# Lesson 4: Energy Transfer Rubric

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| **Students will be able to….** | **Novice**  **1** | **Apprentice**  **2** | **Proficient**  **3** | **Distinguished**  **4** |
| **Identify forms of Primary, Secondary, Final, and Useful Energy.** | Student cannot identify forms of Primary, Secondary, Final, and Useful Energy. | Student can identify forms of Primary, Secondary, Final, and Useful Energy with significant support. | Student can identify forms of Primary, Secondary, Final, and Useful Energy. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., being able to apply the concept to energy flows to energy sources not discussed in class). |
| **Identify the type of fuel and transformation process for renewable energy sources.** | Student does not understand how to identify the type of fuel and transformation process for the renewable energy sources. | Student can identify the type of fuel and transformation process for the renewable energy sources with significant support. | Student can identify the type of fuel and transformation process for the renewable energy sources. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., identifying fuels and transformation processes for sources not discussed in class). |
| **Accurately calculate the amount of electricity produced by each renewable resource.** | Student does not understand how to calculate the amount of electricity produced by each renewable resource. | Student can calculate the amount of electricity produced by each renewable resource with significant support. | Student can calculate the amount of electricity produced by each renewable resource. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., identify how the different variables of the calculations can be changed to affect the output). |
| **Convert the information by creating a bar graph representing the electricity outputs.** | Student does not understand how to convert the information and create a bar graph. | Student can convert the information and create a bar graph with significant support. | Student can convert the information and create a bar graph. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., student can apply bar graph exercise to additional energy sources and calculations). |
| **Discuss and explain how/why the outputs differ for the resources and how the outputs relate to their personal energy consumption.** | Student cannot explain how/why the outputs differ for the resources and how it relates to their personal energy consumption. | With significant support, student can explain how/why the outputs differ for the resources and how it relates to their personal energy consumption. | Student can explain how/why the outputs differ for the resources and how it relates to their personal energy consumption. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., student can explain how/why the output of a single source might vary over time). |