**Lesson 6: Introduction to Research**

**Problem Statement:** The problem is the PUD needs to invest money into alternative energy sources and needs suggestions for the future. This lesson ties into the problem because students must understand what options are going to be available in future years.

**Learning Objectives:**

Be able to generate research derived from a variety of sources

Be able to use the research to facilitate effective development and evaluation of a successful solution to a problem.

**Materials:**

1.      Internet access

2.     Energy Research Instruction Sheet

3.      Energy Research Example

4.      Energy Research Blank Template

**Lesson Prep:**

Review the Brainstorming Powerpoint

Make copies of the ‘Energy Research Blank Template’

**Time Required**:

1   50 minute class period

**Grouping of students for instruction**:

Whole class for Research PPt, individuals for their own research

**Procedure:**

Present the Introduction to Research PPt: This PPt will cover what research is, the types of research and advantages and disadvantages of both. Then, ***post or copy the directions below for students to follow.***

After reading the directions with them, show them the Energy Research Example and Template. Pick one energy research topic such as the human generation. Show students quality sites to go to and create a research sheet with them. Have students identify whether it is coming from a primary or secondary source. The example provided features a soccer ball, jump rope, and treadmill that create energy.

**DIRECTIONS for STUDENTS**

Energy Research Instruction Sheet:

In this activity you and your teammates will research via the Internet existing products that align with the design brief for the project. Each of you will be responsible for locating three existing products that will be used to inspire your design.  These examples will include **elements** that you find to be desirable and may be included in your product design. You are not conducting a search for objects to replicate as part of your design, as that would violate copyright and patent laws. You will compile the following information about the products you find online and develop a sheet that will be shared with your partners. Each member of the design team is responsible for completing an individual product research document.

You must use the Internet to research the following product information:

•   Name of the product (company, distributor, etc.)

•   URL link to the web page

•   A brief statement about the elements that you find interesting

•   Picture of the product

You will then create an information sheet for each of the three (3) objects in the format that is shown on the Sample Product Research Document.

***\*\*\*Each partner is responsible for locating three (3) products to exchange with all team members.\*\*\****

**Assessment**: As students finish, they can post their Energy Research in a dedicated place, email to the teacher, show the teacher, or print, depending on teacher convenience. They may also consider sharing their document with their group so they can all see what each other found.

**Accommodations**: If time allows, teacher could vet a few sources that students could choose from, such as sciencedaily.com. Or, the number of ideas could be reduced to two.

**Extensions**: Students could find more details, such as upcoming important information like environmental impact, cost, etc. This would be helpful for the decision matrix coming up.