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SCIENCE PROJECT RESEARCH PAPER

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3. Neil Morris
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4. Kevin S.
Calculating Your School's Carbon Footprint
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Do you ever hear your parents mumble something about global warming and you don't know what they are talking about? If you wanted to know, you're in luck! All the stuff you wanted to know about global warming is in this report! You will learn what global warming is, what it does and how we can try and stop it.

Global warming is the unnatural warming of Earth's average temperature. It's unnatural because humans are causing it to happen. Ever since the Industrial Revolution began about 150 years ago, the earth has been warming. Because of this the natural carbon cycle has been disrupted.

Everything on earth is part of the natural carbon cycle. Here is a small example of how the cycle goes. Plants die and release CO₂. After that, other plants take it in and they grow. Animals eat the plants and let out the CO₂. This finishes the cycle. Lately, the cycle has been disrupted by humans. We have affected it by using cars, factories, homes, etc. Global warming is a problem we have to solve now.

You may have heard of the greenhouse effect. It's what keeps our planet from becoming an ice box. It's called the greenhouse effect because it traps some of the heat that comes in like a greenhouse trapping heat to grow plants. "The greenhouse effect is essential to life on earth." (Evans)

The normal greenhouse effect keeps the average temperature at 57 degrees F but when we are emitting extreme amounts of CO₂ we make the effect turn bad. We must stop this.

The main source responsible for climate change and/or global warming is carbon dioxide, CO₂. "The average American adult lets out 20 tons of CO₂ a year. The average kid releases 2 ½ tons a year." (David and Gordon) Other main greenhouse gases are methane, carbon monoxide and nitrous oxide. All these gases are more powerful than CO₂. We let out 82% of CO₂, 9% methane, 5% NO, and 4% of others. If we don't lower our emissions, there is a possibility that we'll run out of our non-renewable fossil fuels.

The effects of global warming are terrible and they will become even more terrible. No matter what, global warming will have an effect on everything.

Animals have been increasingly affected. Animals always have been able to adapt to climates but those climates changed over long-term periods. Global warming has been happening for the last 150 years and that is too fast for animals. Many species have already gone extinct.

Global warming is also affecting some animal's habitats. In the Arctic, the ice is melting very fast so the polar bears will starve or even drown due to receding ice. They starve because they feed off the seals through the ice. They can drown because of having to swim for such long distances.

Some animals have already become extinct due to climate change. For example, scientists have officially declared the golden toad extinct. The golden toad lived in the Monteverde Cloud Forest Preserve in Costa Rica on the upper slopes of the mountain. Since the clouds touched the ground, it kept their skin wet. But, because of global warming, the clouds didn't touch the ground any more so the toad's skin became dry and it died.

There is a "good side" to global warming. In the next century, locusts, rats, mosquitoes, cockroaches, bark beetles and bacteria will thrive. More people will die of hunger. Whole cities will be infested with rats and cockroaches. West Nile Virus and Malaria will occur more. Spruce trees will die off. With the explosion of these species, other animals will die off because of hunger, disease and other things. The world will be a miserable place for both humans and animals.

A huge increase in the temperature will also occur. At the moment, "the average temperature has risen by 0.8 degrees C so far." (Morris) We are experiencing the effects of pollution over 50 years old, so it will only keep getting warmer.

Most of the world's glaciers will completely melt by 2025. Moreover, the entire Greenland ice sheet could melt completely in the next century. Also, severe droughts and terrible floods will happen. Global warming also creates strange weather patterns that are hard to forecast. Global warming will destroy us if we keep our ways up.

Can we change our ways? Fortunately, it still may be a possibility. We could do this by not using non-renewable energy such as fossil fuels and instead use low-emitting gases like geothermal and biomass as an alternative. Some renewable energies we can use are hydroelectric, wind, hydrogen and solar energy. All this energy is great for the earth.

We could also ride our bikes more and go on public transportation instead. It would save time and energy. We can turn off lights, not leaving plugs in the

wall because they still run while they're in. A couple more are taking two to five minute showers and not wasting time thinking about stuff.

If we keep our bad ways forever, the future will be influence badly. The European Union wants to limit global temperatures to rise only 2 degrees C in the future. As you know, it's not going to work because the temperature will keep rising. "California also wants to limit emissions to 80% of 1990 levels by 2050" (Driveneutral.com). With these regulations, we might succeed in our quest to stop global warming from getting worse.

I learned from by research how I'm gong to find out Montera Middle School's CO₂ emissions and it's "Carbon Footprint." A carbon footprint is the amount of CO₂ that you put into the atmosphere by doing your normal activities. Some examples include using computers, heating, lighting, cars, buses, etc.

First, I will have to find out about Montera's school profile, electricity and natural gas consumption, transportation by cars and buses to and from Montera and the average number of miles kids travel to get to and from the school. I will survey all the students at Montera for this information. After I collect this data, I will multiply by an emission factor of CO₂ for every one of these sources. Finally, I add it all up and boom! I got my answer.

Global warming is a problem that we have to deal with now. Otherwise, we will destroy our precious planet. Think of all the poor animals out there whose habitats are becoming wrecked. We can stop that be getting off non-renewable energy. Kids can make the difference! So help the cause and fight global warming!