Name of Authors: Rhona Bowen, Andrew Bowen, Pat Thompson, Stephanie Quinn

Name of Problem: Can You See Me Now???

Content Area: Science – Electricity

Unit: Circuits

Standards:
4-5 The student will demonstrate an understanding of the properties of light and electricity. (Physical Science)
   - 4-5.7 Illustrate the path of electric current in series and parallel circuits.

Prior Learning: Switches

Big Ideas:
• Student will create floor plan of house
• Student must find area and perimeter
• Student considers most efficient use of materials
• Student will create switches for each room
• Analyze which circuit would be the best use for the house

Essential Question:
How do you wire a house so lights can be turned off individually?

Materials: Wires, Bulbs, Motors, Paperclips, Clips, and Cardboard

Scenario: You have been put in charge in creating the electrical unit of a house. The house has 5 rooms. Each room must have a light. Each room must have a light that can be turned off and on individually.

Content Information: Refer to supporting documents for Standard 4-5.7

Deliverables:
Using only materials supplied by your instructor, your team must build a model floor plan of a home with 5 rooms. There must be a light in each room. Each light must turn on and off by itself.

Parameters: The completed floor plan must:
• Be powered by 1 power source
• Not exceed 3600 square centimeters

Assessment:
• Formative observations by teachers
• Journaling different processes
• Sketch
• Rubric – Student/teacher created
   - Performance of creation
   - Creativity

Extension Activities: Allow students to create other products based on materials based on materials used in previous objects.
District 1 Spartanburg STEM Action Plan

- Math Sheet detailing perimeter and area and cost sheet

  - **Big Ideas**
    - Take everyday, ordinary objects and make them useful and extraordinary through the use of technology and engineering
    - Use STEM into instruction
    - Teachers will implement lessons to allow students to see the difference between the natural world and human made world
    - Incorporate STEM’S activities into classroom instruction

<table>
<thead>
<tr>
<th>Goals and Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math and Science teachers will plan and implement 1 STEMS activity per 9 weeks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Assessments</th>
</tr>
</thead>
</table>
| Q1- Weather  
Q2 – Astronomy  
Q3- Electricity  
Q4 Organisms  
Use scope and sequence to identify/plan science and math content topic to integrate STEM into a unit of study per quarter. | Rubric should be student/teacher created  
Journals used to observe steps  
Performance based activities will be observed by the teacher who will make formative assessment. Students will journal their process. The final outcome will be graded with a rubric graded in conjuncture with students. |
## District 1 Spartanburg STEM Action Plan

<table>
<thead>
<tr>
<th>Resources</th>
<th>Classroom Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers will use instructional funds, grant money, personal funds, and community resources (Business, Parents, Volunteers, and civic organizations).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Experiences</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involve teachers in ongoing STEM staff development which included a focus on the SC next generation Science standards, the technology and engineering standards as well as CCSS</td>
<td>See Beginning</td>
</tr>
</tbody>
</table>