

## **Problem-Based Learning Unit Template**

### **Topic**

**Electrical Energy Transformation**

### **Goals/Objectives**

- 1. Investigate electrical circuits & how they work.**
- 2. Determine how electricity and magnetism are related.**
- 3. Discover how mass affects force.**
- 4. Investigate how toy vehicles are designed and create a toy vehicle that changes electrical energy into light and motion.**

### **Theme**

**A toy vehicle uses electricity, electromagnetism and energy to move.**

### **Scenario**

**The Toymith Toy Company is having a contest to design a new vehicle that changes electrical energy to light and motion.**

### **Culminating Activity**

**Design, build & submit a proposal for a self-propelling vehicle which lights up. Students will also write a letter to the toy company with their proposal.**

### **Problem Question**

**How do toy vehicles use electricity, electromagnetism and energy to move?**

### **Student Role**

**Students will be engineers designing their vehicles and testing them. They will also need to market their vehicle by writing a letter and submitting their proposal.**

