|  |  |
| --- | --- |
|  | 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:*** 1/8” Corrugated cardboard (5” x 7”)
* Aluminum foil tape
* White LED
* 3V coin battery (CR2032)
* Clear tape

**Tools:*** Ruler
* Pencil
* Cutting Mat
* Hobby knife; Box cutter; Scissors

  |
|  | Safety: *Summary of safety strategies in the lesson.* |
|  |
|  | Desired Results:  |
| Established Goals: |  | Transfer: |
| *Problem Solving Techniques and Applications Standards:*  | *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
 |
|  | Evidence:  |
| Evaluative Criteria: |  | Assessment Evidence: |
|  | *Performance Task(s):* **Task Placeholder**The flashlight the student designs will be assessed based on the set up and proper function. The aesthetics should also be graded. |
| *Other Evidence:* * End of unit quiz
 |
|  | Learning Plan: *Summary of Key Learning Events and Instruction* |
| **1. Introduce Activity**1. Create a flashlight that will light up when you push a button

**2. Brainstorm**1. Students research and develop a few design ideas for a greeting card. Could be a birthday card, get well soon card, etc.…

**3. Construct**1. Using supplies given, students will construct a working flashlight

**4. Test**1. Test the flashlight for proper operation.

**5. Communicate Results**1. Show the working flashlight 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 McTigheIntegrating Differentiated Instruction and Understating by Design: Connecting Content and Kids.by Carol Ann Tomlinson, Jay McTigheISBN-13: 978-1416602842 ISBN-10: 1416602844Differentiating Reading Instruction*by Laura Robb.*ISBN13: 9780545022989A Teacher's Guide to Differentiating InstructionThe 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](http://dictionary.reference.com/) to find definitions to your keywords |