex 1.4
* Assessment
 |

**Remedial Plan:**

Scaffolding worksheets with simple numbers are given as homework. Children are regularly followed up as and when they are free.

**Challenging work:**

Children can solve questions from NCERT Mathematics textbook for class 8. Additionally, they are provided with worksheets having higher order questions.