General Guidelines for Students:

1. The Theme for this year’s Mathamity is “Math around us”.
2. Mathamity is an Intra-Class Competition, which is going to be held on 29-30th July.
3. It is compulsory for all the students to participate in MATHAMITY.
4. The project work with suitable model, chart and short explanation with a handwritten file (A4 size sheets to be used in the file) depicting their work should be submitted by each group.
5. The project should be cost effective and survey research based. Real data should be collected for statistical projects.
6. Only eco friendly material should be used by the students. (No plastic and no thermocol)
7. Project submitted should be child’s own creativity. Project will be disqualified if the professional’s help is taken.

ELEMENT ON WRITTEN REPORT/FILE

A project report should be written on A4 size paper under the following suggested points.

Cover page

Index

1. Introduction
2. Aim and Objectives
3. Work plan/Methodology
4. Observation
5. Data Analysis
6. Conclusion
7. How is research useful for further purpose?
8. Log sheets
9. Acknowledgement
10. Reference
THEME- Math In Architecture

PROJECT -
1. Architecture in High Rise Buildings
2. Architecture in Historical Monuments
3. Architecture In Group Housing Society
4. Architecture in Your Own House
5. Architecture in Your School Building
6. Architecture in Designing of Mall

YOUR WARD BELONGS TO ______ GROUP AND YOUR TOPIC IS

____________________

<table>
<thead>
<tr>
<th>S.no</th>
<th>Name of students</th>
<th>Address</th>
<th>Phone Number</th>
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### Class- IX

**Topic: Math in Architecture**

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<thead>
<tr>
<th>Group Number</th>
<th>Class</th>
<th>Topic Of The Project</th>
<th>Name of students</th>
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</thead>
</table>
| 1.           | IX    | Architecture in Bhurj Khalifa | I. Reetvik Roy  
               |       |                      | II. Shubham Bharadwaj  
               |       |                      | III. Vibhor Jain  
               |       |                      | IV. |
| 2.           | IX    | Architecture in group housing society | I. Nikhil Kanyal  
               |       |                      | II. Rahul Narang  
               |       |                      | III. Remella S. Roh  
               |       |                      | IV. |
| 3.           | IX    | Architecture in Qutab Minar | I. Prachi Jaiswal  
               |       |                      | II. Sargam chhabra  
               |       |                      | III. Swati Prasad  
               |       |                      | IV. Shivani Tyagi |
Q.19 A labourer was hired for a month (30 days) on the condition that he will receive Rs 60 each day he works and will be fined Rs 10 each day he is absent. At the end of the month he received Rs 1380. How many days did he work?

Q.20 Write all the congruency criterion of triangles learnt in previous classes along their figures.
Class IX

Q.1 Find the value of a and b:
\[
\frac{\sqrt{3} + 1}{\sqrt{3} - 1} = a + b\sqrt{3}
\]

Q.2 If \( x = (2 + \sqrt{3}) \), find the value of:
\[
x^2 + \frac{1}{x^2}
\]

Q.3 Show that:
\[
\frac{1}{3 - \sqrt{8}} + \frac{1}{\sqrt{8} - \sqrt{7}} + \frac{1}{\sqrt{7} - \sqrt{6}} + \frac{1}{\sqrt{6} - \sqrt{5}} + \frac{1}{\sqrt{5} - 2} = 5
\]

Q.4 Express 0.585 in decimal form.

Q.5 Find the value of \( x \) if
\[
5(x-5)X3(2x-8) = 225
\]

Q.6 If each side of triangle is doubled, then find the percentage of increase in area?

Q.7 A parallelogram has two sides 60m and 25m and one diagonal 65m long. Find the area of the parallelogram.

Q.8 The base of an isosceles triangle measures 24cm and its area is 192cm\(^2\). Find its perimeter.

Q.9 A design is made on a rectangular tile of dimensions 50cm X 70cm as shown in fig. The design shows 8 triangles, each of sides 26cm, 17cm and 25cm. Find the total area of design and remaining area of tile.
Q.10  The sides of a triangular field are 41m, 40m and 9m. Find the number of rose beds that can be prepared in the field, if each rose bed, on an average needs 900cm² space.

Q.11  For the polynomial
   a. Degree of polynomial
   b. The coefficient of x³
   c. The coefficient of x⁶
   d. The constant term

Q.12  If p(x) = 10x -4x² -3; evaluate p(2)-p(-1)+ p(½)

Q.13  Using suitable identity evaluate
   a. 999²
   b. 101 X 102
   c. 103²

Q.14  Factorise the following:
   a. X² + 9x + 18
   b. 2x² - 7x - 15
   c. 6x² + 7x - 3
   d. 84 - 2r - 2r²
   e. 2x³ - 3x² - 17x + 30
   f. X² - 6x² + 11x -6
   g. 3x³ - x² - 3x +1

Q.15  Expand the following:
   i. (4a – b + 2c)²
   ii. (-x + 2y – 3z)²

Q.16  Plot the following points and check whether they are collinear or not:
   i.  (1,3) (-1, -1) (-2, -3)
   ii.  (1,1) (2, -3) (-1,-2)
   iii.  (0,0) (2,2) (5,5)(-1,-1)

Q.17  Three vertices of a rectangle are (3,2)(-4,2)and. (-4,5).Plot these points and find the coordinate of the fourth vertex.

Q.18  In a factory women are 35% of all the workers, the rest of the workers being men. The number of men exceeds that of women by 252. Find the total number of workers in the factory.
Q.19 A labourer was hired for a month (30 days) on the condition that he will receive Rs 60 each day he works and will be fined Rs 10 each day he is absent. At the end of the month he received Rs 1380. How many days did he work?

Q.20 Write all the congruency criterion of triangles learnt in previous classes along their figures.
1. Learn symbols of all the elements.
2. Prepare a herbarium file containing at least 20 leaves.
3. Collect information about following scientists.

<table>
<thead>
<tr>
<th>NAME OF THE SCIENTIST</th>
<th>ROLL NO. OF THE STUDENT</th>
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<tbody>
<tr>
<td>(a) J.J. Thomson</td>
<td>1.</td>
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<td>(b) Ernest Rutherford</td>
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<td>(c) G.P. Thomson.</td>
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<td>(d) Neil 's Bohr</td>
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<td>(e) James Chadwick.</td>
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<td>(f) Aristotle</td>
<td>6.</td>
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<td>(g) Newton</td>
<td>7.</td>
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<td>(h) James Prescott joule</td>
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<td>(i) H.R. hertz</td>
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<td>(j) Robert hook</td>
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4. Make any two toys based on laws of motion using old material available at home.

CLASS IX

Computer

Do Excel Activity 3.3 & 3.4 and get the print out.

SST

Prepare a project file on perennial and non-perennial rivers of India.

Sanskrit

1. सूर्ख सुंदर स्वरुप का संग्रह अभिरंधित करें।
2. स्थवर परेषायः। श्रीमद्भुस्तम ये प्रयोगात्मक 15-15 लाइनें लिखें।
3. कोई भी सैन्धको आधारोलेन्दो १०५ अत्ते दे।
ENGLISH

1. Prepare a PPT on the given lessons (roll no. wise)
   - The Brook (1,2)
   - The Road Not Taken (3,4)
   - How I Taught My Grandmother (5,6)
   - A Dog Named Duke (7,8)
   - The Man Who Knew Too Much (9,10)

2. Prepare a speech on the following topics (roll no. wise)
   - Advertisements are Misleading. (1-3)
   - Reality Shows are Becoming Too Real (4-6)
   - Technology: a Nurturing ground For Crime (7-10)

3. There is an English Efficiency test on 8 July 2011. Prepare reading comprehension, grammar topics and the writing skills for the same.