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<td>Variables and Design</td>
<td>• Inv. 1.1: Air Trolleys *</td>
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<td>• Inv. 1.2: Controlled Experiment</td>
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<td>• Inv. 1.3: Design an Experiment</td>
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<td>• Inv. 1 Extension: Research careers</td>
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<td>• Inv. 1 Extension: Test another variable</td>
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<td>• Inv. 2.1: Air-Trolley Design Challenge *</td>
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<td>• Inv. 2.2: Engineering Design Cycle *</td>
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<td>• Inv. 2 Extension: Develop new air-trolley designs *</td>
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<td>• Inv. 2 Extension: Learn about engineering opportunities worldwide *</td>
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<td>• Inv. 3.1: Define a Problem *</td>
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<td>• Inv. 3 Extension: Discuss the implications of solutions *</td>
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<td>• Inv. 2 Ext.: Make a Water-Drop Microscope</td>
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<td>• Inv. 8 Ext.: Research How Cockroaches are Connected to Robots</td>
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<td>Human Systems Interactions</td>
<td>• Inv. 3 Ext.: Research Different Kinds of Hearing Aids</td>
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<td>Weather and Water</td>
<td>• Inv. 2 Ext.: Build a Wind Sock</td>
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| **Course**       | **Engineering Opportunity** |
| Chemical Interactions | • Inv. 6.1: Insulation *  
• Inv. 6.2: Thermos Design *  
• Inv. 8.3: Freezing Water * |
| Earth History    | • Inv. 6.1: Mapping Volcanoes and Earthquakes  
• Inv. 8.1: Introduction to the Project |
| Populations and Ecosystems | • Inv. 8 Ext.: Create a Wildlife Habitat at School  
• Inv. 9.1: Human Involvement  
• Inv. 9.2: Evaluating Solutions  
• Inv. 9.3: Presentations |

| Grade 8 |
|------------------|------------------|
| **Course**       | **Engineering Opportunity** |
| Electromagnetic Force | • Inv. 3.2: Building an Electromagnet  
• Inv. 3.3: Improving the Design *  
• Inv. 3 Ext.: Make a Rheostat  
• Inv. 3 Ext.: Build the Ultimate Electromagnet  
• Inv. 4.1: Electric Motors  
• Inv. 4.2: Electric Generators |
| Gravity and Kinetic Energy | • Inv. 4.1: Helmet Design Challenge *  
• Inv. 4 Ext.: Test Water Balloons |
| Heredity and Adaptation | • Inv. 3.3: Genetic Technology  
• Inv. 3 Ext: Research Ethical Concerns  
• Inv. 3 Ext: Follow up on Genetic Technology  
• Inv. 3 Ext: Research CRISPR, a Gene-Editing Tool  
• Inv. 3 Ext: Research Gene Drives |
| Planetary Science | • Inv. 5.2: Target Earth  
• Inv. 5 ext: Learn More About NASA DART Mission  
• Inv. 7.1: Where are the Planets?  
• Inv. 8.2: Explorations of the Solar System |
| Waves            | • Inv. 2.2: Bridge Collapse *  
• Inv. 2.3: Energy in Sound Waves *  
• Inv. 3.1: Mirrors  
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