

Name:

Date:

Class:

Energy Innovator Student Handout

Introduction

Energy can be created in many ways and its uses are limitless! However, energy can become expensive and, depending on the type of energy source, harmful to the environment. As an effort to save the environment and reduce costs, your challenge is to create a generator using some household items! You will also have to create an advertisement to convince your audience why your product is the best option for their location.

Teacher Demonstration

What are some components of the magnetic field that are normally not visible to the naked eye?

Describe your observations: _____

Design Time

After you have completed your observation with the teacher demonstration, form a group of no more than 4 people total. Each person will have to assign a role for their project (project leader, financial manager, salesperson, and designer). You cannot spend more than \$500 on your project. Before you begin creating your generator, you have to get your materials, procedure, design, and advertisement approved!. Make sure you follow the rubric below!

Materials & Cost

Include all your materials and costs here. You will also have to explain why you are choosing the amount of materials you have written down. If you are planning on getting a "refund," highlight those items.

	Item	Amount (number)	Cost	Reason
Total Cost				

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Procedure:

*List your procedure out as steps. Make sure you do not skip any! Someone should be able to read this and recreate your generator. **Have your teacher initial your plan and cost worksheet before moving on.** Initial: _____*

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Analysis Questions

- 1) What was your end result? Did your generator achieve your desired results and goal?

- 2) What were some challenges that your group encountered?

- 3) How tightly did you have to coil the copper? Was it as effective if your coils were loose? If you did not have to coil your copper, explain why you think why coiling copper is important.

- 4) Why are your LED lights able to light up? If they did not light up, what could have been the reason(s)? Include everything you may believe that is able to contribute to this result.

- 5) What are some ways your generator can be helpful to the environment?

- 6) What is your projected time frame of how sustainable your generator will be?

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7) What is the cost/benefit analysis of replacing vs. rebuilding your generator? Are you able to replace any of your generator parts easily?

8) What is your targeted audience in your advertisement? Why did you choose this location?

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Rubric

Points Possible	Points Awarded
Generator was able to spin (10)	
LED Lights turned on (15)	
Coils are secure and wrapped appropriately, minimum 2 (20)	
Magnets are attached to the CD (5)	
Stayed under budget (10)	
Decorations requirements met (10)	
Advertisement (30) <ul style="list-style-type: none">○ Must include location of targeted sale○ Targeted audience○ Cost of resale generator○ Longevity○ Reasons to buy (at least 5)	
Total: 100	