



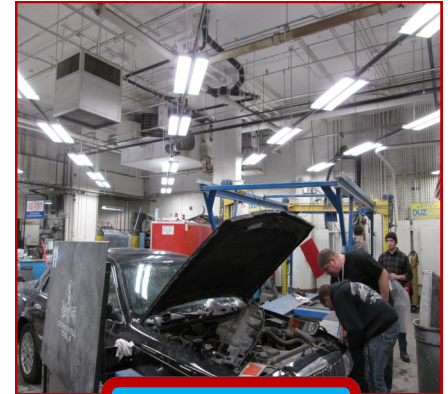
## VOCATIONAL SHOPS AT CENTRAL CAMPUS GET LIGHTING UPGRADES



The DMPS Energy Team has partnered with students in the Iowa Energy and Sustainability Academy to relight the auto technology and welding shops at Central Campus. Reducing the number of fixtures will reduce the amount of energy being used, while the quality of lighting will be improved.



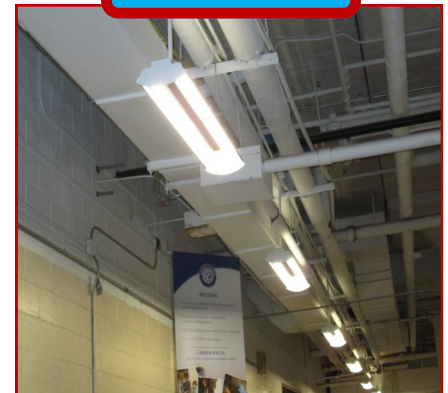
OLD



NEW

“The lights are a big improvement. It’s definitely brighter and more white. Before the lighting was more yellow.”

-Joel Samuelson, Auto teacher



DMPS is recycling all of the wastes being generated from the removal of the old lamps and fixtures, including the packaging for the new fixtures.

- Old Light Fixtures (T-12 Lamps)
    - 500 2-Lamp 4' Fixtures
    - 100 3-Lamp 4' Fixtures
    - 30 2-Lamp 8' Fixtures
    - Electric Consumption = \$38.30 per day
  - New Light Fixtures
    - 300 2-Lamp 4' Fixtures (T-5 Lamps)
    - 45 4-Lamp 4' Fixtures (T-8 Lamps)
    - Electric Consumption = \$15.34 per day
- Savings = \$22.96 (60%) per day!**

# THINGS HAPPENING IN IESA

GENESHA WILLIAMS

**T**hings we are currently working on in IESA are preparing for the science fair on February 13th. We can do our project on any science topic we choose. Some people are choosing to make their science fair project have to do with an IESA topic so that we can show them both in the science fair and on Earth Day which is on April 22nd. My project is the difference between LED bulbs and compact fluorescent bulbs. Other projects include plastic vs. paper, lung cancer, invasive species and endangered species.

*“There is a lot more to defining things than just a textbook definition.”*

Another thing we’re working on is defining sustainability and carbon footprint in detail. According to Webster’s Dictionary, the definition of sustainability is “able to last or continue for a long time.” Yet, I defined sustainability in its simplistic form as the things that help the planet and benefit us by helping to keep

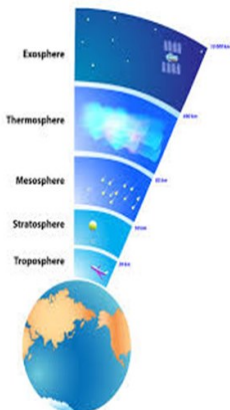
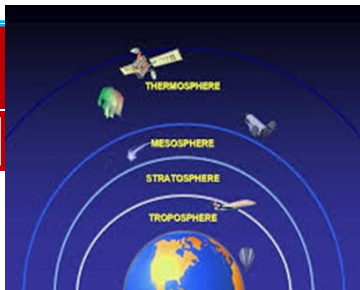
the world able for humans, plants and animals to live in. Carbon footprint is defined as “the amount of greenhouse gases and specifically carbon dioxide emitted by something.” I defined it as the amount of greenhouse gases people, businesses or countries put into the atmosphere that causes climate change/global warming. There is a lot more to defining things than just a textbook definition.

The last thing I am going to share about the happenings in IESA is the tidbits. Currently we have two—Robert Goddard and Stephen Hawking. For tidbits we are basically just supposed to find out as much as we can about the person or event and site the texts in which we learned about them. We have done many since the beginning of the year, but favorites of mine are Rachel Carson, Chernobyl, Jane Goodall and Ambassadors of the Environment. IESA is doing a lot in February.

## Atmosphere

**Sophia Garcia, Lincoln High School**

The atmosphere is what helps us from being burned to death by the sun, brings the rain that our plants need to survive, holds the oxygen we need to breathe and holds gases the planet needs to survive. The atmosphere is retained by earth gravity. Earth atmosphere consists of 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide and small amounts of other gases. Without the atmosphere there would be no life on earth. The atmosphere plays a major role in the water cycle as well.



**Troposphere:** lowest layer of the atmosphere, closest one to the surface of the earth, where most of the weather occurs

**Stratosphere:** 18km above the troposphere, contains a layer of ozone that absorbs the sun’s ultraviolet rays

**Mesosphere:** reaches 80km above the surface of the earth, coldest layer of the atmosphere

**Thermosphere:** 80-100km above earth surface, very little to almost no air

**Exosphere:** very outer limit of the atmosphere, bottom of this layer is 500km from earth’s surface

# Endangered Species

Mariama Charles, Lincoln High School



Endangered species colloquially refers to any species that fits the description, whereas conservation biologists typically refer to species that are designated endangered in the IUCN Red List populations, following critically endangered. Over 3,079 animal and 2,655 plants are endangered worldwide, compared with 1988 levels of 1,102 and 1,197 respectively.

An example of an endangered species is the South China tiger. Their population estimated to the number of 4,000 individuals in the early 1950s. In the next few decades, thousands were killed as the subspecies was hunted as a pest. The Chinese government banned hunting in 1979. The South China tiger species are a reminder that the threat against the world tiger is an urgent one. Today, South China tigers are found in zoos and in South Africa where there are plans to reintroduce captive-bred back into the wild.



Another animal that is endangered is the Amur tiger. The most immediate threat to the survival of Amur tigers is poaching to supply demand for tiger parts on the black market. Tiger forests are also at risk from logging, conversion to agriculture, urban expansion road construction, mining, fires and inadequate law enforcement.

There are many ways to help animals like the South China tiger or the Amur tiger. One of the most important ways to help threatened animals survive is to protect their habitats permanently in national parks.

## FACT OR FABLE?

### Lights use more energy when they are first turned on

This is a **fable**. When a fluorescent light is first switched on, there is a higher current draw for a second or so.

However, the length of time for this higher current draw is so short that it has almost no effect on energy use. Leaving a fluorescent light on for more than a few minutes will use more energy than turning it off and turning it back on when needed.

A ballast regulates current to the lamp during startup and operation. Turning lights on and off frequently will have some impact on lamp and ballast life. However, the old principal of leaving lights on if the room is unoccupied for more than 15 minutes no longer holds true.



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MidAmerican  
Energy by  
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# ENERGY REPORT CARD

YEAR-TO-DATE SITE ENERGY USAGE REPORT , July 1, 2013—January 31, 2014

Percentage change as compared to same period time from last year

Site	Total Energy (MBtu)	% Chg		Site	Total Energy (MBtu)	% Chg	
Findley	803	-68.3%	♥	McCombs	2,618	-13.2%	♥
Pleasant Hill	513	-63.9%	♥	McCombs Greenhouse	757	-13.1%	♥
Jefferson	678	-54.5%	♥	Perkins	975	-12.3%	♥
Lincoln Football Field	129	-44.0%	♥	Moulton	5,153	-10.7%	♥
Dean Operations Center	1,723	-42.3%	♥	Kurtz Athletic Fields	9	-10.4%	♥
North Athletic Fields	205	-37.6%	♥	South Union	1,240	-9.3%	♥
McKee	373	-31.5%	♥	Windsor	982	-9.2%	♥
Brubaker	1,121	-31.0%	♥	Jackson	846	-8.8%	♥
Hoyt	4,096	-30.7%	♥	Wright	695	-8.8%	♥
Willard	1,318	-30.0%	♥	Hubbell	1,673	-8.4%	♥
Welcome Center	215	-28.5%	♥	McKinley	1,614	-8.1%	♥
Prospect	3,864	-28.2%	♥	Samuelson	1,051	-6.7%	♥
Cattell	1,012	-27.7%	♥	Hillis	985	-5.1%	♥
Hiatt	1,495	-27.2%	♥	Morris	1,103	-4.8%	♥
Harding	2,594	-26.5%	♥	Mitchell	674	-4.0%	♥
Monroe	2,261	-25.2%	♥	Roosevelt	10,565	-3.0%	♥
CNC	6,528	-24.9%	♥	Greenwood	1,193	-2.4%	♥
Phillips	1,235	-23.0%	♥	River Woods	2,602	-1.5%	♥
Aviation Lab	413	-22.2%	♥	Hoover/Meredith Fields	213	-1.2%	♥
Park Avenue	1,214	-21.3%	♥	Callanan	3,074	-0.10%	♥
Capitol View	1,663	-21.1%	♥	Howe	795	3.6%	♥
Hanawalt	789	-21.1%	♥	Kurtz	5,898	4.7%	♥
Garton	1,359	-20.2%	♥	Hoover/Meredith	12,138	5.5%	♥
Carver	1,253	-18.5%	♥	Van Meter	4,621	6.7%	♥
Goodrell	1,636	-18.3%	♥	East	17,116	7.2%	♥
Walker Street	1,196	-18.3%	♥	Studebaker	1,058	7.4%	♥
King	662	-17.9%	♥	Lincoln	16,862	8.3%	♥
Brody	3,309	-17.6%	♥	Central Campus	24,354	16.3%	♥
Madison	928	-16.5%	♥	Merrill	3,942	21.3%	♥
Central Academy	2,723	-16.3%	♥	Stowe	1,073	27.7%	♥
Oak Park	1,114	-15.4%	♥	North	12,632	27.8%	♥
Cowles	994	-15.4%	♥	Moore (Scavo)	2,313	28.6%	♥
Woodlawn	683	-15.2%	♥	Smouse	5,165	30.1%	♥
Walnut Street	4,627	-15.1%	♥	East Athletic Fields	263	75.7%	♥
Weeks	3,045	-14.4%	♥	Edmunds*	850	N/A	👷
Lovejoy	942	-14.2%	♥	*Edmunds does not have comparable information from last year due to reconstruction.			

Key	♥	Increase in energy use
	♥	Maintaining energy use
	♥	Decrease in energy use

Visit [www.dmschools.org](http://www.dmschools.org) for more details of the district's energy mission and building performance. Do you want to share your ideas for saving energy or helping our environment? Or want to let us know about your projects? Tell us about it! E-mail [Michelle.Chalkey@dmschools.org](mailto:Michelle.Chalkey@dmschools.org)