CHAPTER 02

Whole Numbers

Introduction:

In the previous lesson, we have seen how numbers form an important part of our daily life.

We use numbers to count, say here we have

Three kites

4 friends

9 tomatoes

So 3, 4 and 9 are COUNTING NUMBERS.

These counting numbers are called as Natural numbers.

In the previous lesson, we have seen how numbers form an important part of our daily life.

We represent the set of natural numbers using the alphabet N.

Note that counting numbers start from 1.

PREDECCESOR AND SUCCESSOR

In these set of counting numbers you might experience that 1 added any number gives the next number and 1 deducted from any numbers gives the number before.

For **EXAMPLE**

24 + 1 GIVES 25.

This number is next number to 24 and hence called successor.

If we deduct 1 from 24 we get 23

23 is the predecessor of 24

Some more examples,

10 is the successor of 9 and

8 is the predecessor of 9

121 is the predecessor of 122

And 123 is the successor of 122

We now see SUCCESSOR is the next number of the given number and PREDECESSOR is the previous number of the given number.

Can you think about these questions now?

Which natural number does not have a successor?

Which natural number does not have a predecessor?

Going by this new learning, what do you think about the predecessor of the number 1?

IS IT ZERO?

Yes it may be!

But look at this digit zero carefully.

Can zero also be called as a counting number?

No zero is not a counting number.

When we say 0 ice creams that means there is no ice cream.

If zero means nothing, then why do we need zero?

Well, zero is a digit that acts as a placeholder. Without zero, we cannot count the number beyond 9.

When we add 1 to 9, we get 10.

We have learned in our previous chapter how zero placed in a position in a place value chart gives the value of a number.

Now, do you see the importance of zero?

Since the natural numbers are counting numbers that start from 1, we cannot include zero into that family of numbers.

Hence, when we add zero to natural numbers and give it a name called Whole numbers.

So we can now say all counting numbers including a zero are called WHOLE NUMBERS and can be

WRITTEN AS,

{0, 1,2, 3, 4...}

Some of the examples of whole numbers are 0, 15, 256.

But note that these

PREDECESSOR AND SUCCESSOR OF WHOLE NUMBERS

- The predecessor of a whole number is one less than the given number.

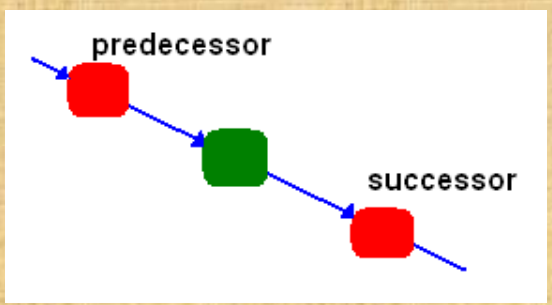
Example: The predecessor of 1 is 0; the predecessor of 2 is 1; predecessor of 3 is 2 and so on.

Note: The whole number 0 does not have any predecessor.

- *The successor of a whole number is the number obtained by adding 1 to it.*

Example: The successor of 0 is 1; successor of 1 is 2; successor of 2 is 3 and so on.

The relation between Predecessor and Successor can be very clearly seen in this diagram.



Now we can think about these questions.

Which is the smallest whole number?

Are all whole numbers natural numbers?

The difference between the Predecessor and Successor of a number is 2.

Are all natural numbers whole numbers?