

Geometric Creature

SOL Target Objective: Mathematics 3.18 - Geometry

The student will analyze plane and solid geometric figures (square, rectangle, triangle, cube, rectangular solid, and cylinder) and identify relevant properties, including the number of corners, square corners, the shape of faces, and edges.

STL Target: Standard 9 Students will develop an understanding of engineering design.

- C. The engineering design process involves defining a problem, generating ideas, selecting a solution, testing the solutions(s), making the item, evaluating it, and presenting the results.
- D. When designing an object, it is important to be creative and consider all ideas.

Prior Knowledge & Skills	Materials & Preparation	Safety Issues	Class Management	Materials Provided	Time Management
<p>Exposure to Target SOL 3.18.</p> <p>Some understanding of the design process.</p> <p>Exposure to pneumatic systems if materials are available.</p> <p>Exposure to simple machines (Science SOL 3.2)</p>	<p>Check design brief for allowed materials. Substitution of materials may be made by the teacher.</p> <p>Collect in advance: empty food packaging paper towel & toilet paper rolls tissue boxes, etc.</p>	<p><u>Syringes:</u> Never touch syringes not provided by the teacher.</p>	<p>Small group</p> <p>Each child keeps own guided portfolio.</p>	<p>Design Brief: Geometric Creatures</p> <p>Guided Portfolio</p> <p>Rubric Assessments:</p> <ul style="list-style-type: none"> • Project Rubric • Oral Communication Skills 	<p>Session 1: Introduce Design Brief and planning 45 min.</p> <p>Session 2: Building 60 min.</p> <p>Session 3: Sharing & Evaluation 45 min.</p>

Supporting SOL Objectives:

Science: 3.1 The student will plan and conduct investigations.

3.2 The student will investigate and understand simple machines and their uses.

Math: 3.14 The student will estimate and then use actual measuring devices with metric and U.S. Customary units to measure.

English: Oral 3.1 The student will use effective communication skills in group activities.

3.2 The student will present brief oral reports.

Reading 3.5 The student will demonstrate comprehension of a variety of printed materials.

Supporting STL Standards:

8. Students will develop an understanding of the attributes of design.

10. Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving

11. Students will develop abilities to apply the design process.

