**ATUL VIDYALAYA**
**Comprehensive Lesson plan**

**Subject:  MATHS**

**Std: X**

**Topic  : SYMMETRY**

**Total  No. of periods required to complete the topic : 6**

**Scope of topic : Lines of symmetry of an isosceles  triangle, equilateral triangle, rhombus , square , rectangle, pentagon, hexagon, octagon, and diamond shaped figure. To draw the rest of the figure based on the given lines of symmetry (neat recognizable free hand sketches acceptable)**
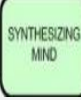
| GLOBAL GOALS |
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| • To identify and appreciate symmetry in nature and manmade objects. |
| • To understand the applications of symmetry in day to day life. |
| • To make symmetrical figures. |

| GENERAL GOALS: |
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| • To acquire knowledge and understanding of the terms, symbols, concepts, principles, processes, proofs of mathematics. |
| • To develop an understanding of mathematical concepts and their application to further studies in mathematics and science. |
| • To develop skills to apply mathematical knowledge to solve real life problems. |
| • To develop drawing skills of reading charts and graphs. |
| • To develop an interest in mathematics. |

| PERIOD | CONTENT | SPECIFIC GOALS | OUTCOME | LEARNING ENGAGEMENTS | TOOLS STRATEGIES RESOURCES | LEARNING PERSPECTIVE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | MI | HATS | BLOOMS | MINDS | CONNECTION |
| 1 | Introduction to symmetry (definition) Lines of symmetry Point of symmetry. | To define symmetry. To draw the number of lines of symmetry in a given figure. | Students will identify objects with symmetry from the surroundings. | Students will move in the campus to find out the symmetry in nature. | **Brain storming, Reflecting, observing Thinkers key: The picture What if: What if our body is not symmetrical? Think pair share. Refer to LA 1 ( Slide 1 to 11)** |  Nature Smart (Naturalist)  Self Smart (Intrapersonal)  Picture Smart (Spatial/Visual) |  Facts  Creativity |  Understanding Remembering |  DISCIPLINED MIND | Science Language Art |
| 2. | To draw symmetrical objects | To recognize symmetrical figures. | Students will be able to compare and construct symmetrical figures. Students will identify why it is symmetrical or not symmetrical. | Students will draw, cut, fold and check whether the figures are symmetrical. | **Prediction Brain storming Refer to LA 1 (slide 12 to 36)** |  Body Smart (Bodily-Kinesthetic)  Picture Smart (Spatial/Visual) |  Process |  Analyzing Applying |  SYNTHESIZING MIND | |

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| 3 | Symmetry in quadrilaterals | To understand their number of lines of symmetry | Students will use symmetry to differentiate quadrilaterals. | Students will draw different types of quadrilaterals and understand their symmetry. | **Sequence chart, decision making, Analyzing Venn diagram Refer to LA 2** | Body Smart (Bodily-Kinesthetic) | Creativi | Science, Art, Geography |
| 4 | Plotting triangles on graphs to find the lines of symmetry | To understand the types of triangles formed using lines of symmetry | -Students will apply symmetry to find the common lines of symmetry between two figures -Students will use symmetry find the areas of triangles | Students will be engaged in doing graph activity. | **Graphic organizer, Reflecting Refer to LA 3** | Body Smart (Bodily-Kinesthetic) | Proces Creativity | Art |
| 5 | Completing the figures | To complete the figures with the given dotted lines of symmetry | Students will learn to make symmetric shapes according to the given conditions | Students will use the tracing paper effectively to complete the given figure | **Analyzing, Reflecting, Evaluating Refer to LA 4** | Body Smart (Bodily-Kinesthetic) | Proces | Science Art History |
| 6 | Recapitulation and forming new figures | To develop creativity in the minds of the students | Students will efficiently use the skills acquired through symmetry, in real life | Students will be engaged in doing activity | **Interpersonal skills, creativity. Refer to LA 5, LA 6 SA 1, SA 2** | Body Smart (Bodily-Kinesthetic) People Smart (Interpersonal) | Creativi Benefits | Art, craft, science |

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         AUTHOR          : M.L. AGGARWAL
         PUBLICATIONS: AVICHAL PUBLISHING COMPANY


II.     REFERENCE BOOK/S: CONCISE MATHEMATICS
         AUTHOR                 :      K.BANSAL
        PUBLICATIONS        : SELINA


III.    WEBSITES:

        i. Arvind gupta.com

        ii. I love math.com

      iii. Google.com