



CARPOOLING BISHOPS

To reduce carbon emissions emitted by cars on their way to and from school.

TACKLING CLIMATE CHANGE

At least one and a half tons of carbon dioxide are emitted by Bishops parents every day, just from travelling to and from school. Our project aims to drastically reduce this quantity through reducing the number of solo cars on the road in the morning.

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Big Ideas 2019

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Introduction:

A Brief Roadmap of Our Narrative:

Our narrative starts off with an introduction to our group, and what the Sustainable Development Goals are. This includes the aims of our project, and why we think this project could help to make a difference in the fight against climate change.

We then move onto the body. The body discusses our previous ideas, successes and failures, and the processes we went through throughout the course of our project. The body also discusses our background research, and the context in which our project was formulated.

Finally, the conclusion sums everything up, and is where we discuss the outcome of our project, and how it could be improved.

Introduction to our Group

We are a Big Ideas 2019 Group, that consists of Michael Beaumont, Ethan Smith, Erik Todd and Benji Reid. We are grade nine students at Bishops Diocesan College in South Africa, and for the past two terms have been partaking in a course that educates us on the 17 Sustainable Development Goals - created by the UN. (unilever.com, 2015) The



All the SDGs

sustainable development goals were created to try and create a nurturing environment for all people and create a sustainable global infrastructure to carry the earth and humanity into the future. Our aim was to, by the end of two terms, have created a project that addresses one of these specific SDGs and present it to an audience.

The Beginning

The Earth is four and a half billion years old, and life has existed and thrived for almost this long. (PBS, 2019) The earth has naturally heated and cooled in a cycle that follows the patterns of the ice ages. It wasn't until the industrial revolution, when man started digging up and burning fossil fuels that had been formed over millions of years storing up carbon, did the temperature start to rise against the natural trend. (nasa.gov, 2019) If the history of the Earth was condensed into twenty-four hours, we humans would only have existed on the earth for three seconds. (Ea, 2019) If we are not careful, we as a species will never see the fourth one.

Big Ideas before getting into our groups

Before this power team was formed, we all went through the first few weeks of Big Ideas. In these early days we were taught to think critically about things in the world and think in innovative and new creative ways to try to connect the many parts that make up the complex issues we are facing today.

We all felt that one of the main and strongest themes was interconnectedness and seeing things

in a non-linear way and how everything affects everything else. This was a hard mindset to get into but with the help of many outings, videos and talks we started to see things in a new light. For all of us climate change stuck out the most and really seemed like the most pressing issue, after all if climate change destroys the earth there will be no habitable earth to apply the other goals to. Since so many things contribute to creating and preventing climate change, nearly every article we were asked to summarize was linked to Climate Action in one way or another, we could only see this link because of the way we were taught to see the connections in the world.

The third term was very fun. We went into each class thriving to know more about each different SDG. The SDGs are all interconnected in some way, this creates quite a complex system. I understand that what our group has been doing will in some way effect other SDGs. Understanding how SDGs effect each other is one of the biggest things I took out of term 3.

- Ethan

Ethan reflecting on Big Ideas in the third term

What are the problems?

Climate change and global warming is arguably the biggest threat currently facing humanity. The effects that it may bring are truly terrifying. One of the first articles on our reading list that we received in the June holidays really reinforced this. It was written using data collected from dozens of scientists and scientific papers and it detailed some of the consequences of climate change. (Wallace-Wells, 2019) The first section of the article spoke about the Doomsday vault in Norway - the world's food bank meant to be kept frozen through any disaster. The permafrost surrounding the vault melted, and the vault was exposed. It has since been secured, however this first section drove home how even permafrost is being affected by climate change.

Some of the other sections were even more frightening. The same article spoke about how global warming could reach such a degree that huge parts of the Middle East could be completely uninhabitable within a few decades. (Broom, 2019) Even a relatively small change in temperature could trigger a mass extinction. Crops can only be grown within certain temperature parameters so if climate change causes global temperatures to rise past the upper limit, we will no longer be able to grow food securely. This will cause unprecedented food shortages which will cripple our world as we know it.

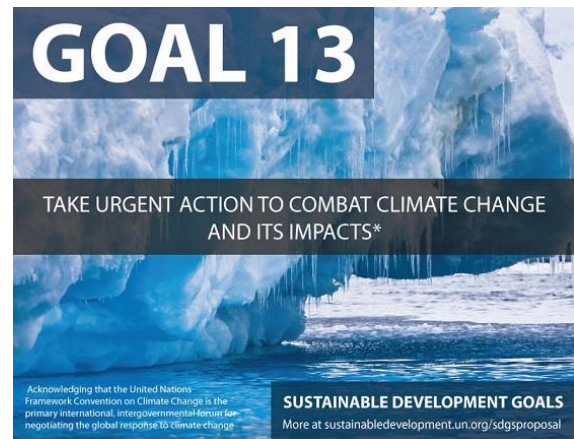
Knowing that the middle east may be uninhabitable in the coming decades is devastating. I lived in Jeddah, Saudi Arabia for more than five years of my life. My dad is currently still in the middle east working. Seeing my second home go down in flames would be very upsetting so I want to do as much as I can do stop this from happening.

- Ethan

Ethan reflecting on the affect's climate change could have in his life

What are the specific problems that we addressed?

For the second part of the Big Ideas course, we all had to choose a specific SDG to work with, and create a project around it. As we have explained, Climate change (corporate-citizenship.com, 2015) is an enormous issue, and that is why the members of our group all gravitated to Goal 13 – Climate Action. We chose to focus on climate change, because if there is no Earth, then no other SDGs can be fulfilled. SDG 13 is the goal that focuses on climate change and combatting its causes and effects.



The climate action SDG graphic

We came up with a few initial thoughts but eventually settled on the idea of doing something at Bishops, in our community. We drifted through a few ideas, such as trying to tackle meat consumption at Bishops, and reduce it. We discarded this rather quickly, as we didn't see a practical and effective way to do it. We went through a few more ideas before eventually settling on the topic of transport. We found that cars contribute to more than 23% of the world's carbon emissions (WHO, 2019) (not including transport from other industries). This is a huge percentage, and one which we felt can be tackled relatively easily. Cars cause pollution which leads to further issues such as disease. The pollutants, such as carbon monoxide, ash and carbon, can lead to respiratory illnesses. Traffic in the mornings is also incredibly bad. All of these issues can be tackled by taking on the root cause - the large number of cars that carry only one person to and from school every morning and afternoon. The more people per car, the lower each person's carbon footprint, and the less carbon dioxide is emitted.

Reducing Bishops' carbon footprint through lowering the number of cars on the road was the project which we settled on. We will discuss it in greater depth later on in our narrative.

Who do these problems affect?

The issue of climate change is not one that will affect an isolated group of people. It will be a crisis for everyone however some people are much worse affected by climate change than others. These are people who live near the coasts, and in extreme climates. (Nugent, 2019) Out of the top ten most vulnerable nations with regards to climate change, nine of them are African. In many of the countries, extreme population growth coupled with huge droughts or floods have the power to destroy these countries almost completely. The most vulnerable people in the world currently are also the least economically secure, and will also suffer the worst effects of climate change. (Nugent, 2019) Sea level rise corresponds directly to climate change. One of the issues raised in New York Magazine (Wallace-Wells, 2019) was a huge increase in kidney disease due to dehydration and higher temperatures. This was one of the milder effects. Fumes and pollution can also lead to many respiratory diseases and other health issues. (ucsusa.org, 2019)

Who do you want to help?

Our project is one that affects not only the global population but the parents in terms of long drives to and from school. Our end-goal is that this initiative will not only directly affect the Bishops community but indirectly affect the global population.

Reflecting on how humans have messed up our world really makes me feel like there's no hope. I almost get frustrated about this, how could our parents and our grandparents not see this or dare think of the consequences that their actions, such as burning fossil fuels relentlessly, would cause. For the most part of school we've been show all about climate change and how the world is melting we were still left to focus on the next test or sport match, but now in the big ideas we are given the opportunity to do more. This makes me feel empowered as a student, now I am given the time and resources to put all my energy into something worthwhile. After learning about everything that is going in the world it is so nice to be able to help.

- Benji

Benji reflecting on a certain section of our introduction

Where did your project take place?

Our Project has been thought and created in the confines of Bishops Diocesan College and we spent most of our time in the Molteno Resource Center. The purpose of our project is to improve the sustainability of the Bishops community, and to do our part in the fight against climate change.

When we first got into our group, I really wanted to do some massive project that would somehow singlehandedly solve climate change. As we worked, this idea slowly morphed into the one we have today. We realized that if we didn't do something that could be implemented locally first, nothing would get done at all. This was the process of how we got to the idea of implementing something in the Bishops community.

- Erik

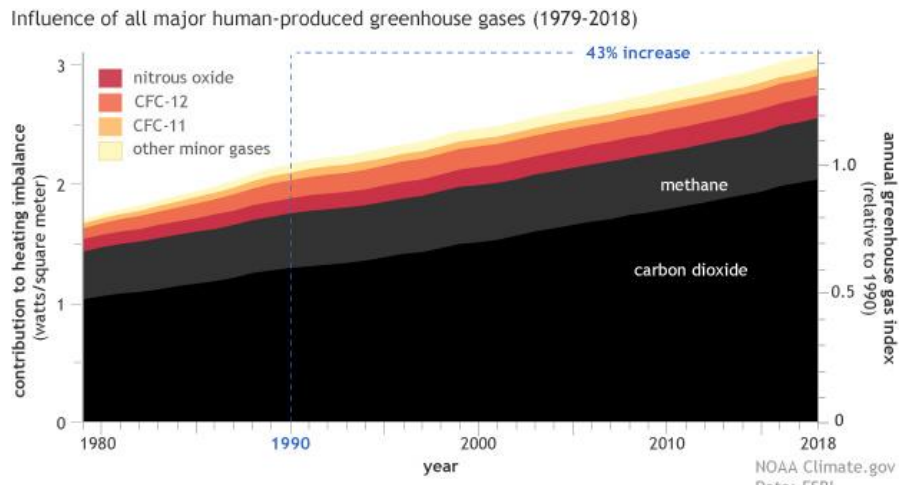
Erik reflecting on our group working together

What SDGs are related to your project?

SDG 13 - "Climate Action" is one that is very broad and hence allowed us to pick a project that can be as multi-faceted as possible. Every SDG is connected in a small or big way. Global warming affects most of the SDGs because when countries become uninhabitable there will be refugees which will cause overpopulation in many countries and this will lead to other SDGs such as poverty and hunger being affected. Sustainable Cities and Communities (Goal 11) is also an SDG that is related to our project because cities and communities need to be carbon-conscious in order to be sustainable. Good health and well-being (Goal 3) is also related because if you have to move out of your country due to drastic heat it will obviously affect your wellbeing. If you decide to stay in your "uninhabitable" country, you will suffer from diseases/sickness. If you have heart disease, respiratory disease or diabetes you will not be able to live in hot conditions. People with skin diseases and rashes will also be more vulnerable to heat inflicted health issues. (ccohs.ca, 2019)

Why did you want to address them?

We all firmly believe Climate Change is a big issue with not nearly big enough solutions. We all agreed after learning about Climate Change in class that we all felt strongly about it but to a certain extent we felt helpless. As we have



A graph of global warming over time

mentioned, climate change is an enormous issue and needs to be addressed if another mass extinction is to be avoided. Our background research was terrifying, and it really motivated us to try and make a change. The graph above shows global green-house gas emissions over the past 40 years. (climate.gov, 2019) This shows the sheer scale of our issue, and how hard it is to tackle. Despite this, we all felt strongly about all these issues which lead us to getting into our final groups. We went all cylinders firing and finally felt like we could do something.

Why do you care?

We think as the youth generation in today's world, there is so much that rests on *our* shoulders if life is to continue and thrive. The fact that *our* children, our grandchildren and great grandchildren are the ones who will be crippled by drastic climate change is heart-wrenching, and that is why we care so much. We feel that we have a responsibility to care and hence act on it, which is something that lead us to the SDG that focuses on climate change.

Some of our previous ideas – Reducing Meat Consumption In Bishops

While our team was ‘stuck in the cloud’ (sitting in the cloud when you are stuck brainstorming ideas, and don’t have a clear final outcome or goal visible) we found that many factors contributing to climate change come from agriculture and the production of food, mainly focusing on the production of meat after watching a video called: SAMSARA food sequence, showing the horrors of mainstream agriculture (Yassine, 2019) in this video we saw things as what they were.

This is still a massive issue with meat production still contributing way too much CO₂ and destroying our ecosystems. After all the research I am now taking an approach where meat especially beef is a luxury not a necessity. I have shared this view and all the facts with my family and since then have personally started cutting down my personal meat consumption and have gained a higher respect for vegans.

- Benji

Benji reflecting on Meat Consumption

This Video shocked us all and was quite an emotional driver. From here we decided to go into further research about food production and meat production. We saw that meat production, more specifically beef production, caused up to 70% of deforestation in the Amazon. (Team, 2019) The Amazon plays a crucial part in our planet's climate as it is a

huge carbon sink. In local areas around Brazil, studies have shown that temperatures in deforested areas have risen by up to 1,5°C. (Leeds, 2019) Cattle farming causes great land destruction as they require masses of land to pasture and grow cattle feed. As we all know, cows produce methane. A large amount of methane is also produced through the disposal and neglect of cattle manure. (Richard Waite, 2019) With some more research on how food affects our climate, we found a John Oliver video on food waste. (Oliver, 2019) In this video, he talks about how organic matter and food end up in landfills and as it is compressed, heated and then left there, it creates methane. Methane is 30 times more potent as a greenhouse gas than carbon dioxide. (University, 2019) When food is wasted, all the carbon that went into growing and transporting that food is wasted as well. (University, 2019) Therefore, decreasing food waste would decrease the organic matter in landfills and then decrease the methane being produced. It would also decrease the quantity of carbon produced in the transportation of food. To us, a great idea would be to reduce meat consumption and food waste within the school. We had an idea to provide the tuck shop with vegetarian yet still delicious options that they could serve to

the boys. At first, we worried about whether the boys would get enough protein, but it turns out that beef uses 20 times more land and emits 20 times more greenhouse gasses per gram compared to vegetarian protein substitutes like beans. (Richard Waite, 2019) Protein substitutes also contain large quantities of protein, so malnutrition was not an issue with this idea. It would greatly help the environment if these vegetables were sustainably grown on site and would also reduce the carbon footprint of the food. Along with this we had an idea of a food waste bin where all the boys could put their food that they didn't finish. It would then be managed and turned into compost to be used in the Bishops garden, where the vegetables are grown. This would create a sustainable on-site cycle, from garden to table and then the waste from the table back to the garden. After asking around in the school and talking to boys, we realized that not enough boys were willing to become vegetarian or volunteer in the garden so therefore this idea would struggle to take off. After this detour, we had to find another path to go down.

Reducing the amount of single-use plastic used:

While our team was stuck in the cloud, we also came up with the idea of possibly reducing the amount of single-use plastic used. We did research and found that in the production of refining fossil fuels to create plastic, masses of greenhouse gasses are released. (Barbara, 2019) Most plastics are made out of petroleum, which is a liquid fossil fuel that is formed over millions of years. (Chen, 2019) The petroleum then has to be distilled and go through many processes - all of which emit greenhouse gasses. (Barbara, 2019) Packaging plastic is the worst type as it is designed for single use, and then is sent to the landfills. This "throwaway plastic" makes up to 40% of plastic production. (Guardian, 2019) After finding all this information we decided we could aim to reduce the consumption of single-use plastics at the Tuck Shop. We all had been told earlier on in the course the effects plastic has on our ecosystem so we thought we could employ our power as a Big Ideas group and maybe start to use more paper packaging at the Tuck Shop. We also had the idea of putting in eco bricks (plastic bottles packed to the brim with plastic and used in the making of houses) in the boarding houses for the boys to put their own trash in and also reduce the amount of plastic that goes to landfills.

Eco-bricks are a relatively new initiative that has gone global. They are 2L coke or Fanta bottles that you put all of your loose trash or rubbish in (like sweet wrappers, or other plastic things that can fit through the lid). You then drop off your eco-brick at a place where they are collected, and they then are used as “bricks” for making houses. (Waal, 2017)



A picture of eco bricks in use

We thought that this would be a great idea and something that would really affect the Bishops community positively. We were really passionate about this however we thought this didn't really align with our SDG, Climate Action, as much as we wanted it to as it plays a more major role in SDG 14 and 15 (Life Below Water and Life on Land). This took us back to the drawing board to think of other ideas that could impact the Bishops community.

Creating a Carbon-Tracker app:

We were thinking about designing an app where you fill in what you have eaten and how long you spent in the car driving etc. You would only fill in things that you think could contribute to carbon emissions. Emitting less carbon could form into a kind of competition between friends or colleagues.

I used this app briefly, and it really had an impact on me. Seeing how much carbon you create from everyday life was staggering. It really made me rethink how I lived my life. I highly recommend that people download GoGreen.

I think that it is really important that we don't stay as far removed from our environmental impact as we currently are. We need to know how much our actions affect the environment.

- Erik

Erik reflecting on the carbon tracker app

This was a very good idea, however we decided not to do it because of a few main reasons.

1. There were too many variables that we would have to put into the coding to make it work efficiently.
2. Having to fill in things constantly would be very time-consuming.
3. We also found out that there was already an app that more or less does the same thing as our idea.

The app is called [GoGreen](#) and you can download it via the App store. It tracks how much electricity, natural gas and water you use each day. It also calculates how much carbon dioxide you have emitted into the air consequently. It teaches you how to reduce your carbon footprint and it will compare you to the average American.

Creating an App to help Carpooling in Bishops and Cape Town



uGoMyWay logo

One of the earliest thoughts which we thought of with regards to the traffic idea was to make an app. We looked at whether the idea had been thought of before, and we found that it had been tried a few times. One of them,

[YouGoMyWay](#)

I was really drawn to this idea. I think that having an app that people can use, similar to Uber, would be fantastic. In the end, we decided that it was too impractical to create and implement.

- Erik

Erik reflecting on our carbon tracker idea

(yougomyway, 2019) was built on a similar premise to our own idea. The app was made to combat congestion and climate change, which are the same reasons we came up with our project. The app YouGoMyWay didn't reach its full potential because it would only work efficiently if there were a lot of people using it. The app was pretty similar to uber. The only big difference is that you would pick up and drop people on your way to your destination. You can see why this wouldn't work when there weren't many people on the app.

There was also another app created called [Lifti](#) (lifti, 2019) Lifti is designed for people that have their own cars with people that need a lift somewhere near them where they are going. This didn't blow up either. The reason this app didn't get a lot of attention is that you couldn't be a driver and a passenger on the app - you would have to choose one or the other. There was also a problem with the app always crashing and some people couldn't even sign in. All of these apps not doing well was the reason why we decided to not try and design an app for our project. We saw that there were many issues and complications with the app idea, however we were really committed to the idea of lowering the number of cars on the road. That lead us to our final idea.



Lifti Logo

Our final idea – Reducing the Carbon Emissions Emitted by Bishops Students Through Implementing Carpooling at Bishops:

What we planned:

Despite all of our indecision regarding the specific areas of Climate Change that we wanted to tackle, we eventually came to an agreement which we thought would make a difference. We needed something relatively small, as we concluded that solving climate change instantly was not a possibility. We wanted to do something at Bishops, as that was the community best suited to our idea. We went through a few ideas, but we dismissed each of them in turn. We eventually identified an area in which we could really make a difference - It was transport.

I think the quote, "Fail to plan, plan to fail." Is something that really resonated with me when writing this section as a group.

Planning is something that is so important in such a busy and hectic world. Planning this project was no small feat. We had a lot of content to make (regarding our survey and emails) and we also had to prepare bodies of information and research to backup our claims in our proposal.

We used the art of planning to really smoothen out the process of implementing our project and in hindsight I am very glad we did.

- Michael

Michael reflecting on planning in our group

We saw this as an area in which we could make a real difference. By our calculation, around three hundred tons of carbon dioxide are produced by the cars (epa.gov, 2019) of Bishops parents driving to and from school each year. This gave us a clear path to take. We wished to reduce the carbon emissions of Bishops by reducing the number of cars on the road that carried one passenger (boy) and wanted to carpool boys into cars with two or even three boys per car. We conducted further research, and we were convinced of the necessity of our project. Once we had decided on our idea, we started to do as much background research as we could on it. With our project being based on transport we thought we should see how transport effects the world.

The background research we did really scared me. It is quite hard to face the truth about what we are doing to the planet. We all researched the effects of climate change at length, and they are rather nightmarish. It seems like a true apocalypse. Climate change is the issue that keeps us up at night, and for me the research really reinforced the need for initiatives such as Big Ideas. I think that if there is to be any hope for the future, things like this need to become more common.

- Erik

Erik reflecting on the background research

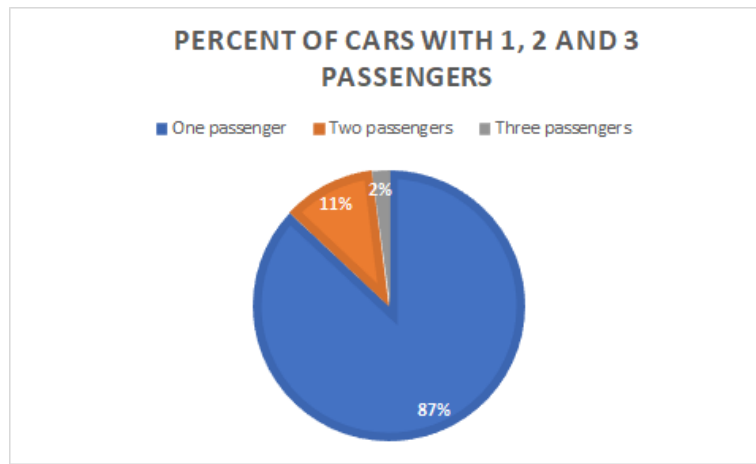
Transport contributes up to 30% of the US's total carbon emissions, (ucsusa.org, 2019) With USA producing the second most carbon dioxide in the world - sitting just below China. (ucsusa.org, 2019) In our research we found an extremely useful figure, this was the amount of carbon dioxide the average passenger-vehicle emits - 404 grams per mile. (epa.gov, 2019) With this we can now calculate just how much carbon dioxide Bishops was producing just with their lifts. We found pollution that gathers inside cars in traffic jams is far higher than in cars that are moving. Air pollution contributes to lung cancer, asthma, and other lung diseases, and it has been associated with heart disease and stroke. (Brazier, 2019) More on the issue of linking health to traffic it is said by the World Health Organization (WHO) that an estimated 100 000 deaths per year could be linked to air pollution - a problem cars are only making worse and worse each year. (Krzyzanowski M, 2019) More on the mental side of human health, we found that traffic increases road rage, stress and higher blood pressure. (Ganesh, 2019)

“With 88% of America's daily commuters using private vehicles and millions wanting to move at the same times of day, America's basic problem is that its road system does not have the capacity to handle peak-hour loads without forcing many people to wait in line for that limited road space.” (Downs, 2019) This quote may refer to America, however we felt that it could be related here as well. In peak traffic times, car cues stretch for kilometers. So, we concluded that this quote could be applied in our community, and along with making it more sustainable, we could help decrease traffic in our area by lowering the number of cars on the road.

We did a survey of cars entering the front gate of Bishops on a regular morning. We did this to see how many boys' passengers (boys) were in each car on average. This was to find out whether our project was necessary. If there were many boys who came to school together, our initiative would not be as effective. However, this was not the case. We found that 87% of the cars carried only one boy. A further eleven percent carried two boys, and a mere two cars of the ones we surveyed had three passengers. So, this shows our calculations were 0.9% off a massive survey done in the US. They took a huge sample size, and the results corroborated our findings completely. We did the survey in order to

Carpooling Bishops – Big Ideas 2019

reassure our prediction that a lot of the cars coming into Bishops in the morning did in fact only carry 1-2 passengers.



Pie chart showing results from our research task

Our plan consisted of several steps. The very first stage was getting a clear outline of what we wanted to achieve, and how we were going to go about it. We already had our goal, and we had gotten good feedback from Mr. Firth, our coach, so we decided to go ahead with it. The next step of implementing our idea was to email all the schools' parents to gauge their interest in participating in lift clubs with other Bishops parents who lived in their area. Our idea was to connect these people and let them set up lift clubs with five or six others in their area. We drifted back and forth between this idea or trying to contact an app developer to make something like Uber. Eventually we settled on the first option, as we thought that it would be most convenient for parents to be part of regular lift clubs and be able to contact each other easily via WhatsApp groups. Our final goal which we went with was getting the addresses and contact details of Bishops parents and emailing them to link them up with other members of the Bishops community who lived near them. We ran into a few snags early on, as we found that we had to get permission from Mr. Westwood to email the parents, and that we would send it through the school. We eventually managed to set up a meeting with Mr. Westwood, and we began to set our plan in motion.

What we did:

In our meeting with Mr. Westwood, we went over our plan with him, and found out that we could send one email through the school that both he and Mr. Firth approved. Any further correspondence would have to be between us and individual parents who emailed us with queries. After our meeting, we spent a few days formulating an appropriate email

Dear Bishops Parent Body,

We are a Big Ideas group focusing on the SDG (Sustainable Development Goal) that deals with Climate Action. With our project, we aim to create carpools or lift-clubs for a large portion of the Bishops community. With this we are hoping to greatly reduce the carbon footprint of Bishops.

Every single school day, just from lifts to and from school, the Bishops community produces in excess of one and a half tons of carbon dioxide. We conducted a research gathering survey and found that eighty seven percent of all cars entering Bishops in the mornings only carry one boy to school. Our Idea hopes to increase that number to two, three or even four boys per car.

We have created a survey that captures your relevant details, that we will then use to link you up with other Bishops parents who live near you. We will then provide you with all of the parents' details so you can set up a WhatsApp group and start your lift clubs.

With your participation, we are able to move Bishops closer to sustainability.

Please bear in mind that in order to connect you with these lift clubs, your address and contact details will be shared with a few Bishops parents who live in your area. We will be keeping you in the loop the whole way through our process, and there is a lot more details on the survey - should you continue.

The link to our survey: <https://forms.gle/63Qv6SvtXCEiegJu5>

For further details please contact erik.todd@Bishops.org.za

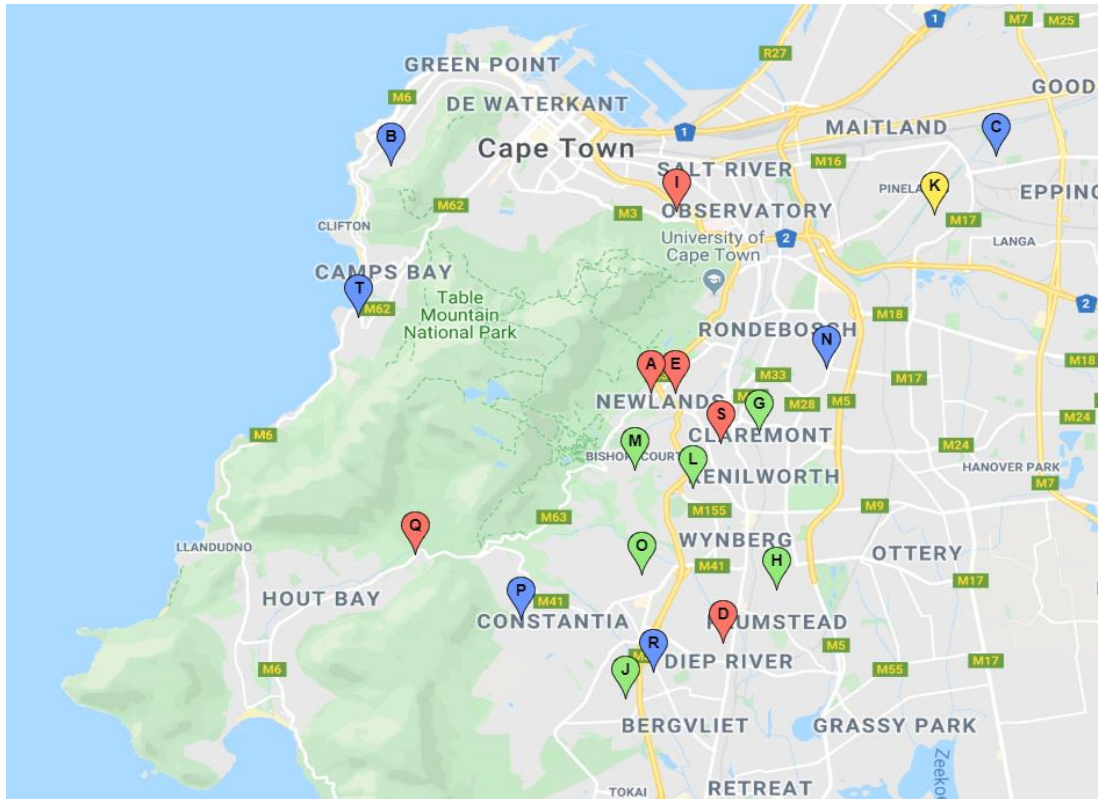
The Email that we sent to Mr. Westwood

which we could send. We were all incredibly nervous, as it was vital that the wording was good and that we didn't ramble, as the email would be sent to the entire parent body of Bishops. After much editing, and clearing the email with Mr. Firth, this was what we sent to Mr. Westwood for the go ahead with our project. We attached a survey to the email, this also needed a lot of work, as it was going to be sent to the entire parent body. This was quite stressful, and we redid the survey a number of times. We needed the parents email addresses so that we could contact them and also their contact details and some other information so that we could match parents together. The result of our work was this survey (see appendix at end of narrative), which we attached to our second email to Mr. Westwood. This was a draft for the email we wished to send to the parents. This was a momentous occasion for us, as it was where the project really began.

In the time leading up to the email being sent, we worked on our narrative, to keep it up to date. To reach the deadline was tough, but we made it. On Monday the 28th of October, the entire parent body of Bishops received our survey, and the results began to flood in. In the first thirty minutes alone, we got more than 50 responses. Over the course of the next 24 hours, we got up to 120 responses. This was very promising, as it showed that there was a real interest in our project.

We needed a few more results to start matching up the respondents, and we continued working on our narrative. Out of the respondents, around eighty-five said that they wanted to take part. Of those that didn't around half emailed us to explain that they were already in these lift clubs. This was heartwarming, and the support the parents showed really motivated us. Our project then moved into its final phase: Organizing the data we collected and getting the lift clubs up and running. We had a minor hiccup when we mixed up our data. We had mixed it up to the extent where we were pairing people from Worcester with people in Claremont. We all had to group together to fix this problem and reorganize all our data. Once this data was organized it was all plain sailing. We just had to set up emails giving parents the phone numbers and addresses of the other parents in their area.

Carpooling Bishops – Big Ideas 2019



A screenshot of a part of the map that we used to match up people

Eventually, we started sending out the emails, and it took a while, but it went well. This was the end of our project, and we achieved almost exactly what we envisioned. We feel that our project succeeded, and all of us are really happy with the result.

In the end, our project consisted of 25 lift clubs, and 51 people. By our calculations, we cut the annual carbon emissions of Bishops by 14 tons! This was way better than we could have ever hoped, and we

We also calculated that we would save parents over R4000 on petrol annually. We got to this figure as the average fuel consumption of 0.093L of petrol per kilometer. The current petrol price is R16 per liter. (Anon., n.d.)

are really happy with the result. When we started out the project, our main concerns were whether we would get permission to send a bulk email to the parent body, and also that the parents' response would be disinterested and hence negate the opportunity to make a successful viable project. Both of these fears ended up being completely unfounded and weren't a concern to us. We received a large and enthusiastic response and many parents who responded with a "No" to the initiative, emailed Erik with explanations as to why they were unable to.

Conclusion:

This Project has been an incredible journey of discovery as we learned so much about the many complexities of climate change. After looking at all the different contributors to climate change, we concluded that by only having the limited influence and resources the best way for us to make a change would be to look for the small things in our local area and communities, so on came the vision of carpooling Bishops. To our surprise we found out just how much CO₂ Bishops pupils were emitting just by going to and from school. Since this was an issue within our reach, we decided this would be the issue we address.

We all agreed that this initiative has aided our SDG - Climate Action. The decrease of cars on the road will decrease the carbon dioxide emissions therefore directly helping the fight against climate change. When we first examined the problem of climate change, we had realized very quickly just how many things contribute to it. We went down many rabbit holes such as meat and plastic, but we concluded that the most effective and realistic approach for us would be through cars and our school lifts.

There were many complexities in our project the main one being if the parents didn't agree to lift or not enough parents agree to lift then our whole project becomes near impossible as our project is mainly based on help from the parent and student body. Another big challenge for us was to be able to create a quick and easy survey that parents would happily do. This survey also had to come across in a professional manner as it was sent from the school body.

Looking back over the past few weeks and what we have done we would say this was a success. Even if we only managed to create one lift club, we still would've made an impact and helped in a small way. In the end, as mentioned previously, we ended up making 25 lift clubs. We calculated that in the next year, this will save over 14 tons of carbon dioxide from being released into the atmosphere. We feel like this project was a resounding success, and we achieved what we set out to do.

The main way in which our project can be improved would be to create an app. This would only be viable if it succeeds, and the app would have to be very carefully monitored for safety reasons. An app would require greater participation from the school's community, because it would need a lot of participants, as smaller groups of parents wouldn't be able to contact each other. The app would function in a manner similar to Uber, and it would allow boys to request to go home on the app and put in their home address. This would then appear on other people's apps, and they could then coordinate a lift.

Another way to improve our idea would be to expand the current one and try and include schools around Bishops in the sample group. This would enable us to match more people, and lower the carbon footprint of not only Bishops, but the other schools in the surrounding areas. All the benefits of our current system would be magnified, and it would allow for much greater participation, as the more people participate, the more likely it is that people will live in similar areas, and the fewer people will be excluded for lack of other participants. We want to see a similar project adopted in other schools if our project is successful.

To sustainably continue with our project, there would need to be a will to take part in the project from the parents. Our job is setting them up with each other. The actual lift clubs and making them work is in their hands. This means that they have to want to participate if the project is to work sustainably. Once the parents are in contact with one another there is nothing that we can do. The fact that the school is sending out the email on our behalf means that parents are likely to take our project more seriously and are more likely to participate. This will help in the sustainability of our project. The fact that our idea makes lifting easier for parents, as they will spend significantly less time on the road doing lifts will help incentivize them to keep up the lift clubs. This will also help to maintain the project after we have finished with it. The only issue that we will have is getting the incoming new boys into the project. The survey will need to be sent yearly to newcomers, and the groups changed slightly if the lift clubs are going to be maintained for any real length of time. We haven't come up with a solution to this problem yet, but we are confident that a favorable

outcome can be found. One possible solution could be for another Big Ideas group to continue the initiative next year.

Our project's relation to and effect on the SDGs

The project that we ended up doing specifically focused on reducing carbon emissions. We chose to target the community that we, as Bishops boys, live in and also to focus on reducing the quantity of carbon emissions from cars. The SDG that our project hence fell directly under was Goal 13, Climate Action. As we all know, climate change is something that is a result of exorbitant amounts of carbon dioxide (CO₂ gas) going into the atmosphere of our planet, and hence trapping the sun's rays in our atmosphere and causing drastic global warming. This is something that is wrecking climates and causing extreme natural disasters in tropical climates.

Our project aimed to address all these issues by tackling the root cause – carbon emissions.

To conclude with this narrative. This project has been thoroughly enjoyable for the entire group. We all worked together and collaborated incredibly well throughout the course of this project. We have formed special bonds with each other, and we will miss the whole Big Ideas program. This project has been a fantastic journey, and we are all proud of what we managed to achieve.

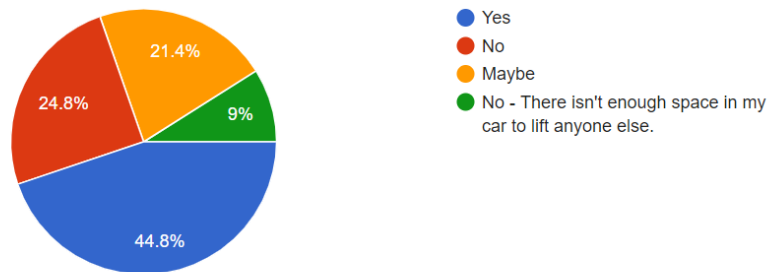
The survey we made that surveyed the parents for their addresses and contact details:

1. What is your email address?

2. Would you be interested in joining lift clubs with a few other Bishops parents in your area?

Would you be interested in joining lift clubs with a few other Bishops parents in your area?

145 responses

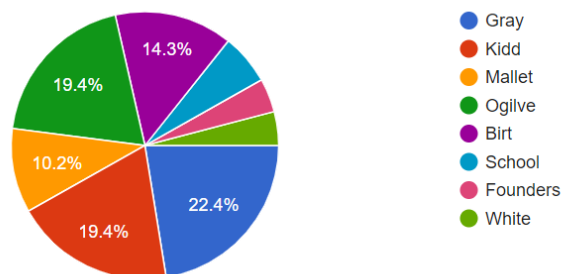


3. What is your son's name?

4. What house is your son in?

What house is your son in?

98 responses

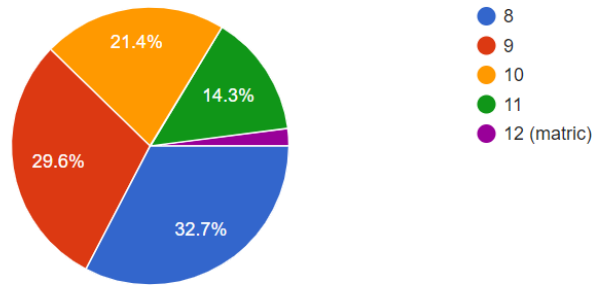


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5. What grade is your son in?

What grade is your son in?

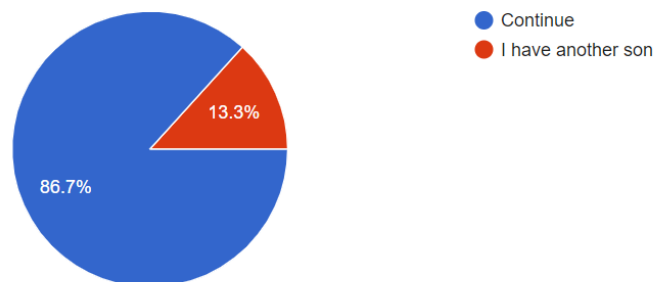
98 responses



6. Enter details for a second son If you have you have one or continue

Continue to fill in your details OR fill in the details of a second child

98 responses



7. What is your address?

8. What is your phone number?

- End of the survey.

Bibliography

Anon., n.d. *Wikipedia*. [Online]
Available at: https://en.wikipedia.org/wiki/Fuel_economy_in_automobiles
[Accessed 7 November 2019].

Barbara, U. o. C. -. S., 2019. *Plastic's carbon footprint*. [Online]
Available at: <https://www.wri.org/blog/2019/04/6-pressing-questions-about-beef-and-climate-change-answered>

Brazier, Y., 2019. *How sitting in traffic jams can harm your health*. [Online]
Available at: <https://www.medicalnewstoday.com/articles/312570.php>

Broom, D., 2019. *How the Middle East is suffering on the front lines of climate change*. [Online]
Available at: <https://www.weforum.org/agenda/2019/04/middle-east-front-lines-climate-change-mena/>

ccohs.ca, 2019. *Hot Environments - Health Effects and First Aid*. [Online]
Available at: https://www.ccohs.ca/oshanswers/phys_agents/heat_health.html

Chen, J., 2019. *Petroleum*. [Online]
Available at: <https://www.investopedia.com/terms/p/petroleum.asp>

climate.gov, 2019. *Climate Change: Annual greenhouse gas index*. [Online]
Available at: <https://www.climate.gov/news-features/understanding-climate/climate-change-annual-greenhouse-gas-index>
[Accessed 11 November 2019].

corporate-citizenship.com, 2015. *SDG number 13: Take urgent action to combat climate change*. [Online]
Available at: <https://corporate-citizenship.com/2015/09/02/sdg-number-13-take-urgent-action-to-combat-climate-change/>
[Accessed 11 November 2019].

Downs, A., 2019. *Traffic: Why It's Getting Worse, What Government Can Do*. [Online]
Available at: <https://www.brookings.edu/research/traffic-why-its-getting-worse-what-government-can-do/>

Ea, P., 2019. *Man vs Earth*. [Online]
Available at: <https://genius.com/Prince-ea-man-vs-earth-annotated>

epa.gov, 2019. *Greenhouse Gas Emissions from a Typical Passenger Vehicle*. [Online]
Available at: <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

Ganesh, L., 2019. *Can everyday traffic affect our mental health?*. [Online]
Available at: <https://www.whiteswanfoundation.org/article/can-everyday-traffic-affect-our-mental-health/>

Guardian, T., 2019. *Single-use plastics a serious climate change hazard, study warns.* [Online]

Available at: <https://www.theguardian.com/environment/2019/may/15/single-use-plastics-a-serious-climate-change-hazard-study-warns>

Krzyzanowski M, K.-D. B. S. J., 2019. *What are the effects on health of transport-related air pollution?* [Online]

Available at: <http://www.euro.who.int/en/data-and-evidence/evidence-informed-policy-making/publications/hen-summaries-of-network-members-reports/what-are-the-effects-on-health-of-transport-related-air-pollution>

Leeds, U. o., 2019. *Amazon deforestation has a significant impact on the local climate in Brazil.* [Online]

Available at: <https://www.sciencedaily.com/releases/2019/08/190830112813.htm>

lifti, 2019. *Home.* [Online]

Available at: <https://www.lifti.com/>

nasa.gov, 2019. *Climate Change: How Do We Know?* [Online]

Available at: <https://climate.nasa.gov/evidence/>

Nugent, C., 2019. *Science : Climate Change.* [Online]

Available at: <https://time.com/5621885/climate-change-population-growth/>

Oliver, J., 2019. *Food Waste: Last Week Tonight with John Oliver (HBO).* [Online]

Available at: <https://www.youtube.com/watch?v=i8xwLWb0ILY>

pbs.org, n.d. *PBS.* [Online].

PBS, 2019. *Frequently Asked Questions About Evolution.* [Online]

Available at: <https://www.pbs.org/wgbh/evolution/library/faq/cat06.html>

Richard Waite, T. S. a. J. R., 2019. *6 Pressing Questions About Beef and Climate Change, Answered.* [Online]

Available at: <https://www.wri.org/blog/2019/04/6-pressing-questions-about-beef-and-climate-change-answered>

Team, R., 2019. *The Beef Industry and Deforestation.* [Online]

Available at: <https://rainforestpartnership.org/the-beef-industry-and-deforestation/>

ucsusa.org, 2019. *Car Emissions and Global Warming.* [Online]

Available at: <https://www.ucsusa.org/resources/car-emissions-global-warming>

ucsusa.org, 2019. *Car Emissions and Global Warming.* [Online]

Available at: <https://www.ucsusa.org/resources/each-countrys-share-co2-emissions>

ucsusa.org, 2019. *Vehicles, Air Pollution, and Human Health.* [Online]

Available at: <https://www.ucsusa.org/resources/vehicles-air-pollution-human-health>

unilever.com, 2015. *UN Sustainable Development Goals*. [Online]
Available at: <https://www.unilever.com/sustainable-living/our-strategy/un-sustainable-development-goals/>

[Accessed 11 November 2019].

University, P., 2019. *A more potent greenhouse gas than carbon dioxide, methane emissions will leap as Earth warms*. [Online]
Available at: <https://www.sciencedaily.com/releases/2014/03/140327111724.htm>

Waal, D. L. d., 2017. *ECO-BRICKS: UPCYCLING NON-RECYCLABLES*. [Online]
Available at: <https://greengirlsinafrica.com/2017/04/02/eco-bricks-upcycling-non-recyclables/>

[Accessed 11 November 2019].

Wallace-Wells, D., 2019. *The Uninhabitable Earth*. [Online]
Available at: <http://nymag.com/intelligencer/2017/07/climate-change-earth-too-hot-for-humans.html>

WHO, 2019. *Health and Sustainable Development*. [Online]
Available at: <https://www.who.int/sustainable-development/transport/health-risks/climate-impacts/en/>

Yassine, B., 2019. *Benissa Yassine*. [Online]
Available at: <https://www.youtube.com/watch?v=k56NBsZXjr8>

yougomyway, 2019. *Home*. [Online]
Available at: <http://ugomyway.com>