Welcome to Electricity Explored: Shockingly Cool Electronics, Semesters 1 & 2

This course is meticulously designed to align with state standards and targeted learning objectives, ensuring comprehensive coverage of essential knowledge and skills required for student success.

Course Description:
Dive into the electrifying world of electronics with **Electricity Explored: Shockingly Cool Electronics**! This self-paced course empowers high school students to uncover the fascinating principles of electricity and circuitry.

Through engaging hands-on experiments and creative projects, you'll master the basics of circuit design, learn to work with electronic components, and apply your knowledge to construct functional devices. Emphasis is placed on problem-solving, innovation, and real-world applications, sparking curiosity and creativity in the field of electrical engineering.

Syllabus
Unit 1: Fundamentals of Electricity
- Understanding the basics: voltage, current, and resistance.
- Exploring Ohm's Law and its applications.
- Investigating sources of electricity and energy conversion.

Unit 2: Circuit Design and Components
- Introduction to circuits: series, parallel, and combination.
- Working with resistors, capacitors, diodes, and transistors.
- Creating circuit diagrams and understanding their functions.

Unit 3: Hands-On Circuitry
- Building simple circuits with breadboards.
- Experimenting with LED lighting systems.
- Troubleshooting common circuit issues.

Unit 4: Applied Electronics
- Exploring sensors and input/output devices.
- Designing and creating functional electronic gadgets.
- Applications of electronics in daily life and industry.

Unit 5: Innovation and Problem-Solving
- Collaborative projects: designing circuits for specific challenges.
- Understanding the basics of microcontrollers and programming.
- Final project: creating a personalized electronic device.

Learning Outcomes
By the end of the course, students will:
1. Understand the principles of electricity, including voltage, current, and resistance.
2. Develop proficiency in designing and assembling circuits.
3. Identify and use common electronic components effectively.
4. Apply problem-solving and critical thinking skills to real-world electronic challenges.
5. Create and showcase functional electronic projects that demonstrate innovation and creativity.

Conclusion
Electricity Explored: Shockingly Cool Electronics is more than just a course—it's an electrifying adventure into the heart of electrical engineering. With its hands-on approach, this course builds practical skills while igniting a passion for innovation. Discover the power of electricity and create something shockingly cool today!