MODIFIED UBD LESSON PLAN

STEM 101

COURSE: MIDDLE SCHOOL		
UNIT: ELECTRICITY	**EXERCISE:** BUILD YOUR OWN CIRCUITRY GAME	**TIME FRAME:** 3-4 Hours

PREPARATION: *Summary of "to do's" that the teacher should understand and prepare before bringing this lesson to the classroom.*

Teachers will need to ensure that the proper supplies are available for students to build their solutions.

You will need these items:

Materials:

- Build Your Own Circuitry Game from Stem 101 website- https://stem101.org/

SAFETY: *Summary of safety strategies in the lesson.*

S1 DESIRED RESULTS:

ESTABLISHED GOALS:

Problem Solving Techniques and Applications Standards:

TRANSFER:

Students will be able to independently use their learning to…

- Better understand electricity and circuits

MEANING:

UNDERSTANDINGS
Students will understand that...

- A circuit needs to be closed for current to flow and a LED to light up
- How electricity flows

ESSENTIAL QUESTIONS
Students will keep considering...

- How electricity is used and functions in everyday settings

ACQUISITION OF KNOWLEDGE AND SKILL:

Students will know...

- The difference between series and parallel circuits
- What is an open circuit and closed circuit
- How current flows
- What a LED is and how it works

Students will be skilled at...

- Designing a circuit
- Creating a circuit
- Testing a circuit
- Troubleshooting a circuit

S2 EVIDENCE:

EVALUATIVE CRITERIA:

ASSESSMENT EVIDENCE:

Performance Task(s):

Task Placeholder
The Build Your Own Circuitry Game will be assessed based on the set up and proper function. The aesthetics should also be graded.

Other Evidence:

- End of unit quiz

S3 LEARNING PLAN: *Summary of Key Learning Events and Instruction*

1. Introduce Activity

a. Create a circuitry game that will buzz and light up when you touch the sides of the board while trying to pick up random pieces out of the image.

2. Brainstorm

- **a.** Students research series and parallel circuits and piece designs

3. Construct

- **a.** Using supplies given, students will construct a circuitry game

4. Test

- **a.** Test the game for proper operation.

5. Communicate Results

- **a.** Show the working circuitry game to instructor

Progress Monitoring:

Teacher should observe students and provide on-going feedback during the activity. While introducing the unit, the teacher will pause and ask for questions to make sure everyone understands.

DIFFERENTIATION: *Summary of Key Differentiation Techniques*

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*

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*

Use resources like dictionary.com to find definitions to your keywords