Tower Masters Research Worksheet (GrK-2) Answer Key

1. **Define** by cutting and pasting from the picture choices below:
   An **engineer** is a person who uses:
   - ![Images of blocks and a scientist]
   - ![Image of a person]
   ![Great Idea light bulb]

   to create to solve a problem in the world.

   A **civil engineer** is a person who designs all kinds of structures, including public works such as:
   - Golden Gate Bridge
   - Statue of Liberty
   - Eiffel Tower
   - Bridge over a river

Choose from the following items to cut and paste answers to questions 1 and 2.

<table>
<thead>
<tr>
<th>Research the problem</th>
<th>Imagine: Develop possible solutions</th>
<th>Improve: Redesign as needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Bridge with an X]</td>
<td>![Magnifying glass and pencil]</td>
<td>![Light bulb with an idea]</td>
</tr>
<tr>
<td>Ignore the problem</td>
<td>Create: Build a prototype</td>
<td>Test and evaluate prototype</td>
</tr>
<tr>
<td>Plan: Select a promising solution</td>
<td>Create a hypothesis</td>
<td>Ask: Identify the need and constraints</td>
</tr>
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2. The **engineering design process** is a series of steps that guides engineers as they design and redesign structures and other inventions without wasting a lot of money, time and materials.

![Engineering Design Process Diagram]

- **Ask:** Identify the need and constraint
- **Research the problem**
- **Imagine:** Develop possible solutions
- **Plan:** Select a promising solution
- **Create:** Build a prototype
- **Test and evaluate prototype**
- **Improve:** Redesign as needed