**Preliminary Planning Sheet for a Science Task**

**Title of Task:** How Strong is Your Electromagnet

**State Standard(s) Addressed:** Physical Science (Motion and Forces, Transfer and Transformation of Energy) Scientific Method

<table>
<thead>
<tr>
<th>Scientific Concepts and Content</th>
<th>Scientific Procedures</th>
<th>Tools and Technologies</th>
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</table>
| • Electrical Circuits (current travels through a complete or closed circuit)  
• Electromagnetism (current moves through a wire and nail creating a temporary magnetic force)  
• Physical properties of magnetic and non-magnetic materials  
• Magnets have an invisible force field  
• The more current put through a circuit, the greater the amount of magnetism created | • Observation skills  
• Making predictions/hypotheses  
• Understanding cause and effect  
• Collect, record and interpret data  
• Control variables  
• Draw conclusions  
• Ask questions | • Constructs an electromagnet using a nail, wire, and battery (ies)  
• Coils the wire around the nail tightly so that magnetism is generated |

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<tr>
<th>Scientific Representation and Notation (Communication)</th>
<th>Possible Solutions</th>
<th>Related Tasks</th>
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| • Data chart/table with title and labels  
• Data recorded in chart | • Electromagnet works and attracts a number of paper clips  
• Testing and data chart/table is complete and organized  
• Conclusions are accurate and relevant | • Learning about Magnetism: Part 1 and 2  
• How Powerful is a Magnet?  
• Can You Light the Bulb  
• Can You Get 2 Light Bulbs to Light?  
• Learning about Electricity: Part 1 and 2 |