**ELA LESSON PLAN for Unit: Energy for Life**

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| **OVERVIEW** | | | |
| Lesson Title: **Energy for Life** | | Unit Title: **Our Planet, Our Choices** | |
| Lesson #: **3** | CCRS and GLE Range: **GLE 6.0-8.9** | Class Level: **Level D** | |
| Length of Lesson in # of Hours: **1.5 hrs** # of Classes: **1** | | Teacher(s): **Brooke Machado** | |
| **STAGE 1 – PLANNING for DESIRED RESULTS** | | | |
| **LESSON OBJECTIVES** | | | |
| *By the end of this lesson, students will:*   * define the terms *renewable* and *nonrenewable* in terms of sources of energy * identify and give examples of three renewable energy sources * describe how renewable energy provides a cleaner source of energy when compared to nonrenewable energy | | | |
| **CCR LEVEL-SPECIFIC STANDARDS THAT SUPPORT AND ALIGN WITH THE LESSON OBJECTIVES** | | | **KEY INSTRUCTIONAL SHIFTS** |
| **R1D**: Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text  **R2D**: Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments  **W4D**: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose and audience.  **L4Dabcd**: Determine or clarify the meaning of unknown and multiple meaning words and phrases, choosing flexibly from a range of strategies | | | *Indicate those addressed in this lesson:*  Practice with complex text and its academic language  Ground reading, writing, and speaking in evidence from literary and informational texts  Build knowledge through content-rich nonfiction |
| **ESSENTIAL QUESTION(S)** | | |
| *Why should we consider alternate energy sources?* | | |
| **PRIOR KNOWLEDGE NEEDED** | | | |
| Some understanding of problems affecting the environment and some knowledge of basic energy principles, gained from early lessons in this unit | | | |
| **STAGE 2 – EVIDENCE of LEARNING** | | | |
| *Ways that students and I will know the extent to which objectives have been met:*    Student notes, “Argument sort”, Exit ticket, Teacher observation | | | |

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| **STAGE 3 -- ACTION MATERIALS TIME** | | | |
| **INTRODUCTION**   * *Why is this important for students to learn? (hook, connection, relevance)* | 1. Tell students, “Before we enter today’s text, we are going to take a moment to record and evaluate the energy we have consumed today.” 2. Ask students to think about everything they have done today since waking up and to jot it down. 3. Inform students we have all used energy since waking up this morning. 4. Ask students:  * ***Did you remove your cell phone from its charger when you woke up?*** *If so, you have already consumed a tiny amount of electricity that likely has been produced at a power plant that had to burn a fossil fuel to produce that energy. The emissions from burnt fossil fuels have a negative impact on the environment.* * ***Did you take a hot shower?*** *If so, whether you use gas or oil to heat your water, some nonrenewable fossil fuels have likely been burned to produce that energy, also impacting the environment.* * ***How did you get to school today?*** *If you walked or rode a bike, you have not used any fossil fuel energy, which is excellent for the planet and the environment. If you took the bus or rode with friends, you consumed some energy, which caused some pollution, but you shared that amount with friends, and that’s still pretty good. Driving alone to school would be the worst for the planet. Because the journey was made just for you, the energy consumed and the pollution generated has not been shared with others traveling in the same vehicle.* | paper for student writing | 15 min |
| **BODY**  *Guiding Questions*   * *What text(s) will be the basis of this lesson?* * *What academic and content vocabulary will students learn?* * *What questions should I pose to engage students, elicit comprehension, and foster thinking and reasoning?* * *What opportunities will students have to practice ELA skills (Reading, Writing, Speaking and Listening, and Language)?* * *What opportunities will students need for scaffolding and differentiation?* * *How are the CCRS Instructional Shifts for ELA evidenced in student performance?* | 1) Teacher extracts 4-7 Tier 2 (academic) and Tier 3 (content) words from text, [Energy for Life](http://www.readworks.org/aad/energy), for class to preview and discuss. Teach as necessary. Students record notes of new vocabulary and their definitions.  ***Select according to the knowledge and needs of your students. Suggested words:***  *consume convert impact minimize sustainable*  2) Students read the article 2-3 times.   1. During the first read, students are looking to answer the questions, “What is the main idea of this article? What is the article mostly about?” You may ask students to answer these questions in a quick-write or in Think-Pair-Share. 2. In a second read, students are looking for specific information. Students should highlight or annotate text as follows:  * 3 forms of renewable energy * 2 of the benefits of using renewable energy * 1 of the drawbacks to using renewable energy  1. Model and scaffold. Share out and record responses on board or chart paper.   4) With their new knowledge about renewable vs. nonrenewable energy, and the advantages and disadvantages of using renewable energy, students evaluate some statements and determine if the evidence argues for renewable energy or against renewable energy.  ***PREP: Cut out statement cards from the attached Pro/Con list. Remove Title cards, shuffle and distribute cards to students to sort and discuss. Students should evaluate as to whether the statement supports the case for renewable energy or does not.*** | Text: “Energy for Life” [www.readworks.org/aad/energy](http://www.readworks.org/aad/energy)  copies of article, one per student  highlighters  paper for student writing  whiteboard or chart paper  Pro/Con list, attached, adapted from <http://renewablegreen.net/?p=124> | 45 min |
| **CLOSING**   * *How will I bring closure to the lesson and provide opportunities for student reflection (i.e., transfer of knowledge/skills)?* | 5) Remind students there is evidence both for and against the case considering renewable energy sources. As an exit ticket task, ask students to reflect on the question,  “*What are the implications for the planet and its inhabitants if nothing changes and we do not decrease our reliance on nonrenewable energy*?” | paper for exit ticket writing | 15 min |
| **POST-TEACHING REFLECTION** | *What changes or adaptations would I make?* | | |

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| **Pros of renewable sources of energy** | **Cons of renewable sources of energy** |
| Renewable sources of energy are easily regenerated. This is unlike fossil fuels which are perishable once used. | It is difficult to produce renewable energy in quantities that are equivalent to those produced by nonrenewable fuels. |
| Renewable sources of energy, such as solar, produce clean energy that does not pollute the environment. This is because no burning is required during usage of the energy. | The technology required to trap renewable energy is costly. Setting of dams requires high initial capital to construct and maintain. |
| Renewable energy sources are available everywhere throughout the world, thus there is no chance of the sources becoming depleted in the future. For example, solar energy is everywhere as the sun will always be there every day. | Most renewable sources of energy are affected by weather, thus reducing their reliability. For example, hydro generators need constant rainfall that will overflow the dams and wind turbines only rotate if there is wind of a given speed. |
| Renewable sources of energy boost economic growth and increase job opportunities. | **Pros of nonrenewable sources of energy** |
| **Cons of nonrenewable sources of energy** | Most nonrenewable sources of energy are easy to transport from one area to another. For example petroleum oils can be transported via pipes. |
| Nonrenewable sources of energy produce harmful green house gases which contribute to global warming. Coal, once burnt, produces carbon dioxide harmful to the environment. | The cost of producing nonrenewable energy is low since the sources are naturally available. Furthermore they are cheap to transform from one form of energy to another. |
| Once nonrenewable resources are depleted, they cannot be replaced. | Most nonrenewable energy sources are abundantly available in different areas. Their availability is not affected by climatic condition. |

[Pro/Con list adapted from <http://renewablegreen.net/?p=124>**]**