

**TENDER HEART SCHOOL, SECTOR-33 B, CHD**

**Class: IX**

**Session: 2021-2022**

**Subject: Mathematics (Project)**

**Subject Teacher: Mr. Lokesh**

**Ms. Deepti**

**Instructions for students**

- Students you are required to prepare a project report on any two topics given below:
- Follow the standard format for preparing a project report:  
Page 1: Title (Mathematics Project)  
Page 2: Acknowledgement  
Page 3: Index  
Page 4: Topic 1 and 2  
Last Page: References/Bibliography

**1. Pi ( $\pi$ )**

- i. Write about the discovery/origin of  $\pi$ .
- ii. Write about the uses of  $\pi$  and why it is a unique number?
- iii. Write at-least six mathematical formulae that have quotient of  $\pi$ .  
(Example, circumference of a circle  $\div$  diameter is equal to  $\pi$ , so  $\frac{C}{d} = \pi$ ).
- iv. Write minimum 30 decimal place values of  $\pi$  after the integer.  
(Do you know that the decimals of  $\pi$  are never ending? i.e. they go till infinity and no pattern of decimals is ever repeated.)

**2. Frequency of letters/words in language**

Analysis of a language text using graphical techniques:

- i. Select any paragraph (250 words approx.) from any source e.g. newspaper, magazine, textbook, etc.
- ii. Note down the number of two-letter words, three-letter words.....and so on and obtain a frequency table as follows:

<b>Number of words</b>	<b>Frequency</b>
Two-letter	
Three-letter	
.....	
So on	

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- iii. Now represent the above frequency table into cumulative frequency table.
- iv. Prepare a frequency polygon (graph) taking number of words on x-axis and frequency on y-axis.

**3. Mensuration**

- i. Draw and write the names of all 2-dimensional and 3-dimensional shapes in your file.
- ii. Write the formulas of area and perimeter of all 2-D shapes  
e.g. Area of rectangle = length x breadth  
Perimeter of rectangle = 2 x length + 2 x breadth.
- iii. Write the formulae of volume and surface area of 3-D shapes  
e.g. Volume of cylinder =  $\pi \times r^2 \times h$ .
- iv. Write any 10 applications of mensuration in day-to-day (real) life.

**4. Symbols in Mathematics**

Write about 100 words on each of the following mathematical symbols, their origin and utility:

Similar ( $\sim$ ), Angle ( $\angle$ ), Congruence ( $\cong$ ), Approximation ( $\approx$ ), Percent (%)

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