

Power House Project



The Power House project provides opportunities for participants to apply and extend the concepts they have learned during the past two weeks. The purpose of the Power House project is to focus upon the technologies related to renewable and regenerative energies. Through performing experiments and building a working model participants can apply new energy technologies that demonstrate how we can transform and use renewable energy sources.

Steps for the Power House Project

1. Build the Power House. Follow the steps for building the house found on page 9 of the Manual.
2. After building your Power House, conduct four experiments found in the Experiment Manual. You must try and relate your experiments to the essential questions. For example, the essential question, “How can energy be transferred from one material to another?” might be answered by building the wind power plant.
3. Provide a rationale for the experiments you chose in relationship to the essential questions. Include any connections between the experiment and concepts learned during the institute. Record on the attached chart.
4. Provide an outline of the procedures of the experiment. Record the results of the experiment on the attached chart.
5. Provide your own reflections on the experiment. Consider how you might apply what you have learned in your own life.
6. Prepare for the Science Fair Presentation.
On Friday, we will have a final a science fair presentation showcasing the experiments you conducted related to your powerhouse. Choose one experiment to showcase. Be prepared to discuss all aspects of the experiment, including how it relates to the essential question, your understanding of the physics behind the experiment, the results, and what you have learned as a result of conducting this experiment.

Essential Question: How do we know that things have energy?

Experiment or Building Project

Relationship to the Essential Question

Procedures Conducted

Results of the Experiment

Reflections

Essential Question: How can energy be transferred from one material to another? What happens to a material when energy is transferred to it?

Experiment or Building Project

Relationship to the Essential Question

Procedures Conducted

Results

Essential Question:
What happens to the energy in a system — where does this energy come from, how is it changed within the system, and where does it ultimately go? How does the flow of energy affect the materials in the system?

Experiment or Building Project

Relationship to the Essential Question

Procedures Conducted

Results

Reflections

Essential Question: What is a “responsible” use of energy? Are there alternative forms of energy that will serve our needs, or better ways of using traditional forms of energy?

Experiment or Building Project

Relationship to the Essential Question

Procedures Conducted

Results

Reflection

