HS Explanatory: Sunflower Power

Task Prompt: Write an explanatory essay about sunflowers. Using more than one source, craft a thesis to explain the ways in which sunflower seeds can be used to create biofuel and the economic implications of this process.

Sunflower? No! Sun Power!

There is a lot of research and experimentation happening across the country currently as scientists try to determine reliable sources of energy that can be produced from organic matter. Sunflowers are emerging as one of most promising agricultural crops we have studied so far. They are being cultivated around the world in order to try and provide a solution for our over dependence on nonrenewable fuels. Sunflowers are a cost effective and environmentally friendly source of energy that we can harness to create biofuels. This easily harvested plant has great potential to help us cut back on other energy sources that we are using up too quickly, boost our economy while doing so, and help the environment.

Sunflowers can produce a large amount of biodiesel that can be used to power various things. We can draw enough energy from them to power a significant amount of a facility or product which would normally use up a lot of resources that cannot be renewed. In Source #3, “Sunflower Power? An Entrepreneur’s First Steps” the author, Adam Burke, writes about a facility in Dove Creek, Colorado where they are growing sunflowers, as well as using them to power their plant that creates food-grade sunflower oil. The text says “The system will eventually produce a third of the electricity and all of the heat needed to run the plant.” The power provided from sunflowers is enough to have a major effect on decreasing the amount of harmful resources we use to run our factories. One third of the electricity and all of the heat of almost every facility in America would save us an immense quantity of nonrenewable sources. The fuel that we can create from sunflowers can also be used to power sources of transportation. In Source #1, “Biofuel from Sunflower: A Bright Opportunity for the Sun-loving Bloom.” by Rita T. dela Cruz the article states “an Italian farming association is working on biofuels produced from sunflowers and sugar beets. Its sunflower oil-powered boat premiered at the recent Kyoto Protocol conference in Montreal. It sounded a bit off-beat, but the boat ran fine.” If we were able to incorporate this fuel into almost all modes of transportation the effect it would have on our economy would be tremendous. As well as saving us plenty of money having vechicles powered by biofuels would also help us cut down on our usage of fossil fuels, which is one of the main nonrenewable energy sources that we are depending on much too heavily.

The energy sunflowers could provide us is very easily accessible. First of all, along with being researched by scientists, the energy that sunflowers can provide is also being tested by volunteers and high school students, proving that it is not an intricate source of energy to access and incoporate into our products and sources of production. In Source #2, “Sea of Sunflowers Becomes Biodiesel” the

author writes about how near Phoenix a project has started up called Valley of the Sunflowers Project where volunteers have planted sunflower seeds and are now tending to the flowers so that they can be harvested. Braden Kay, the Sunflowers Project Manager says “What we’ll do is take these seeds, press these seeds for oil, and then the bioscience class will make these seeds into biodiesel,” Then the article continues “They’ll then use the biodiesel to power a solar powered hybrid car they’re creating in class”. If volunteers and high school students can extract biodiesel from these flowers and use it to power a car then professionals and scientists certainly can too. Creating biodiesel from sunflower pieces is also a relativily uncomplicated process. This would make it easy for us to produce biofuels in large amounts. In Source #3, “Sunflower Power? An Entrepreneur’s First Steps” by Adam Burke the author describes the simple way that a facility in Dove Creek, Colorado uses sunflower waste material to power their business. “The facility’s main green innovation is the way that waste products-in this case sunflower hulls and pieces of plant material- are transformed into fuel. Machines grind up this biomass and press it into little fuel pellets, which look like rabbit food. The pellets are then fed into a special gasifer chamber.” The procedure of converting these leftover sunflower pieces into usable energy is not complex and the implications of this process would have great benefits as we would save a lot of money and it would help make our nonrenewable resources last us longer.

Growing sunflowers also has many other environmental benefits. Besides the biofuel that they can provide there has also been research done showing how they can help with issues like pollution. In Source #4, “Shrinking Violets They Aren’t”, by Michael Tortorella the author writes about a community garden in Brooklyn that has planted a perimeter of sunflowers around their lot. Deborah Greig, a coordinator at the community garden said “The sturdy sunflower does not shrink from a little hard labor”, then she added “I think they do some catching of the trash that blows in.” The way that these sunflowers could protect other more vulnerable plants from damaging trash could be very helpful to us as litter oftens blows into plants and affects how they grow. Sunflowers can also do important things like helping to keep the soil cleaner. Later in the Source #4 the author writes “growers are experimenting with sunflowers in a soil treatment process called phytoremediation. In field tests last summer, the plant’s deep taproots seemed to pull heavy metal contaminants like mercury and lead from the garden’s polluted soil.” Growing sunflowers in areas that are polluted could help draw out some of the harmful things in the ground. This could make these areas of land healthy enough that we could grow other plants there again, and having more land to grow on could help improve our economy.

Sunflowers are capable of providing us with a dependable source of natural energy through biofuels. They are currently one of the biggest hopes to help solve our problem with overdependance on nonrenewable energy sources that also harm our environment. Biofuels can easily be drawn from sunflowers and they provide large quantities of fuel that can be used for various things. Along with that planting them also has many other positive affects on the enviroment.