

ONLINE STUDY MATERIAL

SUBJECT-Maths

SESSION-2020-21

CLASS- 6

CHAPTER No- 3

TOPIC: Whole numbers

DAY-1

o NCERT MATERIAL

Chapter 2.1 from ncert book.

o NOTES

Natural numbers:- All counting numbers are said to be natural numbers. E.g 1, 2, 3.....

Whole numbers:- All natural numbers together with '0' are called whole numbers. E.g 0, 1, 2.

Successor of a whole number:- If we add 1 to a whole number, we get the next whole number, called its successor.

E.g when we add 1 to today's date 29 it will be 30. Means successor of 29 will be 30.

Predecessor of a whole number:- One less than a given whole number (other than 0), is called its predecessor.

E.g when we subtract 1 from today's date 29 it will be 28. Means predecessor of 29 will be 28.

Zero '0' is smallest whole number.

Every whole number has its successor.

Every whole number has its predecessor except 0.

❖ VIDEO-LINKS

LINK:- [whole numbers vedio 1](#)

[Whole numbers vedio 2](#)

[Whole numbers vedio 3](#)

❖ PPT LINKS

LINK- [power point representation on whole numbers](#)

❖ Additional practice exercise

Exercise 3a from RS aggarwal for more practice.

DAY-2

○ NCERT MATERIAL

Chapter 2.2 from ncert book.

○ NOTES

Operations on whole numbers

Properties of addition

- 1) Closure property:- If a and b are any two whole numbers, then $(a+b)$ is also a whole number. E.g $5 + 6 = 11$ all the three numbers 5, 6 and 11 are whole numbers.
- 2) Commutative law:- If a and b are any two whole numbers, then $(a+b)=(b+a)$.
E.g $5 + 6 = 6 + 5$ both will give the same result 11, which also a whole number.
- 3) Associative law:- For any whole number a, b, c we always have $(a+b)+c = a+(b+c)$.
E.g $(9+10)+11 = 9+(10+11)$

Adding the sequence we will get

$$\Rightarrow (9+10)+11 = 9+(10+11)$$

$$\Rightarrow 30 = 30$$

Here, all the numbers are whole numbers 9,10,11,19,21 and 30.

- 4) Additive property of zero:- If a is any whole number, then $a+0 = 0+a = a$
Eg. $5+0 = 0+5 = 5$.

| | | |
|---|----|---|
| 9 | 2 | 7 |
| 4 | 6 | 8 |
| 5 | 10 | 3 |

- 5) Magic Square:- A magic Square is an arrangement of different numbers in the form of a square such that the sum of the numbers in every horizontal line, every vertical line and every diagonal line is the same.

E.g one magic Square is done for you.

It may be noted that:-

$$\text{Row wise sum} = (9+2+7) = (4+6+8) = (5+10+3) = 18$$

$$\text{Column wise sum} = (9+4+5) = (2+6+10) = (7+8+3) = 18$$

$$\text{Diagonal wise sum} = (9+6+3) = (7+6+5) = 18.$$

VIDEO-LINKS

[LINK-whole numbers vedio 4](#)

[whole numbers vedio 5](#)

[Whole numbers vedio 6](#)

❖ Additional practice exercise

Exercise 3b from RS aggarwal for more practice.

DAY-3

o NOTES

Subtraction in whole numbers

The operation of subtraction is an inverse of addition.

Properties of subtraction

No property is follow in whole numbers which we had studies in last class of whole numbers.

Important point :- Subtracting smaller number from larger number is called its difference.

Multiplication of whole numbers

If we write like $3+3+3+3=12$ in short we can write it as $4 \times 3=12$.

So we can say that multiplication is repeated addition.

Properties of multiplication of numbers

1. Closure property :- If **a** and **b** are whole numbers, then $(a \times b)$ is also a whole number.
E.g $5 \times 6 = 30$ Here 5 , 6 and 30 all are whole numbers.
2. Commutative law :- If **a** and **b** are any two whole numbers then $(a \times b) = (b \times a)$.
E.g $5 \times 6 = 6 \times 5$
 $\Rightarrow 30 = 30$. Here 5 , 6 and 30 all are whole numbers.
3. Associative law:- If **a**, **b**, **c** are any whole numbers, then $(a \times b) \times c = a \times (b \times c)$.
E.g $(9 \times 7) \times 10 = 9 \times (7 \times 10)$
 $\Rightarrow 63 \times 10 = 9 \times 70$
 $\Rightarrow 630 = 630$.
Here 9, 7, 10, 63 , 70 and 630 all are whole numbers.
4. Distributive law of multiplication over addition:- For any whole numbers **a**, **b** , **c** we have $a \times (b+c) = (a \times b) + (a \times c)$.
E.g Consider the whole number 16, 9 and 8.
 $16 \times (9+8) = (16 \times 17) = 272$.
 $(16 \times 9) + (16 \times 8) = 144 + 128 = 272$.
Therefore $16 \times (9+8) = (16 \times 9) + (16 \times 8)$.
5. Distributive law of multiplication over subtraction :- For any whole number **a** , **b**, **c** we have $a \times (b-c) = (a \times b) - (a \times c)$.
E.g Consider the whole number 16, 9 and 8.
 $16 \times (9-8) = (16 \times 1) = 16$
 $(16 \times 9) - (16 \times 8) = 144 - 128 = 16$
Therefore $16 \times (9-8) = (16 \times 9) - (16 \times 8)$.
6. Multiplicative property of zero :- For every whole number **a** , we have $(a \times 0) = (0 \times a) = 0$.
E.g $9 \times 0 = 0 \times 9 = 0$.
7. Multiplicative property of 1 :- For every whole number **a** , we have $(a \times 1) = (1 \times a) = a$.
E.g $9 \times 1 = 1 \times 9 = 9$

VIDEO-LINKS

LINK-Whole numbers vedio 7
whole numbers vedio 8

❖ Additional practice exercise

Exercise 3c from RS aggarwal for more practice.

DAY-4

o NCERT MATERIAL

Chapter 2.3 from ncert book.

o NOTES

Division in whole numbers

Division is the inverse operation of multiplication.

Division Algorithm

Let **a** and **b** be two given whole numbers such that **a > b**. On dividing **a** by **b**, let **q** be the quotient and **r** be the remainder. Then, we have **a = bq + r**, where $0 \leq r < b$.

This result is known as division Algorithm.

Thus, $\text{dividend} = (\text{divisor} \times \text{quotient}) + \text{remainder}$.

Even number:- A whole number divisible by 2 is called an even number. Eg. 2, 4, 6....

Odd number:- A whole number which is not divisible by 2 is called an odd number. Eg. 1, 3, 5....

Example :- Divide $6528 \div 29$ and check the result by division algorithm.

$$\begin{array}{r} 29 \overline{)6528} \quad (225 \\ - 58 \\ \hline 72 \\ - 58 \\ \hline 148 \\ - 145 \\ \hline 3 \end{array}$$

\therefore Quotient = 225, remainder = 3

Verification :

Quotient \times Divisor + Remainder

$$= 225 \times 29 + 3$$

$$= 6525 + 3$$

$$= 6528 = \text{Dividend}$$

❖ VIDEO-LINKS

LINK :- [whole numbers vedio 9](#)

[whole numbers vedio 10](#)

❖ Online test link to test yourself:- [click here](#).

❖ Additional practice exercise

Exercise 3d and 3e from RS aggarwal for more practice.

MATHS APPLICATION ACTIVITIES/LAB MANUALS

To find the HCF of two given numbers.

Hint:- Activity 4 of your class 6 maths RS aggarwal book. Page 250.

EXERCISE:

Q 1. Write the predecessor of 38794.

Q 2. Write the whole number whose predecessor is 5347.

Q 3. Write the whole number whose predecessor is 3012999.

Q 4. Choose the correct answer .

If a is whole number such that $a + a = a$, then a is equal to

(a) 0 (b) 1 (c) 2 (d) none of these

Q 5. How many 3-digit numbers are there between 94 and 607?

Q 6. Divide 7869 by 31 and check the result by division algorithm.

Q 7. If 5 is removed from collection of whole numbers, are the remaining numbers closed under multiplication?

Q 8. Abhijeet's school is 3 km 520 m away from his home. One day while returning from his school, just after covering 1 km 370 m distance, he saw a woman who was bleeding. He took her to the nearest hospital which was 2 km 775 m away from that place and got her admitted. He came back to his home which was 4 km 565 m from the hospital.

(i) Find the distance covered by Abhijeet on that day.

(ii) What value of life is depicted by Abhijeet?

Q 9. Find the value of the following:

(i) $54279 \times 92 + 54279 \times 8$

(ii) $2326 \times 636 + 2326 \times 364$

(iii) $60678 \times 262 - 60678 \times 162$

Q 10. Find the following products by using suitable properties:

(i) 739×102

(ii) 1938×99

(iii) 1005×168 .