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Lesson: Electricity and Energy

Name:

Teacher:

Date:

Turning Fruit into Power – Lemon Battery Free Worksheet – STEM Scholars Hub

Instructions: Read each question carefully and choose the best answer.

1. What is the main source of energy in a lemon battery?
 - A. Solar energy
 - B. Chemical energy
 - C. Mechanical energy
 - D. Heat energy
2. In a lemon battery, which metal acts as the anode?
 - A. Copper
 - B. Zinc
 - C. Aluminum
 - D. Iron
3. Which metal acts as the cathode in a lemon battery?
 - A. Zinc
 - B. Copper
 - C. Silver
 - D. Magnesium
4. Why does the LED light up when connected to the lemon battery?
 - A. Because lemons produce light naturally
 - B. Because the chemical reaction between metals and lemon juice produces an electric current
 - C. Because of the sugar content in the lemon
 - D. Because the lemon changes temperature
5. What is the role of the lemon juice in the battery?
 - A. Acts as a conductor of electricity (electrolyte)
 - B. Provides sugar for energy
 - C. Makes the battery last longer
 - D. None of the above
6. What happens when multiple lemons are connected in series?
 - A. The voltage decreases
 - B. The LED will not light
 - C. The voltage increases
 - D. The battery stops working
7. Which of the following is a safety precaution for the lemon battery experiment?
 - A. Drink the lemon juice after the experiment
 - B. Use the knife carefully (teacher use only)



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- C. Insert metals too close so they touch
- D. Connect wires with wet hands
- 8. Which observation shows that chemical energy is converted into electrical energy?
 - A. The lemon feels heavy
 - B. The LED lights up
 - C. The lemon changes color
 - D. The zinc nail dissolves
- 9. If the LED does not light up, which of these could be a possible reason?
 - A. The zinc and copper are touching
 - B. The wires are not connected properly
 - C. The lemon juice is too acidic
 - D. The lemon is rolled too much
- 10. How could you increase the voltage of your lemon battery?
 - A. Use a smaller lemon
 - B. Connect more lemons in series
 - C. Use only copper
 - D. Remove the zinc nail

Answer Key – Lemon Battery Worksheet

- 1. B
- 2. B
- 3. B
- 4. B
- 5. A
- 6. C
- 7. B
- 8. B
- 9. B
- 10. B