

shaft is connected to a generator that converts the mechanical energy into electrical energy. Electrical current then flows from the generator through power lines to energy users.

Student Prior Knowledge

Before beginning this activity, students should be familiar with

- the basics of electricity.
- basic environmental issues concerning traditional energy sources.
- how to brainstorm.
- methods of basic construction.

Notebooking

Have students compile all their work into a single notebook. Notebooking provides students a complete and tangible record of their project. Students can use their notebooks to organize their notes, document their processes, complete their assignments, review their lessons, and prepare for assessments.

Margin notes throughout this Teacher's Manual provide specific instructions on how to help your students achieve success through Notebooking. These margin notes and the optional Study Tips below are designed to help students improve literacy, explore creative ideas, strengthen their critical thinking and analytical skills, and practice data collection and interpretation through the Notebooking process.

Study Tip 1: Have students write the boldfaced key words and their definitions in the Connections section of their notebook. Have students draw a picture illustrating the meaning of each word or applying it correctly in context. This may help students remember the word and associated concepts.

Study Tip 2: Have students reserve a page in their notebook for brainstorming and planning during the Design Activity. Have them note the number, type, and size of the materials they wish to use, and describe how they interact. On this page they might also include drawings and schematics, brainstorming notes, or inspirational text and images.

Study Tip 3: Have students record their observations and collect data in real time, i.e., as they happen. This ensures that all their thoughts, impressions, and data are documented. Later, they can organize and refine this information on subsequent pages.

Presentations

At the conclusion of the Design Activity, have student groups present their design and results to their classmates. A variety of creative methods of presentation can be utilized, including PowerPoint® software, videos, interactive whiteboards, blogs, and other multimedia.

Alternatively, have student groups present their lab reports using mini posters. A mini poster can be created from a tri-folded 11" × 17" sheet of paper or from two overlapping file folders glued or taped together. Students can organize their information by showing the challenge and their objectives on the left side, the