



Activity Preparation Guide for

See **Energy Discovery Box** to prepare this activity as a station.

What's the Energy Connection?

How are a bottle of water, lump of coal, subway map, and wind up toy connected to energy?

Purpose

The purpose of this full group activity is to help families discover the myriad of connections ordinary everyday items have to energy.

Time

15-25 minutes

Advance Preparation Materials & Procedures

- Paper lunch bags (15)
- 3" x 5" index cards (15)
- pencils (15)
- Energy Discovery Box items:

clothes pin	solar calculator
compact florescent bulb	speed limit sign (e.g. printed picture)
insulated foil bag	wind-up toy
pinwheel	bottle of water
energy drink or bar	lump of coal (sealed in small plastic bag)
instant cold pack	corn (e.g. popcorn small clear container)
flashlight	subway map or ticket/token
mitten	

1. In each paper lunch bag put Discovery Box item, a pencil and a 3" x 5" index card.
2. Review the Energy Discovery Box Clue Cards (Appendix) to familiarize yourself with some of the item's energy connections.

Activity Supplies

- Prepared paper lunch bags
- Whistle or some other signaling device (e.g. turning lights off and on, chime, hand clapping, PA system, start and stop of energetic background music)

Facilitating the Activity

1. Assemble families in a large group. Hold up an object (e.g. a flashlight). Ask the group if this is something that most have in their homes. Next ask: How is this flashlight related to energy? (Families are likely to say something like the flashlight uses energy from the battery to work.)
2. Ask the group: Is this the only connection the flashlight has to energy? Invite someone with another idea to say how this flashlight is connected to energy.
3. Explain that families will be doing an activity called *What's the Energy Connection?* Hold up one of the paper lunch bags and explain that there is an object, card and pencil in each of the bags. Each family (or small groups of families if there is a large group) will get a bag, open it and take out the object. They will brainstorm as many connections to energy as they can think of between the object (or what the object represents) and energy. Groups will choose the most interesting connection they can think of and write it on the card that is in the bag. At the given signal, they should put the object, card and pencil back into the bag and pass it to the next group. Tell the group: Keep in mind, you will have only 2 minutes to talk about the connections and pick your best.
4. The next group will take the object out of the bag, brainstorm, and choose their most interesting connection that is different from one already written on the card. They will add their connection to the card, put it in the bag and pass it to the next group on the given signal.
5. Continue for 5-7 rotations... then stop.
6. At the last rotation, have families leave the object out of its bag and pair up with another family. Instruct families to take turns talking with their partner group about the connections to energy their items have.
7. Bring the group together and elicit the following points:
 - What types of connections are most prevalent?
 - Which connections are new to you?
 - Which do you want to find out more about?
 - Energy is all around us – we use and interact with energy in countless ways every day.
 - Energy is in some way connected to all physical objects and processes in the universe.
 - People interact with energy in ways they don't always realize.
8. Celebrate the families' hard work by sharing a round of applause.

Variations and Extensions

- Include additional items of local interest. Virtually any item has a connection to energy.
- This full group activity is a modification of the Energy Discovery Box self-directed station. Directions for this version are found on page 27.