



HELLO VOLUNTEERS!

Thank you for volunteering for our COSI On Wheels program. **Investigating Energy** is one of six traveling assemblies/hands-on experiences for students in grades K-6. The students will explore the complexity of energy sources and conservation. Here are some of the things you can look forward to on the day of the event.

The day begins with a 45-minute assembly that introduces Dr. Kilowatt (the COSI Educator) as a scientist who is looking for a good way to power a new invention. With the students' help, Dr. Kilowatt will take a closer look at energy and explore different sources of electricity. This entertaining assembly is followed by hands-on activity sessions during which the students can further enhance their knowledge of energy usage and responsible conservation.

The COSI On Wheels experience is designed to get children to ask questions and explore science. Your role during the day will be to help guide students during the hands-on sessions. You do not have to be a science expert to be a COSI On Wheels volunteer. We would like everyone to have fun and learn on the day of the program, including you. Be sure to dress comfortably because you may be on your feet for the better part of the day!

Prior to the first assembly you will be given an orientation so that you can become familiar with the activities, which are listed on the following page. It is important to be on time for this orientation because we have only 45 minutes to get to know each other and learn all of the activities. COSI On Wheels has six different program topics, so we rarely bring the same program to a school two years in a row. Even if you have volunteered for us in the past it is important to attend the orientation to learn the new information about **Investigating Energy**.

Above all, you should know that you are a vital part of this COSI On Wheels experience. It is impossible for **Investigating Energy** to be a success without you. We at COSI, as well as the students and faculty at your school, appreciate your time, energy, and support. Be prepared for a day filled with science, learning, and FUN!

Sincerely,

The COSI On Wheels Team

Top 10 Things Every COSI On Wheels Volunteer Should Know

- 10) Get excited! The students get out of the experience what the volunteer puts into it. Your energy is contagious, as is theirs!
- 9) Wear comfortable shoes! You may be standing, stooping, bending, or leaning for long periods of time.
- 8) Layer, layer, layer! Sometimes the gym feels like you've just stepped off an airplane at the equator, while other times your lips turn blue from the frosty air. You can never tell what the temperature in the gym will be!
- 7) Bring water. You will be talking with the students all day, and it is quite refreshing to have something to wet your whistle throughout the day.
- 6) Ask questions! To the students, yourself, and the Educator. You are not expected to know all of the answers. In fact, it is a much more rewarding experience to have the students discover the answers through experimentation. You will be surprised at how a student will jump right into something to try to answer their own question.
- 5) Keep your hands clean. This can be a tough one, but make sure it is the students that are doing the experimenting, and the clean up!
- 4) Don't underestimate the abilities of the students. It's okay for them to try and fail, then try again.
- 3) Have fun! This is an informal setting with very active experiments. The kids love trying things for themselves while learning at the same time!
- 2) Learn! Regardless of your experience, there are plenty of opportunities to learn new things. This is a very fun way to expand your brain.

And the #1 thing you should know is.....

- 1) Thank you, thank you, thank you! We could not do this without you. Your time and effort is very much appreciated and you have really made a difference in a child's life!

INVESTIGATING ENERGY HANDS-ON ACTIVITIES

Breaking Wind:	Students use an anemometer to test wind speed and decide the best position to place a wind turbine.
Bright Ideas:	Students turn a hand-crank generator to light an incandescent or compact fluorescent light bulb.
Good Vibrations:	Students experiment with various items to determine the properties of sound and how sound is used to find crude oil.
Let It Flow:	Students classify several solids and liquids as a good conductor of electrical current, a poor conductor, or not a conductor at all. Then the students will test each item to see if they predicted correctly.
Paddle Power:	Students design their own water turbines by choosing from a variety of blades. They test the power of blades to lift weight as the blades are placed in a circular stream.
Pass the Juice:	Students build circuits by attaching a variety of components to a power supply.
The Domino Effect:	Students use blocks to transfer energy from one point to another while observing the change of potential to kinetic energy.
Scrubber System:	Students will act as smokestack scrubbers with the responsibility to clear out the pollution to conserve our environment.
Up in the Air:	Students map routes along a map to determine the effects that fuel economy has on gasoline used and pollution created.
Watts Up:	Students use the “Watts Up” meter to determine the amount of energy used by various items that might be found in their bedrooms.