

## PROJECT BASED UNIT DEVELOPMENT TEMPLATE

Unit Title: Simple Machines

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Grade Level: 5/6

Allocated Time (Days): 16

### Section I: Identifying Standards, Level of Application and Central Theme

<b>Common Core</b>	<b>UNIT THEME: Section I A:</b> What is the Essential Question in the Theme?  How do simple machines help you?	
<input checked="" type="checkbox"/> ELA  <input checked="" type="checkbox"/> Math  <input checked="" type="checkbox"/> Science  <input checked="" type="checkbox"/> Technical	<b>Section I B: Identifying Standards:</b> What content standards does this unit address? (Please include the all subject areas checked on the left.)  Science 7.2.3.4 – Students will investigate and explain how simple machines multiply force at the expense of distance. 7.1.1.2 – Uses appropriate tools and mathematics to conduct an investigation  Math 6NS6 – Basic computation skills, addition, subtraction, multiplication, division 6G1/5NF4B – Area and perimeter of simple shapes 5MD1 – Conversion of measurements  ELA W63 – Write narrative to develop real or imagined experiences or events. Using sequences. W41 – Use adequate content specific vocabulary and technical terms with support. W66 – Use technology to produce and publish writing. W62 – Introduce a topic using strategies and graphics to aide in comprehension.  R166 – determine an author’s point of view and purpose in a text.	
<b>Section I C:</b> Define the instructional purpose for the unit of study in terms of relevance to real life applications. The existence of simple machines and function in real life. The use of appropriate tools and mathematical concepts to take measurements. Using vocabulary and text features to comprehend informational text.		
<b>Section I D:</b> Record below what students have to know and be able to do in order to meet selected targeted standards.		
<b>Students will know</b>	<b>Students will be able to do</b>	
What simple machines are (wheel and axel; Gears; pulleys; incline plane) The purpose of simple machines. What the metric system is. What text features are found in passages. Author’s purpose.	Measure distance to the closest mm. Identify simple machines. Convert measurements within the metric system. Calculate the area of simple shapes. Use appropriate tools and units of measurement. Correctly identify and use text features.	
<b>Section I E:</b> Identify essential questions that will be used in gaining student interest. How would measuring distance be an important skill in real life? What simple machines are present and used in your life? How do text features enhance your understanding of a passage?		

Unit Developer Template

**Section II: Complexity of Learning Task and Technology Standards**

<b>Section II A: Identifying the level of complexity for each task as matched to common core and NET standards.</b>	
<b>Identify Depth of Knowledge</b>	<b>Identify the learning task that the students will be experience.</b>
<input type="checkbox"/> 1 Awareness(Recall/Memorize) <input type="checkbox"/> 2 Comprehension <input type="checkbox"/> 3 Application(Demonstrate Understanding) <input type="checkbox"/> 4 Analyze/Hypothesize <input type="checkbox"/> 5 Synthesize/Process Information/Investigate <input type="checkbox"/> 6. Evaluation (Make Connections)	<ul style="list-style-type: none"> <li>- Simple Machine construction</li> <li>- Rube Goldberg research</li> <li>- Measuring objects</li> <li>- Scavenger hunt of simple machines in school environment</li> <li>- Designing a Rube Goldberg machine</li> <li>- Identifying simple machines</li> <li>- Blueprint construction</li> <li>- Procedure writing</li> <li>- Narrative passage writing</li> </ul>
<b>Identify Level of Application</b>	
<input type="checkbox"/> Quadrant A: Acquisition <input type="checkbox"/> Quadrant B: Application <input type="checkbox"/> Quadrant C: Assimilation <input type="checkbox"/> Quadrant D: Adaptation	
<b>Select matching NETS for Students</b>	
<input type="checkbox"/> 1.Creativity/Innovation <input type="checkbox"/> 2.Communication/Collaboration <input type="checkbox"/> 3. Research/Information Fluency <input type="checkbox"/> 4. Critical Thinking, Problem Solving, /Decision Making <input type="checkbox"/> 5. Digital Citizenship <input type="checkbox"/> 6. Technology Operations/ Concepts	

**Section II C:** What content language will be included in this unit? Content language will be a part of the ELL component of summer school.

- Simple Machine
- Gear
- Pulley
- Wheel and Axel
- Incline Plane
- Wedge
- Screw
- Compound Machine
- Distance
- Area
- Measure
- Metric System
- Meter
- Title
- Conversion
- Caption
- Diagram
- Headings
- Bullets

<p><b>Section II D:</b> Identifying technology tools as resources to methods and types of presentations that students will use to demonstrate their learning.</p> <p>Blog Laptop computer – Google forms, Google docs iPads – camera, iMovie QR Codes Internet resources</p>
<p><b>Section II E:</b> List non-related technology materials and resources needed to support unit standards.</p> <p>Auditorium/gymnasium location for machine construction. K’Nex build kit Rube Goldberg machine construction materials Rulers</p>

**Section III: Identifying Summative and Formative Assessment Types**

<p>Identify methods of summative assessment</p> <p>Rube Goldberg Machine and Presentation/display</p>	<p>Identify the performance assessment content standards measured.</p> <p>7.2.4.3 – simple machines 7.1.1.2 – using appropriate tools and measurement in an investigation W62 – using text features in a written sample W63 – accurate sequencing in a passage 5ND1 – measurements in metric system 6G1 – area of simple shapes.</p>	
<p>Develop Scoring Criteria</p>	<p>Identify tools that will evaluate end of unit assessment.</p> <p>Rubric</p>	
<p>Identify formative assessment types</p> <p>Quizzes (Google Forms) Ticket out Anecdotal Records Writing Samples Questioning</p>		
<p>Assessment Type</p> <p>Anecdotal Records Final exams Quizzes Reports Surveys Observations Rubrics Quizzes Essays Questioning</p>	<p>Learning Target</p> <p>Knowledge Reasoning Performance Product Development</p>	<p>Frequency</p>