

## **Electric Excitement Content Standards**

### **Lesson 1: Magic of Electricity**

#### **Grades 4-5**

**\*Project Area Skill (PAS) refers to the subject matter based skill which youth demonstrate in relation to the correlating content standard.\***

**Objectives:**

#### **Career Readiness-**

- 1. Students will identify their career interests and aptitudes to develop an educational plan which supports personal career goals.**

**Benchmarks: K-4: B; 5-8: A**

**Project Area Skill: The youth will identify with career skills utilized by electricians and scientists. They will perform experiments to learn how every day tools such as flashlights and switches are created.**

- 2. Students will utilize and manage resources effectively to produce quality services and products.**

**Benchmarks: K-4: A,B,C; 5-8: B**

**Project Area Skill: Before beginning the workbook activities, the youth must purchase various materials such as wire, batteries and light bulbs. They must set goals as to when they are going to purchase the materials and collaborate with their parents and peers to acquire the materials they need.**

- 3. Students will demonstrate the technological knowledge and skills required for future careers.**

**Benchmarks: K-4: A,C,D; 5-8: A,C**

**Project Area Skill: The youth will create a chart listing the various ways technologies involving electricity affect their lives every day. The youth will also use age appropriate tools to create small motors, switches and flashlights as well as a variety of circuits to understand how the basic technologies in our lives.**

4. Students will develop and demonstrate responsible and ethical workplace behaviors.

**Benchmarks:** K-4: B,C,D,E; 5-8: A,B,D

**Project Area Skill:** The youth will interact positively with one another as they participate in the workbook activities. They will also learn four safety tips to practice as they are working with electricity.

5. The students will develop effective leadership, interpersonal, and team skills.

**Benchmarks:** K-4: B,C; 5-8: A,C

**Project Area Skill:** While working on the activities listed in the workbook, the youth will interact positively with their peers. They will also understand the importance of cooperation and working as a team to not only accomplish their goals but to have fun as well.

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#### Language Arts-

- 1. Reading and listening for comprehension: Students will apply strategies and skills to comprehend information that is read, heard and viewed.**

**Benchmarks: K-4: A,B,C,D; 5-8: A,C**

**Project Area Skill: The youth will read the text which introduces their next activity. They will learn the background and history of the subject as well as learn new vocabulary that is commonly used in that area of electricity.**

- 2. Writing and Speaking for Expression: Students will communicate effectively through speaking and writing.**

**Benchmarks: K-4: A,C; 5-8: A**

**Project Area Skill: The youth will use charts to document their observations of electrical events and experiences. They will also discuss the outcome of the activity with their group leader using the questions listed at the end of the activity in the workbook.**

- 3. Literature and Media: students will use literature and media to develop an understanding of people, societies, and the self.**

**Benchmarks: K-4: A; 5-8: A**

**Project Area Skill: The youth will read about the historical figures who stand behind certain inventions such as Edison inventing the light bulb and the Italian inventor Volta who created the first battery. They will understand how culture and circumstance have played a big role in how we understand electricity today.**

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**Math**

- 1. Measurement: students will understand measurement systems and applications.**

**Benchmarks: K-4: A; 5-8: A**

**Project Area Skill: The youth will use tools to perform measurements for many of their experiments. They will follow written instructions as well as pictorial diagrams to determine what length they need their materials and then measure the correct length.**

- 2. Data Analysis and Probability: students will understand how to formulate questions, analyze data, and determine probabilities.**

**Benchmarks: K-4: A,B,C; 5-8: A,C**

**Project Area Skill: The youth will use charts to document observations from their experiments. They will use the information they have recorded to understand the outcome of the experiment, participate in discussion and create more questions.**

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**Science-**

**Strand I: Scientific Thinking and Practice**

**Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.**

**K-4 Benchmarks: I,II,III**

**5-8 Benchmarks: I,II,III**

**Project Area Skill: The youth will conduct many experiments to learn how electricity travels and is utilized in every day tasks such as switches and flashlights. Furthermore, they will use charts to document their observations and participate in discussions with peers and group leaders based on the findings of their experiments.**

**Strand II: Content of Science**

**Standard I: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.**

**K-4 Benchmarks: I,II,III**

**Project Area Skill: The youth will analyze electricity as well as currents, voltage, watts and other electrical areas. They will understand that electricity can be run through wires to create light and motion.**

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#### **Social Studies-**

- 1. History: Students are able to identify important people and events in order to analyze significant patterns, relationships, themes, ideas, beliefs, and turning points in New Mexico, United States, and world history in order to understand the complexity of the human experience.**

**Benchmarks: K-4: C; 5-8: C**

**Project Area Skill: In each activity the youth will be introduced to the inventor of the area they are studying. The brief history of inventions and circumstances gives youth a view into how experiments and every day life can create opportunities for discovery. Furthermore the youth will understand how those inventions are used in everyday life.**