

Explore the forms of energy at:

http://www.eia.gov/kids/energy.cfm?page=about_forms_of_energy-basics

****YOU WILL USE THE AREA ON THE TOP LEFT OF THE PAGE:
ENERGY SOURCES.**



While we are using energy in our home, scientists are studying energy in labs so that they understand the science of energy and can help develop new ways to use energy in the future. You can be an energy scientist too!

What are the two categories that all forms of energy can be put into?

1)

2)

Explore non-renewable sources at:

<https://5thgradedecker.wikispaces.com/Fossil+Fuels+Research>

Our first source, **oil (petroleum)**, really is a buried treasure! I know that we find oil by drilling deep underground, but how is oil formed? (Summarize from the picture "petroleum & Natural Gas")

1)

2)

3)

We can process oil into a lot of useful fuels to run our cars, trucks, and even airplanes. Oil is used for making lots of other valuable products that we use every day.

Can you name five of those products?

<http://www.ranken-energy.com/products%20from%20petroleum.htm> or

<http://listverse.com/2012/12/23/10-everyday-things-that-started-life-as-oil/>

1)

2)

3)

4)

5)

<http://www.eia.gov/KIDS/energy.cfm?page=2>

There are a lot of energy sources found underground. Oil is a liquid, but what is this gas down here called?

“How do we get natural Gas?” What type of scientist finds natural gas? _____
And where are they looking? _____

Coal is another nonrenewable source that can be found underground. It is a solid, so most coal is transported by _____. *(Use reading skill to skim and locate info)*

But first we have to get the coal out of the ground. What are the **two methods** used to mine coal out of the ground so that we can use it to make electricity?

1)

2)

Our final non-renewable source also starts in the ground, but it is an **element**, not a fossil fuel like oil, natural gas, and coal.

We don't get energy by burning it. To release the energy from **uranium**, we **split** uranium atoms into smaller atoms, releasing heat energy.

This process of splitting an atom is known as nuclear _____.

Explore renewable sources at:

http://www.eia.gov/kids/energy.cfm?page=renewable_home-basics

While there are many valuable treasures underground, renewable resources are sources that have **unlimited amounts of energy** for us.

Solar energy is an excellent example of renewable energy. **Which type of “cell” is the most commonly used to convert solar energy into electricity?**

1)

Wind, another renewable source, has a lot to do with the sun too. How is wind formed?
(Wind basics)

Not all renewable sources are above ground: some are below the Earth's surface, just like our non-renewable sources.

Geothermal energy is heat in hot rock, steam and water from the Earth that we can use to heat our homes or to generate electricity. There are certain areas of the world that have more geothermal activity.

This "ring" of geothermal resources is known as:

_____.

In addition to fossil fuels, we can also use organic materials (**biomass**) for energy. We can burn it in power plants to make steam and generate electricity.

What are 5 types of Biomass?

_____, _____, _____, _____, _____

The biomass resource most often used is _____ (about 46%)

We have traveled the earth looking for energy and have found energy from the sun, the wind, trees, and even underground.

Where else haven't we looked? **Water!**

Energy from moving water is usually called hydropower. **Evaporation and precipitation are two important parts in the _____ cycle.**

The water in rivers is controlled by dams and runs through turbines to spin generators and create electricity. When a dam is put on a river, it may interrupt the natural path of some fish.

Hydropower plants install _____ ladders to help fish swim upstream to reproduce. Some hydropower plants have fish lifts (elevators) instead.

Now, look at the "Hydro Power and other renewable generation" Chart. What do you notice about the use of "other renewables" compared to Hydroelectric?

Explore electricity at:

http://www.eia.gov/kids/energy.cfm?page=electricity_home-basics

Now that we have explored energy sources, let's discover the secrets of electricity.

Whose kite experiment helped scientists understand the principles of electricity?

The other important thing that we need to know to understand electricity is that everything in the universe is made of tiny, tiny things called

http://www.eia.gov/kids/energy.cfm?page=electricity_science-basics

_____.

They are made up of tiny parts called neutrons, protons, and electrons. Electricity is moving electrons. **In order for the electrons to move, they need a closed loop, called a** _____.

Electricity is usually generated in power plants and moved to our homes and businesses through transmission lines. **How is electricity measured?** _____ and _____

Explore uses of energy at:

http://www.eia.gov/kids/energy.cfm?page=us_energy_use-basics

According to the pie chart, which sector of the economy consumes the most energy? (How much?) _____

We use many different energy sources in our home. What is the number one use of energy in homes? _____

We also use a lot of energy in our cars and trucks. Which energy source do we use to fuel most of our cars, trucks, and airplanes? _____

Learn about energy efficiency at:

http://www.eia.gov/kids/energy.cfm?page=about_energy_efficiency-basics

Now that you've learned so much about energy, you may want to know how to make smart energy decisions in our homes.

Do you know the difference between energy conservation and energy efficiency?

Energy Conservation =

Energy Efficiency =