BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034

SUBJECT:- MATHEMATICS CLASS:- 8

CHAPTER: 6

TOPIC:- SQUARE AND SQUARE ROOTS   (Part 1)

GUIDELINES AND INTRODUCTION

GUIDELINES

Dear students, kindly refer to the following notes /video links from the Chapter- "SQUARE AND SQUARE ROOTS" and thereafter do the questions .

NOTE- Students can download NCERT book using the following link:-

http://ncert.nic.in/textbook/textbook.htm?hemh1=0-16

INTRODUCTION:

You know that the area of a square = side × side (where 'side' means 'the length of a side'). What is special about the numbers 4, 9, 25, 64 and other such numbers?

Since 4 can be expressed as 2 × 2 = 2^2 , 9 can be expressed as 3 × 3 = 3^2, all such numbers can be expressed as the product of the number with itself. Such numbers like 1, 4, 9, 16, 25, ... are known as **square numbers**. In general, if a natural number **m** can be expressed as n^2, where **n** is also a natural number, then **m** is a square number.

Is 32 a square number? We know that 5^2 = 25 and 6^2 = 36. If 32 is a square number, it must be the square of a natural number between 5 and 6. But there is no natural number between 5 and 6. Therefore 32 is not a square number.

In general ,**if a number is multiplied by itself ,the product is called square of that number**.

In this chapter , we will learn various techniques to find whether a given natural number is a perfect square or not. We shall also study some properties of square numbers and observe patterns to find out the rule behind them. We shall also learn various methods of finding square roots of square numbers.

SUBTOPICS:-
1) Perfect square number
2) Properties of perfect square numbers
3) Observe interesting pattern related to square numbers

1) Introduction :

   https://www.examfear.com/free-video-lesson/Class-8/Maths/Squares-and-Square-Roots.htm

2) Perfect and non perfect square numbers :

   https://www.youtube.com/watch?v=LeK7gZxHn5w&feature=emb_rel_end

   3) Properties of perfect square numbers :

   (i) https://www.youtube.com/watch?v=4J_H1hyLQy4

   (ii) https://www.youtube.com/watch?v=wNwnmAYS1Rg

   (iii) https://www.youtube.com/watch?v=nsdAO7biThU

   (iv) https://www.youtube.com/watch?v=Mn3428D5KuM

   (v) https://www.youtube.com/watch?v=EpGWtGlsKUA

   4) Some interesting patterns of Perfect Squares numbers
   https://www.youtube.com/watch?v=nrx2wnUcnSU

   SUMMARY OF IMPORTANT POINTS

   https://www.youtube.com/watch?v=VRboAJ0_HOU

POINTS TO REMEMBER:

1) **<u>Square of a number.</u>**

   If a natural number **m** can be expressed as **n^2** (where **n** is a natural number), then **m** is the square number or perfect square.
   i.e. if $m = n^2$ (m, n – natural numbers)
2) A **square number** can only end with digits 0, 1, 4, 5, 6, 9.
3) **Number** of zeroes at the end of a perfect **square** is always even.
4) **Square** of even **numbers** is always even.
5) **Square** of odd **numbers** is always odd.
6) If a **number** has 1 or 9 in its unit place,its **square** ends with 1.
7) If a **number** has 4 or 6 in its unit place ,its **square** ends with 6
8) If a **number** has 2 or 8 in its unit place,its **square** ends with 4.
9) If a **number** has 3 or 7 in its unit place,its **square** ends with 9.

<u>ASSIGNMENT</u>

1) **From Exercise 6.1 in NCERT textbook the following questions are to be done Mathematics notebook:**

EX 6.1 **Q1** i), iii), vii), viii), x)

Q2 i), iii), iv), viii)

Q3 , Q4 ,Q7, Q8 and Q9

2) Objective Type Questions

(To be done in a separate Maths practice notebook)

Q1. Find the perfect square numbers between (i) 30 and 40 (ii) 50 and 60

Q2. How many natural numbers lie between 18^2 and 19^2?

     a) 30   b) 37   c) 35   d) 36

Q3. Which of the following can not be a perfect square?

     a) 841   b)529   c)198   d) 441

Q4. The sum of successive odd numbers 1,3,5,7,9,11,13 and 15 is

     a) 81   b) 64   c) 49   d) 36

Q5. There are _____ perfect square numbers between 1 and 100.

Q6.The square of which of the following numbers would be an odd number/an even

number?

     (i) 727   (ii) 158   (iii) 269   (iv) 1980

Q7. How many zeros will there be in the square of the following numbers?

     (i) 60   (ii) 400