



Louisiana State University

Agricultural Center

Louisiana Cooperative Extension Service

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- TITLE:** ALL ABOARD THE NRG EXPRESS!!!
- SUBJECT:** Energy sources
- AGE LEVEL:** Preschool - second grade
- TIME REQUIRED:** 15-20 Minutes, without pinwheel activity
- MATERIALS:** posters
apple
charcoal in zip loc bag
oil or gas in clear plastic container or jar
empty jar (natural gas)
bright colored picture of the Sun Dude
water in jar or plastic container
small plastic trash can with lid
costume (engineer's overalls, cap and bandanna)
color sheets with energy tips
materials to make pinwheels

SAY:

Whoooo! Whoooo! **(like a train whistle)** All aboard the NRG Express Railroad. Hi! I'm _____, and I'm a train engineer. Today we will be taking a ride on the NRG Express Railroad and we will be learning about 'energy'. As we get ready to go on our trip, we have to put our train together and I'll need some of you to help me. Of course, every train needs an engine. **(Have someone come up to be the engine)**

Before the train can leave the station, it has to have something to make it go. Does anyone know what that might be? It's energy!! What is energy? What does it mean when you say you have "energy"? **(Allow response. Some responses might be: Makes things move. Ability to do work. Makes me feel good. Etc.)**

Where does energy come from? How do different things get energy to make them work? Energy comes from many different places.

Everybody stand up. Now, jump as high as you can in the air three times. Now, sit down. Where did you get the energy it took you to jump up in the air? **(Allow response)** From the food you eat. **(Show apple)**. Food helps make us healthy and strong so we can play and run and do all the things we like to do. What are some of your favorite foods? **(Allow response)** If you didn't eat healthy foods you would not have any energy and you would just lay around all day feeling lazy. That wouldn't be



much fun, would it? Our bodies use energy all the time, even when we are asleep. We use energy to breathe, to laugh, to do homework and to play. Some foods, like grains, are transported in train cars. **(Have someone come up to be the food car)**

Do you think food has energy? In fact, it does! Well, where do you think food gets its energy from? **(Allow response) (Show Sun Dude)** Food gets its energy from the sun. The sun makes plants grow and plants give us food. If it were not for the sun, we would not have any energy because the plants couldn't grow to give us food to eat. The sun also gives us light to see and heat to make us warm. Energy from the sun is called 'solar energy'. Of course we can't put the sun in a train car, but today we'll pretend we have a train car with sun since the sun is an important energy source. **(Have someone come up to be the sun car)**

We use energy for cooking, to heat and cool our homes, to travel from place to place and to make machines work. Let's look at where we get the energy to do these things.

Where do things like trains, tractors, cars and boats get the energy they need to do work and move? Let's see!!

Coal is used to make trains like the NRG Express move! Trains help carry things from one place to another. Coal is black and it looks like this **(Show coal in bag)**. It is used for heat and, in some parts of the country, it is used to make electricity. Where does coal come from? It is found in the ground and we must dig mines to get the coal out of the earth so we can use it. Let's add our coal car to the train. **(Have someone come up to be the coal car)**

Does anyone know what "petroleum" is? **(Allow response)**. Petroleum is just a big name for oil. It is a black liquid like this. **(Show oil)**. Oil comes out of the ground, too. We make lots of important things from oil. We make gasoline to make our cars go and jet fuels to make airplanes fly and diesel fuel to make tractors work. In some places, fuel oil is used to heat homes. Did you know that plastic is made from oil? Can you name some things that are made out of plastic? **(Allow response)** Petroleum is sometimes carried in tank cars like this one. **(Have someone come up to be the oil car)**

Natural gas is used to heat our homes. We also use the energy from natural gas to cook our food. When we burn natural gas, we get heat to cook food. Some new cars are using natural gas rather than gasoline to make them go. Natural gas is clear; that means it has no color. **(Show empty jar)** You can't see it! Isn't it amazing how something you can't even see can give off enough energy to make a car go!!! **(Have someone come up to be natural gas car)**

Coal, oil and natural gas are called "fossil fuels". That's a funny name, isn't it? Let me tell you how they got that name. Fossil fuels were formed deep inside the earth from plants and animals, like dinosaurs, that died a long time ago. Over the years,



these dead plants and animals became buried in the ground and became fossil fuels. When we take these fossil fuels from the ground, they give us energy to use for heat and to make electricity. Just think, the electricity you use to make your Nintendo work might have come from dinosaurs!!!

Let's talk about what makes some other things go. Where do sailboats and kites get energy from to make them move? That's right--the wind. The wind also turns windmills which help make electricity. You can't carry wind in a train car, but we'll pretend and add a wind car to the NRG Express. **(Have someone come up to be the wind car)**

Water is another thing that makes energy. **(Show jar of water)** Here's a big new word--hydroelectric. 'Hydro' means water and 'electric' stands for electricity. Hydroelectric means electricity that is made from water. Sometimes we use the water flowing in rivers to make energy. **(Have someone come up to be the water car)**

Did you know that we can even get energy from garbage? **(Show garbage can)** Bet that's some stinky stuff--Pewwww!! Scientists have discovered a way that we can get energy from burning our garbage. Just think, that old notebook paper and those empty cardboard boxes you throw out in the trash may someday provide the energy to run the tv set in your house. **(Have someone come up to be the garbage car)**

Have you ever heard the word 'nuclear'. Nuclear is another type of energy. It is made from something called uranium. It is not used very much right now, because scientists are still working on ways to make it better energy from it. **(Have someone come up to be nuclear car)**

Well, we've learned today about where we get energy. How do you think you might feel if you walked in to your room one day and there were no lights; or if you went to turn on the tv and it would not go on? That's what might happen one day if we don't start using energy more carefully. Sometimes people are careless with energy. They waste it.

Let's think of some things you can do every day to save energy:

- * Turn off tv/radio
 - * Turn off lights
 - * Ride bikes/carpool
 - * Close refrigerator door
 - * Cook in microwave
 - * Don't peak in pots or open oven door
 - * Wear a sweater if you are cold
- (Any other energy saving tips you or the children can add)**



No train is complete without a caboose. Here is our caboose. **(Have someone come up to be the caboose and review energy tips)** Let's review what we've learned about saving energy.

Now our train is complete and we're ready for our trip on the NRG Express. All aboard!!!

FOLLOW UP ACTIVITIES:

Where do these things get their energy from? **(You can use the actual items or pictures of each item. You will need to get these together yourself.)**

- * energy bug
- * lamp
- * bicycle
- * car
- * radio
- * tree

Make pinwheels. Have all pieces cut out and let children assemble them. You will probably want to have some adults (parents or librarians) or teens to help with this. I will send out directions for making them.

Attachments:

"Where do I get my energy?"
Make a wind wheel

