

Led Lighting and Facts and Problem

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Environmental Science

Problem: Energy waste, specifically energy inefficient light bulbs.

Why It Matters:

Incandescent and fluorescents do not last as long as led bulbs. LED's according to the EPA and Energy Star can last up to 25 years longer than regular bulbs! Not only that but LED's operating cost is just \$1.00 while fluorescents operating cost is \$1.20 and incandescent \$3.50! This means there are fewer turnovers in homes which use less resource. Whats worse though is both incandescent and fluorescents contain the extremely dangerous chemical Mercury while LED's do not. Not only that but 1/3 of America's energy problems would be solved if everybody switched over to LED's. The EPA reported that it could save \$265 billion and cease the construction of 40 new power plants.

Solution:

Kameron, Ryan, and I were thinking of replacing any school lights that have not already been replaced and replace them with energy saving efficient bulbs.

Facts about Efficient Lights (LED):

-LED stands for light emitting diodes.

-LED lights were originally used to decorate in holidays mainly Christmas trees. We have only recently learned that LED's are more energy efficient than regular bulbs.

-LED's are more expensive than compact fluorescent bulbs but they stay cooler to the touch and they can last up to 3-5 years longer than regular bulbs.

-They also use 5 times less energy making them more eco-friendly than fluorescent's and more energy efficient.

-LED bulbs have a series of diodes inside them; each are approximately 1/4-inch in diameter.

LED bulbs are more durable than fluorescents withstanding bumps and cracks. They can last 10 times longer than fluorescent bulbs. They don't produce heat so you're A/C costs stay the same.

They are cost effective even though their initial price is high they save you money overlapping their initial price multiple times.

Action Plan for Environmental Project

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Ryan Karwacki

Kameron Williams

Tools Requirements and Information

- Mr. Lightfoot Permission
- Background Information
- Number of non-LED's in school
- LED's to replace old lights
- Time to carry out plan
- Money

Steps of our Project

- 1) Obtain Permission from whoever is responsible.
- 2) Investigate how many LED's are needed.
- 3) Determine cost types of bulbs, where they are ordered from. (Mr. Yuri, Ms. Dennison)
- 4) Present costs and proposed plan to Mr. Lightfoot.
- 5) Put plan into action.
- 6) Obtain time off of classes. (3rd period, lunch, advisory)
- 7) Replace the old lights.
- 8) Record how many needed to be replaced on each floor.
- 9) Whose rooms needed to be replaced with LED's?
- 10) Return to teacher to submit the information.

LED INFORMATION

-LED stands for light emitting diodes

-LED's started being used as Christmas lights

-The use of LED's is growing

-Examples:

Flood Lights

Traffic Lights

Lamps

New car headlights, brake lights, reverse lights

Club lights

Strobe lights

Laser pointers

-LED's do not contain poisonous substances like other options

-LED's can last for more than 20+ years

-Can project in red, orange, yellow green blue, violet purple and pink.

- Are good for the environment

-They use less energy which saves money for other stuff

-They last longer so less material is used

-They're bright so you don't need a lot of them to light a room

-They don't break easily so you don't have to throw them away

-They are very expensive

-They aren't as common as regular CFL's

Compact Fluorescent Info

-A compact fluorescent lamp compact fluorescent light, energy-saving light, compact fluorescent tube are other names for compact fluorescents

-CFL's is the acronym for compact fluorescents

-CFL's are easily available everywhere

-they are inexpensive

-They save more money than regular incandescent bulbs

-They can last up to 10 more years than incadescent's

-CFL's are used only to light homes at this point in time

-CFL's contain one of the most poisonous substances known to man. Mercury

-CFL's need a period to warm up before they provide full light