**Sources of Energy Activity**

**\* Note: the activity was designed to be used with any salt water vehicle, solar artifact, and any kit that involves the assembly of a motor or a generator.**

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| **Subject Areas** | Comprehensive Science 1,2,3, Physical Science, Physics, and Engineering |
| **Grade Level(s)** | 6th to 12th grade |
| **Learning Objective(s)** | 1. Explain what electricity is 2. Compare and contrast a solar panel, an electrical generator , and a salt water cell 3. Analyze the efficiency of an operation power by a solar panel, an electrical generator, and a salt water cell. 4. Identify the different energy transformation when electricity is produced |

1. **Vocabulary Activity. Go to dictionary.com and look for the definition of the following words. Then, write a sentence with the word.**

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| **Vocabulary word** | **Definition** |
| **Renewable source of energy** |  |
| **Fossil fuel** |  |
| **Electricity** |  |
| **Voltaic cell** |  |
| **Photoelectric effect** |  |
| **Electric generator** |  |
| **electrons** |  |
| **Efficiency** |  |
| **Energy transformation** |  |

1. **Comparing and contrasting devices.**

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| **Type of device** | **How is the flow of electrons created?** | **Source of energy used** | **Energy transformation** |
| **Electrical generator** |  |  |  |
| **Solar panel** |  |  |  |
| **Salt water cell** |  |  |  |

1. **Boat race efficiency analysis (to be completed after the boat race)**

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|  | **How can you describe the speed of the boat?** | **Was the source of energy efficient? Why?** |
| **Electrical motor boat** |  |  |
| **Educational solar robotic kit (boat or car)** |  |  |
| **Salt water car (truck)** |  |  |