

ENERGY REPORT CARD EXTRA

Earth Day 2011

Arts and Crafts for Earth Day

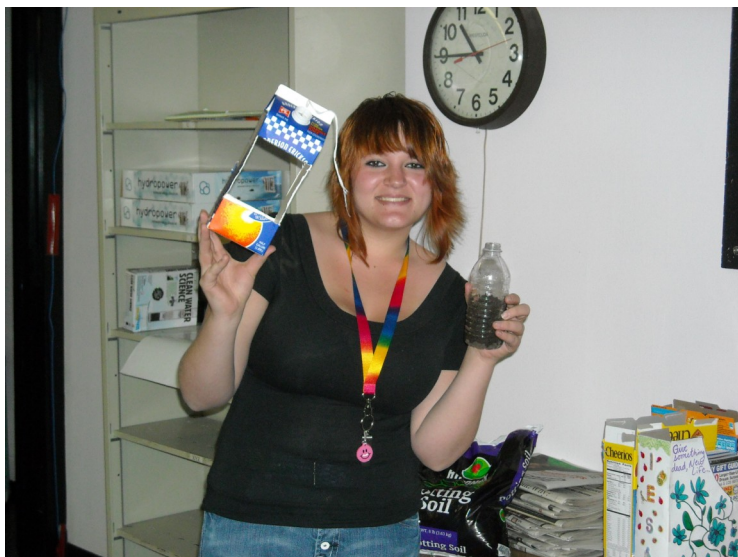
Article by Courtney Wright, IESA Student

On April 22, which just so happens to be Earth Day, the IESA will be doing various activities that directly relate to Earth Day. Many of these activities will be very fun and exciting for Central Academy students and middle schoolers. One really exciting area that we will be focusing on are some really awesome crafts that are environmentally friendly and economically friendly as well. A lot of the things we will be using are going to be reused, or recycled material. In fact, one of the things we will be doing is making an item using recycling of another!

One of the most fun things that we will be doing, in fact, is making paper out of old newspapers. This process involves blending the newspaper with water and filtering it through screens, thus creating a crude paper material. Once this is created, we will cut the paper into strips and embed seeds into the strips of paper, and they can be used as bookmarks or can be planted into the ground, creating new life. I think that the students will like this a lot!

Another really cool thing that we're going to try is making plants out of eggshells! This fun, creative idea is unique in the way that pretty much everything used comes from our planet. There aren't many chemicals when it comes to this! We'll be planting grass seed in soil that will be nestled into the egg shells that way we can make our own grass. Sounds kind of like a low expense Chia Pet to me! After, or before, the grass seed is planted, students will be allowed to decorate their eggshells with marker in any way that they like. The shells will then be placed into the original cartons and sent back to school with the teachers, who will pass them back once the students are prepared to go home. This will prevent any breaking of the eggs.

Something interesting that I stumbled upon when searching for more ideas for our Crafts station was bird feeders made out of those cardboard half gallon jugs of milk or juice. They're really simple to make, and it's silly that nobody else does this! Reusing these cardboard containers makes things so much easier on the environment. There's no mess and no more contribution to



landfills for those boxes. They finally have use! What we shall do is cut a portion of the carton out, enough so that a bird may fit inside, but still keeping a nice portion of the bottom intact that way we can fill it with bird seed. Once we fill it, we can hang the feeders from trees outside and voila!

The last thing I will be discussing, which is probably the most exciting and fun in my opinion, is the terrariums we will be making out of old clear soda bottles. We will take off the top of the bottles and place potting soil inside, planting seeds, and watering the plants when needed. Placing the top back on the new terrarium and putting it in the sun shall enable the top to act as a greenhouse, keeping the plant well nourished, even inside. These are really fun to make and it's also cool to see your very own plant grow from a plastic bottle!

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Electric Energy Display for Earth Day

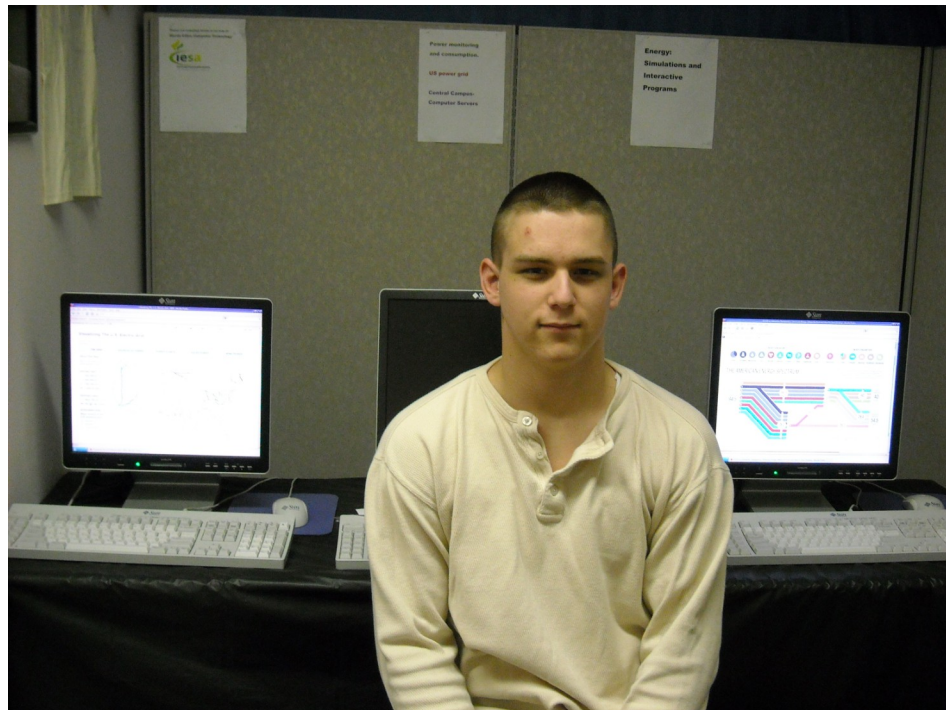
Article by Robert Perks, IESA Student

The United States of America runs on electricity, and most people don't know what natural resources are used to create electricity. This is one of many things that IESA will explore with students on Earth Day, but my job this Earth Day is to educate you on the Energy display. The Energy display will explain what natural resources America uses to keep your power on. For example, nearly 20% of America's power comes from nuclear power plants. The display that I will be in charge of will have interactive computer simulations of how, where, and what sources the United States uses to produce electricity.

But that's just the tip of the iceberg on the things we hope to tell you on Earth Day, and we can't wait to see you there.

There will be several tables with interactive displays, crafts, and information.

Join us from 8:00 -11:00 am in the lobby of Central Campus.



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Energy Simulation Kits

Article by Payton Pringle, IESA Student

Starting this spring the IESA class received new energy simulation kits. The first ones we received are hydropower kits. With these kits you are able to make: a water wheel, a sawmill, water tower, a fountain, a hammer mill, and a water wheel with a generator. After building these models you get a sense of wonder at the simplicity of hydroelectric power.

The first use of the water wheel was for irrigation and watering animals. In the pioneer days water wheels were hooked to the large gears, and these gears were then connected to large saw blades. This was the first active type of hydro-factory. Modern day use of the water wheel is to generate electricity, through the turning of electromagnetic generators. This is how people have always used hydropower to their benefit.

We will have these kits on display on Earth day in the main lobby of Central Campus.



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Arts & Crafts For Earth Day

Article by Anna Schmalzriedt, IESA Student

Arts and crafts are a wonderful way to celebrate Earth Day. Taking things like cans, glass jars, and cereal boxes and making something creative is awesome! There are so many ways that art is able to bring life to something that is dead! The crafts that I will be doing are can pencil holders, can and glass pots, and cereal box magazine holders. Let's get started on the crafts!

The can crafts include the pencil holder and plant pot. A glass jar may also be used for a plant pot. The steps are very simple. Find a can and clean it out. Second, using paint, stickers, or construction paper and sharpies, you can decorate it however you like! If painting, when the paint dries, cover it with acrylic gesso to keep the paint from chipping. When using construction paper, measuring the height of the can is crucial. Cut a strip as wide as the height of the can and decorate it. Once you are done decorating, take tape and wrap the strip around the can and attach it. When making a pot, fill it with potting soil and a 4-6 inch plant. These are a few fun ideas to celebrate Earth Day!

The third craft that I will be showing you are cereal box magazine holders. First, cut the flaps off of the top of the box. Next, make a template to decide where to cut the line on both sides of the box. Trace the line with a sharpie and cut along the line. Trace the template to make another. Glue one to each side of the box to cover it. Make paper covers for the spines as well and glue or tape them on. Decorating before you attach the paper is a good idea. When finished decorating, stick some magazines in it and make it functional!



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Recycling Program

Article by Anna Sanchez, IESA Student

At central campus we have made a big impact on recycling. We recycle cans, bottles, paper, plastics and we have just started recycling electronics. So far the outcome of our work has been great. Every Wednesday our class separates into two teams and we go around the whole school collecting what needs to be recycled. We have an organized map of what classrooms we go to and we take the totals of each room and put that information on a chart. We also grade the room by how well they keep their bins clean and organized. IESA has just started recycling electronics. It is a great benefit for both our program and the school. The company that recycles our electronics pays us for certain electronics being recycled but they recycle all the electronics we bring in. As for the electronics they pay us for some items and we use that money for our program.

In the month of March we have recycled 2,487 pounds of paper, 904 plastic bottles and 469 cans. It has been our best month yet considering we missed a week because of spring break. It just goes to show the dedication and support central campus has for the IESA recycling program. Throughout the entire year so far our program has recycled 11,405 pounds of paper, 1,641 plastic bottles and a total of 1,489 cans. We are doing a great job and we are proud of the work we've done. Imagine how much more of an impact we would have if all schools and businesses recycled. So far our recycling program has been really successful and we hope to make a bigger impact in the future.



Clean Up For Earth Day

Article by Aaron Barnett, IESA Student

As part of our Earth Day activities, we will be picking up garbage in and around Central Campus and Central Academy. The area outside both of these buildings is like most outdoor settings and will have trash build up occasionally. Our plan is to remedy this, and make it a much better area to be in. We will divide into groups, and each of us will manage a separate area. Anyone who wants to help clean up is encouraged to stop by and pitch in. We will also be cleaning up a near close to Central Campus.

Earth Day is Friday, April 22nd. We will be cleaning up these outdoor areas and have several other activities at Central Campus in the lobby of the old main building of Central Campus.

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IESA Display and Handouts

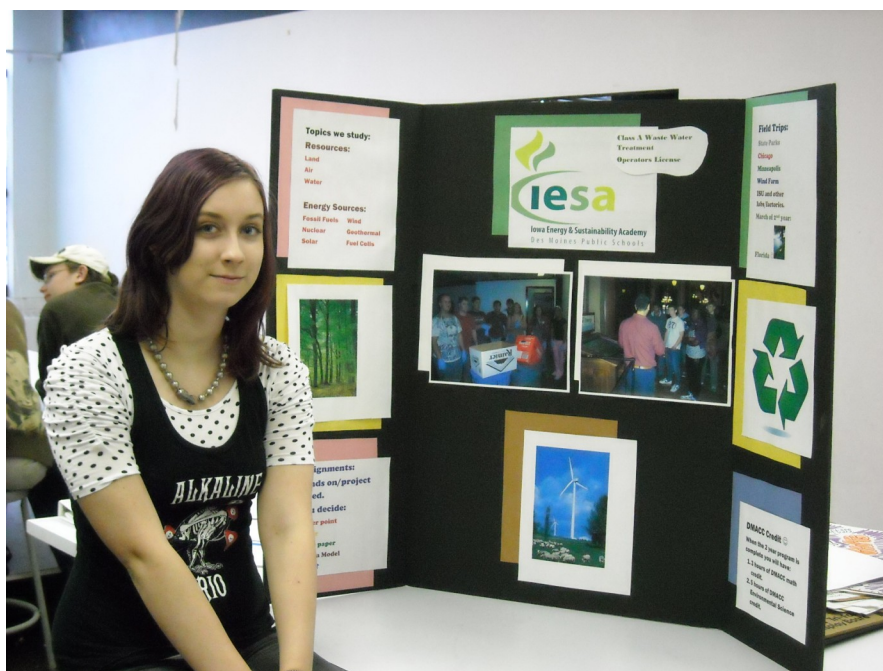
Article by Eleanor Tharp, IESA Student

This Earth Day, the Iowa Energy and Sustainability Academy are having a day full of displays and activities to celebrate the planet we live on. One of these many displays will be about the class itself and will have information on what we're all about, what the program offers and how you can get signed up.

IESA is a brand new program at Central Campus. It is a two year course, but when completed will offer a student three hours of Math and five hours of Environmental Science college credit. The classroom itself is a very friendly environment where we investigate energy options and our natural resources using project based and hands on activities to learn, including our new recycling program.

The class also features many exciting field trip opportunities. In our short time together thus far we have visited the capitol, Chicago, and Iowa State. Now, with our brand new \$40,000 grant we plan to expand even more. Next year we will be going to Florida to see the Kennedy Space Center and explore new energy technology at Epcot in Disney World. We also plan to buy a variety of kits and models that will help us understand exactly how different forms of energy work.

Overall, IESA is a brand new and exciting program that deserves to be recognized and known. If you would like more information on the class or are interested in joining, please come visit us at the IESA Display and Handouts table in the Central Campus lobby on Earth Day. We hope to see you there!



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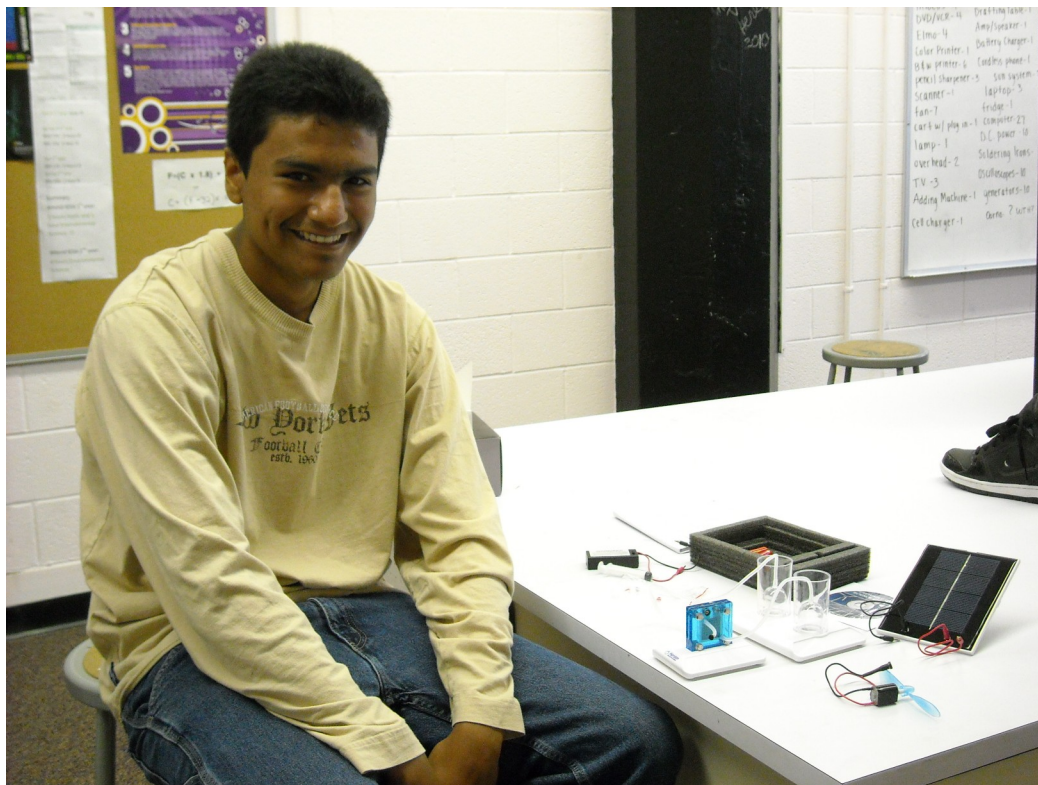
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Solar Hydrogen Kit

Article by Genaro Ruiz, IESA Student

For April 22nd or Earth Day the class of IESA of Central Campus will be conducting an event at Central Campus. This event will be held in the lobby of Central Campus. This event will have displays and leaders who will be taking groups around Central Campus to pick up trash.

I will be demonstrating a new kit. The kit is a solar hydrogen education kit. The kit has PEM reversible fuel cell module, water/gas storage tanks module, mini electric motor and propeller, solar panel, tubing and accessories. The kit shows how solar energy works and how electricity is made by using hydrogen. Using a process called electrolysis, water can be used to form hydrogen. Fuel cells can then convert hydrogen to electrical energy to power anything from vehicles and homes to electronic devices.



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Energy Packets

Article by Tory Zepeda, IESA Student

On Earth day April 22nd the IESA class will have a table downstairs in the lobby with an energy packet that we will be giving out for free. It will contain a little brochure with energy efficiency tips that we got from MidAmerican energy. Then we will have a lot of papers from MidAmerican energy and other sources that we will be giving out. Some of them are Relationships of temperature to energy consumption .This means the approximate change in energy consumption that may result from adjusting a furnace setting above or below 68 degrees and air conditioner setting above or below 78 degrees. The next paper we give out is an article on phantom load. Phantom load is when you plug in appliances and even when the appliances of off they still use energy. They give ways to help stop the phantom load at your house. Then we printed off some papers online about tips on gas mileage. We will also have a paper on energy savers for your house. It gives you tips on some appliances that will help save energy. Another paper we have is on how to use the energy guide label and some questions that people ask and they give answers to their questions. There will be a lot of actives on earth day and we hope everyone will come and join us and let us spread the word about saving energy.



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Water

Article by Neimah Kamara, IESA Student

Water is an important agent of life. With billions upon billions of tons of water on the Earth, one might think that there's no reason to worry about the quality of our water. That is a very wrong assumption. Although there is a seemingly limitless supply of water on Earth, most of it – more than ninety percent of it in fact – is ocean or sea water or locked up in glaciers, and thus requires some kind of cleaning in order to be fit for human consumption and use. This is where waste water treatment techniques come in.

Waste water is “used” water, water that people use in their homes. Waste water can amounts of waste products, such as food scraps, oils, and chemicals. Depending on the method of waste water treatment involved, almost one hundred percent of the pollutants can be removed from the water. One method of wastewater treatment is the physical method. The physical method mainly involves a variation of filtration methods. These filters partially consist of simply holding the wastewater in a tank and letting the heavier waste settle to the bottom of the tank, then passing the wastewater through a sediment filter to further remove the more ingrained waste, such as grease or oils. Chemical wastewater treatment methods include adding an acid or a base to the water to bring the pH of the water to a safe level. There is also a biological treatment method, in which microorganism are added to the water. In the end, the water is not one hundred percent pure, but it is safe enough not to cause major health risks.



As a student taking an Environmental Science and a math core course – and not to mention getting credit for them as well – I think that it is important to consider how wastewater treatment helps the environment and how the wastewater itself can seriously harm the environment and the health of anyone who is unfortunate to consume some. If not properly treated, water can cause disease in both humans and animals. Fishing industries would suffer because the lack of oxygen in the water due to harmful bacteria and waste will cause fish to start dying off in alarming rates.

Earth Day project: recycling tracking board

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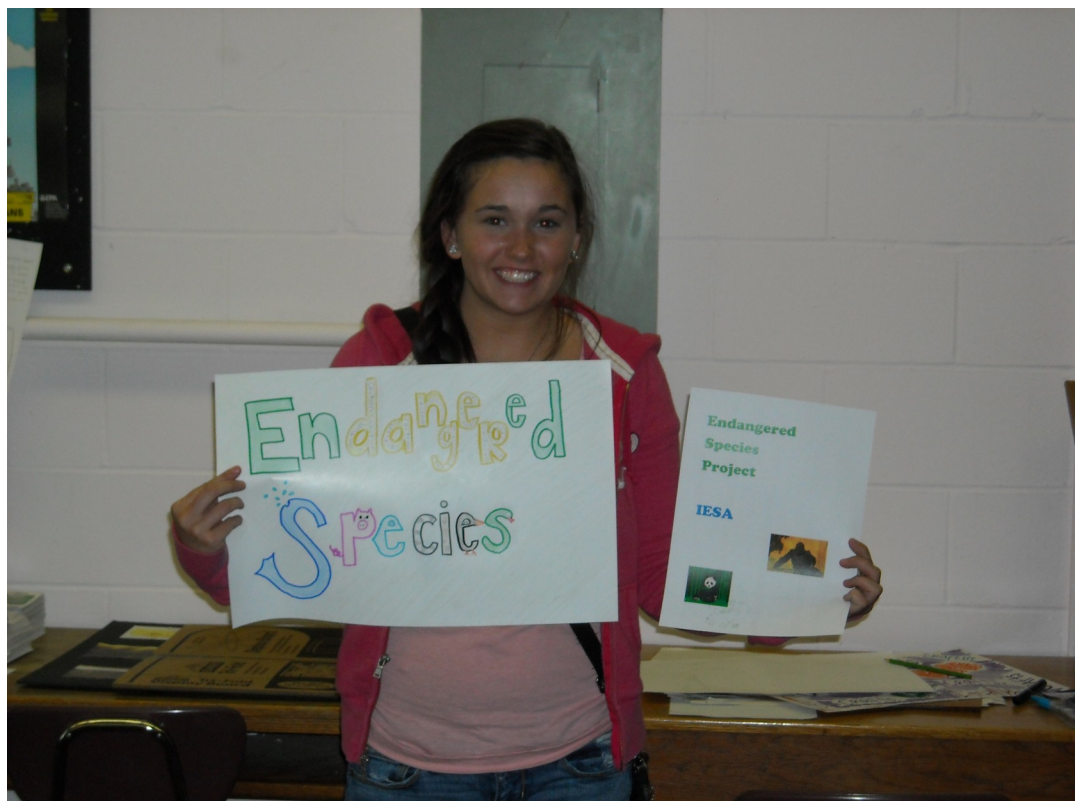
Endangered Species

Article by Sara Jo McAninch, IESA Student

So far this semester, in IESA, we have worked on many activities and projects. One in particular, and my personal favorite, was the endangered species project. You may be thinking, why is an energy class learning about endangered animals and plants? Well, while we are thinking and studying of ways to make the world's air cleaner, it's not just for the humans. Clean air is a major priority to all living beings. Thus we study about the animals that are closest to extinction.

For this project we had the choice to pick from; making a slide show, writing a paper, making a book, and any other creative way we could think to present it. In this project, we tell you the details of select animals that we choose from, whether they were in different countries or on different continents. We inform you about their living conditions, how they got that way, their eating habits and how they have had to adapt due to critical conditions in their particular range. Also, how global warming has affected them, what drastic changes they have had to make, and what conservation organizations or zoos have adopted them and put that species in to recovery.

Just learning about solar, wind, nuclear and all other forms of energy isn't the only thing we learn about in IESA. We do our best to get informed about all the facts that have to do with energy, especially the way it starts to affect our environments. We want to make sure that we learn the best ways to keep our air cleaner and safer for all the living things. IESA is a great way to learn about all these amazing things in and on planet Earth.



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Energyville Challenge

Article by Tyler Starner-Fry, IESA Student

In our class we have been playing a game called Energyville. It's a game where you take your own city and power it in different ways. The way you win is by making your town most economic, environmental, and energy friendly.

This game lets you learn a lot about how the way you decide to make a power source. After you choose your power sources it takes you through a time line where your decisions could become good or bad. After the timeline you get one more shot because your city grows, so make the best decision that you can. Now you can go see if you're the best in the world but to do that go to <http://www.willyoujoinus.com/energyville/>.

So come to the main lobby at Central Campus on Earth Day to try this out. Or you can do it at home but the one who gets the highest score gets a free T shirt, so come on down and learn ways to help the environment.



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Energy Challenge

Article by Ian Hillegonds & Connor Schurr, IESA Students

The Energy Challenge for Iowa schools involves four steps. First, figure out what energy we are using, and where it's being used. Secondly, how we can save energy in those areas, and why energy is being wasted. Third, we strive to educate people on how to save energy. And last, we compare the beginning and the end uses of the energy to see exactly how much we saved. The IESA has the honor of being one of only a few schools to be participating in the Iowa energy challenge.

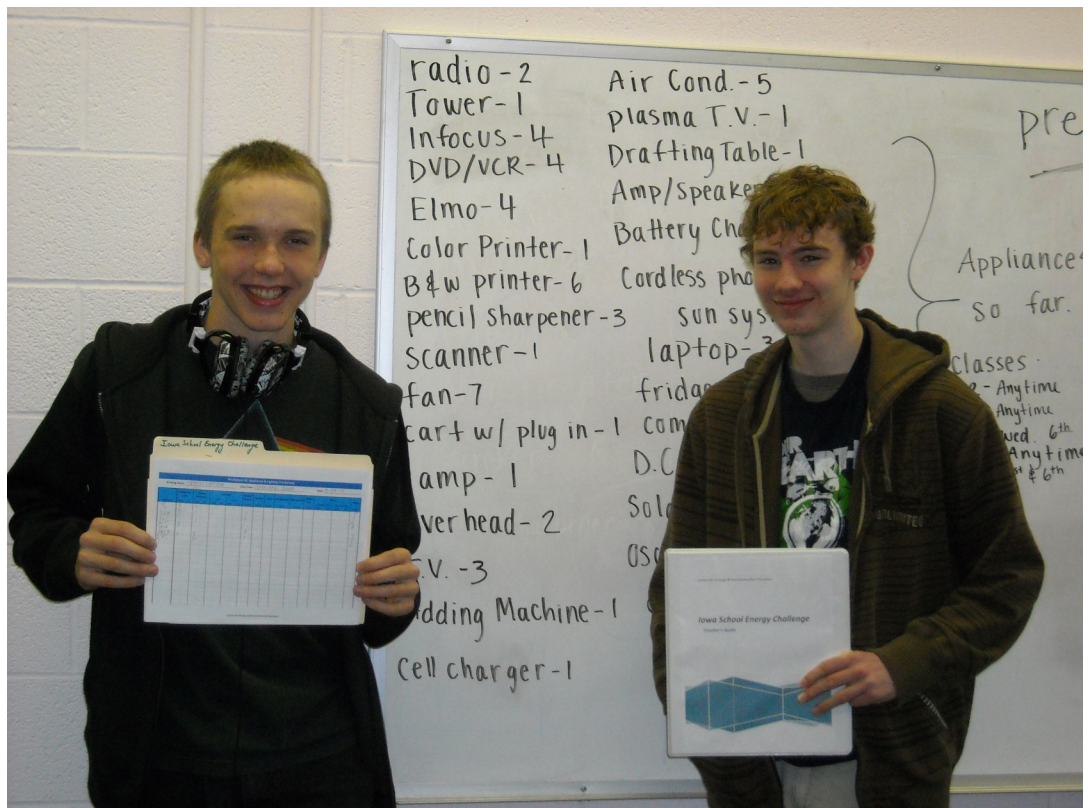
First we went around the school and got the teachers to write down everything that they are using that requires any energy in their classrooms. This includes things that most people don't use regularly, that they don't use with other people and things that you don't even think about when you're using them! This is the first step.

The second step, that we do is figure out, with a little math and a little science, how we can save the most energy. How we can make the largest difference in the overall schools energy usage board is what we're striving to do. This might include things like inserting energy saving protocol on computers like faster shut downs, or even just turning the lights out when you aren't using them.

Step 3: educate. The point of the education process is to inform and motivate schoolmates, teachers and administrators to actively participate in reducing energy.

Step 4: The last step we perform is to compare the energy used before and after the experiment to determine the impact our class has made in reducing energy consumption in our school.

Those are the 4 steps we will take to reduce reuse and recycle this year for the Iowa Energy Challenge!



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Things We Do For Fun

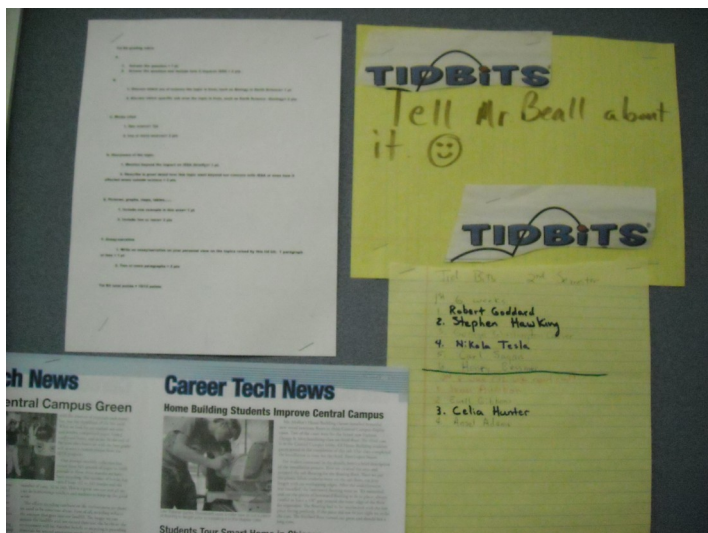
Article by Andrew Brownell, IESA Student

Tid bits are something we do to learn about people and the things the people did. We relate what they did to us "IESA" and tell how they helped or made their part in the world. We also talk about the person and where they are from, what field of science they were in, and where they did most of their work at as in what part of the world.

A few of the tid bits we've done so far are John James Audubon he was famous for the way he recorded birds and his paintings that he did of them. He went more in depth than anyone in his time on telling about the animals.

Anyone over forty might remember this next one Euel Gibbons. He was the Grape nut guy who had the commercial that he started off with "did you know there were parts of pine cones that are eatable?" His main focus was to show you a healthier way to eating and the stuff you could eat that you didn't know about.

If you like to hear more about other tid bits come to our display at central campus April 22nd from 8AM to 11AM.



Tid Bits

Article by Ernesto Portillo, IESA Student



In the IESA class we do many things, and among those are "Tid Bits" which can include names of people that made or are making a difference but also events that had an impact on the science community or our own life in personal. It gives us not only the chance to get to know great human beings or great life changing events but it also makes us relate it to our own life and how it benefits us.

The first one we had is the December 1968 picture of Earth's rise, originally titled Spaceship Earth. At that time the whole world was in conflict, that picture made people think and realize that they have to take care of Earth and that this is the only place which we have so we have to protect it. We either protect Earth or she will get rid of us in order to protect itself, so it's our own choice.

Another one of many that we have done is the one on The Love Canal which ended up not finished, then a factory bought land on it and disposed of chemicals that were very dangerous for health, after the company had no use for it, the land was sold for \$1 to be turned into a school, the problem was that kids were having serious health problems because of the chemicals previously disposed in that land. People from that area moved and a program of millions of dollars was started to clean that water or to hold the chemicals down on the ground. It was an event that leads government institutions to revise and change regulations.