MODIFIED UBD LESSON PLAN

STEM 101

COURSE: Introduction to Engineering				
UNIT: Basic Electricity	EXERCISE: Short Circuits and Protection Devices	TIME FRAME: 1 - 2 Hours		
T PREPARATION: Summary of "to do's" that the teacher should understand and prepare before bringing this lesson to the classroom.				

Information:

Before starting this assignment, students should have an understanding of material covered in:

✓ Short Circuits and Protection Devices

Materials:

Tools:

• Internet

SAFETY: Summary of safety strategies in the lesson.

There are no safety strategies for this exercise.

S1 DESIRED RESULTS:			
ESTABLISHED GOALS:	TRANSFER: Students will be able to independently use their learning to		
Problem Solving Techniques and Applications Standards:	 Identify and understand protection devices; 		
Teachers should use the STEM Academy	Understand the hazards of an electrical or electronics laboratory.		
Standards Correlation System available in	MEANING:		
the STEM Connections area of a unit to extract specific standards and insert these standards here.	UNDERSTANDINGS Students will understand that	ESSENTIAL QUESTIONS Students will keep considering	
	 There are products available to prevent products from short circuiting and destroying other products. 	 Other situations and conditions in an electric that cause harm to devices; Other devices similar to a fuse. 	
	ACQUISITION OF KNOWLEDGE AND SKILL:		
	Students will know	Students will be skilled at	
	The correct use of a fuse;Conditions that can cause electric shock.	 Constructing circuits; Identifying the different parts of circuits. 	



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S 2	EVIDENCE:	
	EVALUATIVE CRITERIA:	ASSESSMENT EVIDENCE:
		Performance Task(s):
		Short Circuit and Protection Devices:
•	Correct answers	In this assignment, students will learn and be tested on various situations where a short circuit will occur.
		Other Evidence:
•	Completed successfully	Student worksheet
•	Correct answers	Online quiz

S3 LEARNING PLAN: Summary of Key Learning Events and Instruction

Outline:

1. Set Introduction

Take this time to briefly review some of the safety rules in your lab that deal with electricity. During this unit your students will be dealing with different electrical components that could be dangerous if handled wrong.

2. Review

Review the discussion section with your students. Provide as many hands-on examples as you can.

3. Fuse Examples

When covering the section on fuses, bring in several different types for your students to observe. Provide both good and bad fuses so they see the difference. These can be cheaply purchased at any hardware store.

4. Journal

At the end of the discussion have your students open their student journals and complete the corresponding questions under the procedure section.

5. Quiz

A short five question T/F quiz is available for your students to complete at the end of class.

Progress Monitoring:

- The instructor will need to monitor the classroom, checking student's work and ensuring students are on task and following directions.
- Ensure students store their projects at the end of class and leave all materials in the room.
- At the end of the activity, post student projects in the room and provide appropriate feedback.



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DIFFERENTIATION: Summary of Key Differentiation Techniques

Please use this space to insert your differentiation techniques. Depending on the needs of students, various techniques might be needed in a classroom, therefore use the information below and experts in the area needed to design your plan for differentiation.

The ASCD Study Guide for Integrating Differentiated Instruction and Understating by Design: Connecting Content and Kids. by Carol Ann Tomlinson, Jay McTighe

Integrating Differentiated Instruction and Understating by Design: Connecting Content and Kids. by Carol Ann Tomlinson, Jay McTighe ISBN-13: 978-1416602842 ISBN-10: 1416602844

Differentiating Reading Instruction by Laura Robb. ISBN13: 9780545022989

A Teacher's Guide to Differentiating Instruction The Center for Comprehensive School Reform and Improvement

CAREER CONNECTIONS: Summary of Career Opportunities Associated with this Lesson

Please use this space to insert careers that might be connected to this lesson. This section will need continuous updating as new careers and emerging technologies change the opportunities available in the workforce.

Good sources for career connections:

Occupational Outlook Handbook http://www.bls.gov/ooh

The National Career Clusters® Framework http://www.careertech.org/career-clusters

KEYWORDS: Please Insert Keywords from this Lesson with their Definitions

Please use this space to insert keywords and their definitions Use resources like <u>dictionary.com</u> to find definitions to your keywords

