Exploring Energy Storage in Your Community

Re-Energy
Spiral Inquiry Activity
Grade Level 7-12

Main Objective

Learners will use GreenLearning's Spiral Inquiry Model to explore a type of energy storage of their choosing and relate it to their community.

Learning Outcomes

By the end of this activity, learners will:

- Discover the implementation of energy storage in their communities
- Investigate various types of energy and present their findings to the class
- Collaborate amongst peers to develop their own focus question(s) and inquiry plan

Length of Activity: 5-7 hours

Step 1: Introduction to spiral inquiry
Step 2: Class discussion, start worksheet
Step 3+4: Learn about the different kinds of energy storages
Step 5: Share research with the class

Materials List

- Internet-enabled device
- Energy Storage 101 Backgrounder
- Energy Storage Inquiry Worksheet
- Spiral Inquiry Additional Resources

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Activity

Step 1: Spark (A Student Investigation)

- Begin by getting familiar with GreenLearning's Spiral Inquiry Model found here:

  https://programs.greenlearning.ca/course/spiral-inquiry-model

- Pose the question, "How can your community benefit from energy storage?" to the class at large.
  - Allow learners to break out into think-pair-share groups to begin generating some ideas.
  - Ask the groups to share their ideas, and record down their responses in a bullet list at the front of the class on the board.
  - Each bullet can be discussed at large with the class by providing them with some teaser information on those points, so it really gets them thinking further.

Step 2: Hypothesize and Plan

- As a class, discuss the different types of energy and decide the focus of your inquiry.
- Learners can be split up into groups so that they can brainstorm potential inquiry questions. Have the groups discuss what they have taken away from the class discussions.
- Hand out the "Exploring Energy Storage Inquiry Worksheet" to the learners in their groups and allow them to complete Part 1.

Step 3: Explore and Research

- Have learners work in small groups and decide what type of energy storage they would like to focus on.
- Below are some investigation suggestions:
  - Consider if that type of storage already exists in their community.
  - Research successful implementation of this type of energy storage in other places.
  - How much energy storage do you think your community could handle?
- Hand out the "Exploring Energy Storage Inquiry Worksheet" to the learners in their groups and allow them to complete Part 2. Be sure to remind learners to record their information and remember to keep track of their sources. Groups can evaluate their information they have collected and answer these questions:
  - Does your research answer your questions or test your hypothesis?
  - Does it raise more questions, and how can you answer these?

Step 4: Analyze and Check

- Allow learners to compare, sort and classify their information.
- Get learners to draw conclusions about your questions and hypotheses.
  - Is their chosen type of energy storage suitable for their community? Why or why not?
  - If so, where would you consider that type of energy storage being implemented?
  - Make adjustments if needed. If you found out this type of energy storage is not possible, outline what modifications would need to be done to make it successful.
- Hand out the “Exploring Energy Storage Inquiry Worksheet” to the learners in their groups and allow them to complete Part 3.

Step 5: Communicate and Act

- Now the groups are ready to turn their knowledge into action. Allow the learners to communicate their findings to the class. Be sure to remind them about the message they want to get across and to tailor it to the classroom audience.
- Learners might produce a YouTube video, PowerPoint presentation, research blog, web pages on the school site, podcast, mind map, poster, or infographic, etc.