King's High
WARWICK

Inspire Essay Competition 2018

Contents

Foreword

Following the success our inaugural Inspire Essay Competition, it is a great pleasure to share the Highly Commended and Prize-Winning essays from our latest round of entries. I hope you agree that the quality of work on display in these pages is outstanding. To read these carefully crafted pieces of work is to witness the creativity, intellectual curiosity, and independent thinking of the girls at King's High.

Working alongside fellow judges from the teaching staff at King's, it has been a privilege to read the large number of entries submitted. As well as the impressive topics explored in this booklet, we received excellent essays on topics as diverse as the scientific plausibility of flying cars, the importance of sharks to the ocean ecosystem, and the extent to which different generations can understand one another. Reading through one of the Year 7 essays printed below, I learnt about the relationship between plastic and the ivory trade, as well as the meaning of the word 'nurdles'. The well-worn idea that teachers learn as much from their students vice versa was certainly true on this occasion.

Another thought-provoking entry explored the difficulty of judging competitions (gymnastics, dressage, dance, and so on) where there is no definite winner. This topic felt particularly relevant as we struggled to place the essays into categories. All of our essayists should feel immensely proud of the work they researched and produced – we look forward to reading more.

Please continue to look out for the various opportunities for academic enrichment that we offer here at King's. Our Inspire Programme of trips, dinners, lectures, clubs and competitions is designed to make our School community as intellectually broad and vibrant as it can be. Regular trips to Oxford, Cambridge and beyond, as well as talks from world experts in their field, are a staple of our supra-curricular provision. I encourage all students at King's to get involved with any opportunities that might spark exciting ideas or pose new, challenging questions.

Dr P Seal
Head of Academic Enrichment and Research

Year 9
Prize Winning Entries

Was the US Civil Rights Movement Successful?

Maud Beidas

The US Civil Rights Movement arguably delivered one of the greatest advances in equality between races in the Western world to date. It brought many independent successes in a variety of areas, from legal equality to racially integrated transport. But to this day, despite the US Civil Rights Movement, there remains a large amount of racial abuse in the USA, in some cases worse than what was suffered 60 years ago. Racial issues from that time remain relevant today.

The way African Americans in the US were treated after the Second World War meant they led very different lives to the white people in that nation. The Jim Crow laws (laws instigated in the Deep South legally establishing segregation and promoting discrimination against black people) helped maintain this separation. An example of this was the Alabama law which said 'all passenger stations in this State operated by any motor transportation company shall have separate waiting rooms or space and separate ticket windows for the white and colored [sic] races'. If anyone spoke out against these laws, they were faced with the threat of violence or lynching (being beaten within an inch of their lives then hung from a tree).

A famous case of lynching took place in Mississippi when a 14 year old black boy named Emmett Till whistled at a white girl. He originally came from the more racially tolerant North and was visiting his uncle in the South. He was lynched by two local white men and the body was so mutilated to the point where it was barely recognisable. At the trial, the two men were found not guilty by an all-white jury; we know them to be guilty as they confessed in 2010. Already we can begin to see how unjust the legal system was. In the more racially integrated North of the USA there were far fewer legal barriers to racial equality, but racism and discrimination still kept the races apart. The alarming fact was that most African Americans earned half of what white people earned, and there was a higher rate of unemployment within the black community, so it was not just laws that divided the races, but also poverty.

The 15th Amendment of the US Constitution said that it was illegal to deny US citizens the right to vote. However, only 12% of African Americans were registered to vote, as they were made to pass a difficult literacy test to do so, and as many African Americans had very limited education, many did not even try to register, knowing they would fail. This was unfair as white people not only had access to better education, as there were fewer highly educated black people who ran the black schools, but were exempted from these tests. Black people were also made to pay a fee to register which due to the unemployment and income rates was impossible to pay. Another vote prevention tactic was to use violence which proved to be successful as shown by the figure of 12%. Here we can see the discrimination prevalent at that time. African Americans were tired of being treated like second class citizens, and wanted the respect they deserved to be stated in the US constitution. Thus the Civil Rights movement was born.

Prior to the Civil Rights movement, integration was unimaginable for black people. The movement brought law rulings in the USA to provide integration in schools, on transport and overall an end to the Jim Crow Laws. The first area of success was in education. Brown versus Board of Education Topeka in 1954 is an example of the first legal success for the Civil Rights movement. African Americans and whites were educated separately by law. In 1951 a black girl called

Linda Brown applied to attend a white elementary school but she was rejected on grounds of race. Linda's parents took the case to the local courts but lost due to the Plessy versus Ferguson ruling stating that public facilities remain "segregated but equal". The National Association for the Advancement of Coloured People (NAACP), a bi-racial organisation, took up the case and brought it to the Supreme Court. No decision was made in 1952 so there was a retrial arranged for 1954 with Chief Justice, Earl Warren, which changed the balance in the Supreme Court as Warren was not racist. He ruled that integration was now legal in schools. This was the first big step for the movement as it not only integrated schools but inspired people to fight for the cause, as it had shown that it could be successful. It prompted more protests and more challenges against segregation leading to the aim of overall racial equality. The more support and attention the movement received, the quicker it would make the President sympathise and intervene with the situation.

Another success was in the area of public transport. The Montgomery Bus Boycott 1955-56 led to desegregation on all public transport facilities, which hitherto had 'black' and 'white' sections. It began when a black woman, Rosa Parks, was arrested on December 1st 1955 as she refused to give up her seat to a white man. The Women's Political Council (WPC) ordered a boycott on all public transport in Alabama on the day of her trial. This lasted 381 days during which the Montgomery Improvement Association (MIA) were forming other means of transport whilst their opposition was doing everything from harassing the drivers to bombing Martin Luther King Jr.'s house. During the boycott, their demands increased as they were being ignored. They went from asking simply for respect from drivers to complete integration on buses, which was successful. They succeeded in what they were trying to achieve which was another advancement for the cause.

A huge part of the Civil Rights movement was the protests. Black communities realised that there was ignorance surrounding Brown Versus Board of Education ruling. Yes, it was successful in making integrated education possible, but black rights were being ignored so it needed to be enforced. By 1957 less than 12% of the 6300 school districts in the south was integrated. This can be shown through what happened at Little Rock in Arkansas 1957, when 25 African American students applied to integrate at a white school. On the first day only 9 attended due to abuse and harassment from white people. State Governor Faubus sent the National Guard to prevent the students from attending schools. The same ignorance was shown in the James Meredith Case. Meredith became the first African American to attend the segregated University of Mississippi after the intervention of the federal government. Another key event was when George Wallace stood in the doorway of Alabama University preventing two African American students from attending. After these protests raised enough awareness for the president to intervene, integration rates began to increase as state governors gave in to desegregation showing success in the movement. By 1968 42% of black students attended integrated schools in the South which was a huge increase on earlier levels.

The Freedom Rides of 1960 are another example of a successful protest following up the ignorance in law changes. The Congress of Racial Equality (CORE) aimed to provoke a violent reaction from white supremacists by taking interstate buses from Washington DC to the Deep South. A bus arrived

in Anniston, Alabama, where it was greeted with an angry mob, led by the Ku Klux Klan, a white supremacist group dressed in white hooded robes. The bus was set on fire as others held the door shut, preventing the passengers from escaping. Luckily an explosion forced the Klan to disperse, and the passengers were able to leave the bus. Integration and promoting desegregation on all transport, both state and interstate, were put into action effective immediately, which was another success for the movement.

All these successes contributed to the overall changes in the US legal system gradually ridding the US constitution of the racism embedded in the Jim Crow Laws. But all they did was change laws, not attitudes. Statistics from recent years show that the Civil Rights movement was not as successful as first thought. The percentage of black students in the south who attend schools that are at least 50% white has decreased back to the 23% that it was in 1969, after having peaked at 44% in 1989. For every $100 earned by the average white family, the average black family will earn $57.30. Black Americans today rely on more government aid than in 1968; almost 40% of African Americans qualify for welfare. In today's workforce, white applicants receive 36% more call backs from prospective employers than equally qualified African Americans. In 2018, black people living in Oklahoma, in the South, are six times more likely to be killed by police than in Georgia, in the North. Also, blacks are more likely to be killed by police than whites or any other minority ethnic group, showing the failure of the Civil Rights movement.

It can be argued that the Civil Rights movement was only successful in creating riots, violence and an increase in white supremacy. John F. Kennedy describes it as creating "disorder without any purpose". There is some truth to that as their aim was to create as much havoc and chaos as possible, but it did have a purpose, and sought to spread awareness of the black people's plight, and gain publicity. In 1967 there were 75 race riots across America causing in excess of $650 million of damage and resulting in over 16,000 arrests.

Since the end of the Civil Rights movement in 1968, there have been both successes and failures. America had its first Black President, Barack Obama, 2009 – 2017, but the increase in the misuse of guns has led to the deaths of hundreds of innocent African

Americans. More campaigns have been set up, such as #BlackLivesMatter, which was a reaction to indiscriminate shootings of innocent black people by both state and vigilante groups. Of course, all people's lives matter, but the BLM movement sought to highlight the injustice and inhumanity of violence and systematic racism towards black people, following the controversial shootings by white people, police and civilians, of supposedly innocent black people such as Trayvon Martin, Michael Brown and Eric Garner.

Looking over all the available evidence from both sides, you can clearly see successes and failures in the Civil Rights movement. Its aim was to create racial equality, which history shows was unsuccessful. It did not create a USA where both the black and white people could be seen as the same in everybody's eyes, but was successful in starting to create controversy to, it hoped, lead to a joint nation. There is still a long way to go until we can call America racially equal. Overall, the Civil Rights movement should not be seen as one independent success, nor should it be seen as an end to racial inequality, but as one step closer to the dream of unity becoming a reality. Decades after the movement's heyday, President Obama said "Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for. We are the change that we seek." The change, however, still needs to be fully actioned. The very fact that there is a need for a BLM movement proves that the message of the Civil Rights movement has not been wholly embraced.

I do not believe that total equality can ever be reached, but neither should we be alive in a time where we are exposed to racial abuse. It is dehumanising, unacceptable and morally wrong. We are all born equal; the only thing different is the colour of our skin, and it is shocking how one minor difference creates huge amounts of controversy. In the USA, black people are known as African Americans. The indigenous population of North America in the USA is known as Native Americans. Perhaps true racial equality will only be reached when white people in the USA are known as European Americans.

Should prisoners be allowed to leave prison to train for work before their sentences are over?

Bella Tomlinson

The benefits of allowing serving prisoners the opportunity to gain useful work experience and vocational qualifications before the end of their sentences have been well documented. New proposals, however, go further and Ministers now wish to explore the opportunities for more prisoners to undertake work placements within the community. It is proposed that inmates should be allowed to leave prison during the day to take up employment towards the end of their sentences in a bid to boost their chances of finding work upon release. This scheme would be an expansion of the release on temporary licence scheme (ROTL,), which already exists and would form part of the incentives for good behaviour policies, which are in place across most prisons in the UK.

The Criminal Justice System uses the Criminal Justice Act of 2003 to underlie all sentencing decisions. When passing sentence, judges and magistrates must ensure that they have considered the following factors: the punishment of offenders, the reduction of crime including thorough deterrence, the reform and rehabilitation of offenders, protecting the public and reparation by offenders to people affected by their offences. Getting the balance right between these different factors is incredibly difficult and there are many different opinions and conflicting research supporting different sentencing options.

Supporters of the opportunity for prisoners to work point to the requirement of sentences to rehabilitate and reform prisoners. A spokeswoman for the Ministry of Justice said, "We prepare offenders for work inside prison so they can get a job after release – this reduces the chances that they will reoffend in the future". Whilst education plays a crucial role in helping to get offenders back on track and equipped for life outside of prison, The Howard League for Penal

Reform says that getting people in prison working is an exceptionally important part of turning them away from crime. This belief is backed up by considerable research (Ministry of Justice 2010a) which demonstrates that having a paid job is a major factor in the effective resettlement of offenders in release from prison and in turn in reducing reoffending. A longitudinal study by the Ministry of Justice in 2014 concluded that prisoners who had worked while in prison were more likely to be in employment shortly after release. It also found that prisoners who had attended vocational training in prison were more likely to securing employment shortly after release.

Employment while in prison does have other benefits too. It can also help prisoners to build their self-esteem and improve their mental health, which in turn reduces the call on the NHS and other support organisations.

However, there are those who fundamentally disagree with the principle of prisoners not serving their sentence fully. There is an opinion that policies such as working in the community whilst still a serving prisoner, could have a detrimental impact on efforts to reduce crime. The punitive aspect of a sentence must serve as a deterrent to criminal activity in the future. In the case of convicted criminals whose crimes are deemed so serious that only a custodial sentence is appropriate, any policy, which appears to lessen the punitive element, could be seen as undermining the whole criminal justice process. (The Ministry of Justice, however, believes that the denial of a person's liberty through imprisonment is a punishment in and of itself.)

Allowing prisoners to leave the confines of prison to undertake work experience, is seen by some as being 'soft on crime.' Anything which reduces this sentence can be seen as 'letting them off' and goes some way

to reinforcing the 'holiday camp' image that some critics have given the UKs prison system. Critics point to the increase in crime figures and recent prison riots as evidence of the fact that the punishment and deterrent aspect of sentencing is not working.

Victims of crimes and their families may also see this as a denial of justice. The opportunities afforded to convicted criminals may appear greater than those afforded to the victims or other law-abiding citizens. Focusing on the criminals and the punishment that they will receive suggests that the offender is more important than the victim due to the lack of attention the victim has received.

The Trades Union Congress also has concerns about the government's efforts to expand the amount of work undertaken in prisons, particularly during times of high unemployment. It wants assurances that by allowing prisoners to work, they are not taking employment opportunities away from law-abiding citizens who are themselves looking for employment opportunities. There is also a risk of wage deflation within communities if work can be done by prisoners at a lower cost. As a guiding principle, the Trades Union Congress believes that the government has to be able to prove that any work in prisons will not have a harmful impact on employment in the local community.

There are also concerns about public safety and security. It is vital that the prisoners' risk to the public is properly assessed before they are allowed back out into the community and that job placements are appropriate given their offending history. Consideration also needs to be given towards assessing the risk of giving prisoners access to people's personal information. For example access to personal financial records and other private data.

To conclude, I believe that allowing prisoners to leave prison to work should be authorised because it has been proven that a job helps benefit the prisoner in a number of ways. For example, it aids their self-esteem, mental health, reformation and rehabilitation process as well as preventing them from reoffending in the future. It will definitely help ease them back into society faster. However, the scheme will only work if it is supported by policies which address other issues such as mental health support and access to housing post-release (prisoners' living arrangements after custody were associated with employment on release, with those who reported being homeless shortly after release less likely to be in employment compared with those who were in more stable accommodation), amongst others.

Erwin James, writing for The Guardian, sums the matter up succinctly. On prisoner reform, he says:

If they need education, let them have it. If they need work skills, given them training... These simple measures are all it would take to bring a better public safety and cost-efficient outcome by ensuring that more people come out of prison able, willing and motivated to be good neighbours.

Electronic waste: A threat to the human race?

Gigi Thomas

Electronics have been used to improve the lives of many of us. From freeing us from some laborious domestic labour such as washing dishes, to enhancing our leisure time with gaming opportunities and allowing us easy access to a vast catalogue of music, and even enabling us to work from an office, the home, or the local coffee shop, technology has changed the shape of our lives. However, as the late Steve Jobs, the head of the most successful electronics company in the world, stated: 'There are downsides to everything; there are unintended consequences to everything.' One unintended consequence of electronic devices and appliances is all of the waste. This is known as electronic waste or e-waste. In this essay I will be discussing the three major areas that are affected by electronic waste: the air, soil and water. I will also be discussing how the amount of electronic waste produced can be decreased, using these four steps: re-evaluate, reduce, reuse and recycle.

Many pollutants, including persistent organic pollutants that are released into the air we breathe, come from electronic waste. A documentary entitled 'Welcome To Lagos' portrayed the poor conditions in which e-waste is recycled and the negative effects that it can have on the environment. Many landfill scavengers forage through landfills looking for redundant electronics, producing income from the improper recycling of these devices. Discarded electronic devices and appliances often contain dangerous materials and heavy metals such as lead, cadmium, chromium, brominated flame retardants and polychlorinated biphenyls (PCBs). Toxic fumes can be released while improperly recycling these products. These contaminate our bodies and can cause damage to our central nervous system, which is highlighted in 'The Lancet, Health consequences of exposure to e-waste' in October 2013.

Materials of a high value are often extracted from highly integrated materials and electronic waste. This process uses dangerous acids, releasing harmful toxins into the nearby region and environment. This usually occurs in places where the recycling process is improperly regulated. E-waste is often shredded in places of the same poorly manned system. This releases dust or large particulates into the environment, causing chronic damage to the respiratory system of those living in the region. These toxins can cause impairment of the reproductive and the immune endocrine systems and can also be a contributing factor towards heart disease. Inhalation of the fumes can also often cause skin disorders and lung disease.

Water can easily be heavily contaminated by the toxic chemicals and heavy metals found in e-waste. These toxins leach into the water, impacting surface waters whilst harming wildlife and plant life. However, heavy metals such as lead and arsenic are far more dangerous, and have a bigger impact on the widespread environment because of the way that they are distributed to a very wide geographical area. These can accumulate into ground waters as well as surface waters, killing crops and plant life that may grow in that region. Studies show that in Mandoli, India, the water contains approximately 710 times the amount of mercury recommended by the Indian government and almost 11 times the recommended exposure limit. This amount of heavy metal is extremely dangerous to all people who use the water, especially younger children whose immune systems have not fully developed. In Guiyang, China, 169 children were tested for unusual amounts of lead in their bodies and blood streams; 82% of them had an abnormal level of lead in their bodies which can have catastrophic consequences for their development and health. The lead is likely to have come from heavy metal waste from recycling facilities which

has leached unchecked in to local water supplies. Many recycling plants use the local water sources for processing and regulation of the waste facilities is poor in newly emerging economies like China.

Soil can be contaminated directly through contact with electronic waste. When electronic waste is improperly or illegally dumped in normal landfills that are not designed to contain e-waste, heavy metals and flame retardants can leach directly into the soil. These can contaminate crops that are currently growing as well as contaminating the land for future farming. This type of soil contamination is usually persistent, with the pollutants and chemicals remaining in the ground for extended periods of time. Soil can also be contaminated through irrigation from polluted water.

There is unequivocal proof that toxins from e-waste cause harm to life (see 'The Lancet Dec 2013: Health consequence of exposure to e-waste, a systematic review). When flame retardant toxins (PBDE's) accumulate into the body, the nervous and reproductive systems are compromised. Heavy metals and toxins such as cadmium, arsenic and lead are toxic and have been shown to cause neurological damage at any age and halt neurological development in infants.

Greencitizen website summarises the size of the issue: 'Electronic waste currently constitutes 2 to 5 percent of the US municipal solid waste stream. Carnegie Mellon University has predicted that there are already 70 million computers in our landfills. The average computer computer screen has five to eight pounds or more of lead representing 40 percent of all the lead in US landfills'.

Re-evaluate, reduce, reuse and recycle. The four steps of electronic waste contamination prevention. As contamination from electronic waste is increasingly becoming a worldwide dilemma, something must be done to stop this issue dominating our globe. The first step is to re-evaluate the decision while buying a new electronic device. 'What are its long term uses?', 'Will it greatly benefit myself and the community?' and 'What can be done to preserve its lifespan?' are just a few of the simple questions that should come to mind when buying an electronic device. According to a study reported by the Consumer Electronics Association (CEA), the average family owns 24 discrete consumer electronic products. This seems an absurd number

of devices. However, adding up all of the computers, phones, tablets and others electronic devices, it will most likely be found that your home possesses a similar amount. While considering the purchase, take a look at the label. Is it eco-friendly? Devices that do not put the environment in danger are labelled 'Energy Star' or are certified by the Electronic Product Environmental Assessment Tool (EPEAT). Reducing the number of electronic devices that are being bought will greatly benefit the community and the environment.

Reusing electronic devices plays a major part in the prevention of electronic waste contamination. Passing old phones and laptops to other people is an easy and efficient way to help decrease the amount of electronic waste developing in our environment. However, the main way to help prevent contamination through electronic waste is to recycle. Recycling just one million laptops can save enough energy to run 3,657 US homes for a year. The difference that can be made by recycling electronic devices is phenomenal, however only 15-20% of electronic waste is being recycled. This has to change.

Electronics are an integral part of every life and the range of products are being developed exponentially. Whilst some unrecyclable electronic waste is inevitable in the short term at least, the impact of the waste can be reduced significantly, using the re-evaluate, reduce, reuse and recycle steps. Mankind can solve any problem it puts it mind to.

Year 8
Prize Winning Entries

Hashtags: #powerful or #pointless?
Hannah Mason

Hashtags are used on a daily basis on all the different social media platforms to gain 'likes' and 'followers' all over the world. But can a hashtag really make a difference in not only 'social popularity' but also in more important ways: can one hashtag change society, raise awareness or win a political vote? To what extent do hashtags shape our world, and are they #powerful or #pointless?

Hashtags ('#'), were invented as a way to open you up to a community of people who share a common interest, value, opinion or social media content. Hashtags help others who are interested in a certain topic or event quickly to find content on that same topic on social media site: Twitter, Instagram, Facebook and more.

Hashtags were first introduced into Twitter by Chris Messina, a social technology expert with the intention of grouping similar things together.

Figure 1: The first tweet containing a hashtag #barcamp. Tweeted by Chris Messina on 23 August 2007.

Many people dismissed this idea and claimed it would never happen, including the founder of Twitter, Evan Williams. Nevertheless, the hashtag grew, first becoming extremely popular and proving the majority wrong during the San Diego Fire of 2007, when *#sandiegofire* was used to spread the word.

Today, everyone on social media uses hashtags in everyday life – many say excessively. Be it *#holiday*, or *#cake*, it's hard to find something that doesn't have a hashtag. Hashtags are also used extensively in politics, business and awareness campaigns. They can connect people based on a much more serious political or social level. Take the recent emergence of the *#timesup* and *#metoo* campaigns to stand up to sexual harassment. Especially for something that can feel as isolating and terrifying as sexual assault, hashtags can bring about a sense of community without forcing victims to come forward in person.

Hashtags can have huge impacts. In 2014, an incredible $115 million was raised for the ALSA, a charity to help those with ALS, a fatal disease. Icy water flooded the Internet through endless videos with *#ALSIceBucketChallenge*, where people threw buckets of freezing icy water on themselves before nominating others to do the same in aid of the charity.

Many people around the world got involved including myself, my friends and even celebrities such as Justin Bieber. This 'break-the-internet phenomenon' spread like wildfire. Each post was captioned *#ALSIceBucketChallenge* and therefore they were all grouped together in one place. Everyone that posted with this hashtag, 'recommended' it to other users. The multiplier effect meant that an ever-increasing number of people got involved. The money raised has helped to improve and even save the lives of many people affected by ALS, and this is all down to one trending hashtag.

Another notable hashtag is *#westandtogether*, a hashtag and campaign that started after the Manchester Arena suicide bombing on 22nd May 2017 with the aim of regaining Manchester's strength, creating a sense of community and support for one another. On all social media platforms, within days this

hashtag was used millions of times, and was not only being talked about, but also making a difference: giving confidence to one another in difficult times.

Figure 2: #westandtogether with the symbolic Manchester bee

To evidence the power of the hashtag, I conducted an experiment to find out how easy it is to launch a campaign and to what extent the use of hashtags would help raise awareness of that campaign in the form of number of likes and follows.

I created three anonymous Instagram accounts:
@fitness.4.girlz
@girls.get.active
@girls.fitness4us.

Each account had the aim of inspiring and encouraging girls to get active and fit. I chose this because not only is it something I strongly believe in, but it also links with the popular hashtag and campaign *#thisgirlcan*.

Each account had the same 'bio', and posted the same pictures (two pictures a day for seven days) with the same captions, only with different numbers of hashtags:
@fitnesss.4.girls posted with 8 hashtags – account 1
@girls.get.active posted with 4 hashtags – account 2
@girls.fitness4us posted with 0 hashtags –account 3

I didn't share details of these accounts with anyone I already knew as I wanted to attract attention with the campaign itself and not with people looking to support me personally. I used hashtags that were relevant to each post and my campaign, for example here is my first post on account 1:

Figure 3: first post on @fitness.4.girlz demonstrating the use of hashtags
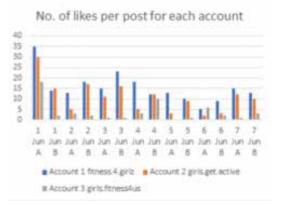
The results were conclusive:

Figure 4: the account using 8 hashtags got the most likes, with the exception of the 6th June A post
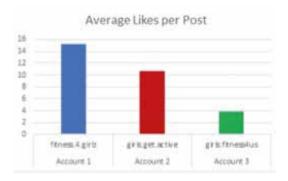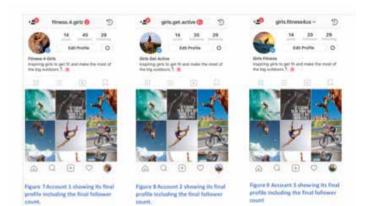
Figure 5: account 1 acquired many more likes than account 2, and a great number more than account 3

Figure 6: account 1 received many more than account 3, in fact over 25 more followed

On average the account using 8 hashtags received 42% more likes per post and 32% more followers than the account using 4 hashtags. That in turn got a total of 183% more likes and 79% more followers than the account using zero hashtags. Starting from a base of zero followers, the power of the hashtag enabled me to achieve 45 followers and a total of 213 likes for fitness.4.girlz. This provides evidence that hashtags can draw attention to new campaigns.

Figure 7 Account 1 showing its final profile including the final follower count.

Figure 8 Account 2 showing its final profile including the final follower count.

Figure 9 Account 3 showing its final profile including the final follower count

Hashtags can be powerful in other ways besides raising awareness. Social media posts provide vast records of people's thoughts, feelings and actions at a rate that before would have been unimaginable. It is because people's behaviour on social media is a reflection of events that are actually happening in the real world, that we can use it to make forecasts and predictions about the future.

A study by a team from the Pacific Northwest National Laboratory and the University of Washington found that Twitter analysis can accurately predict civil unrest. People use hashtags to discuss issues online, before their anger becomes so strong that it overflows into the real world. The most famous example of this was during the Arab Spring, when anti-government uprisings broke out across the Middle East in 2011. When the research teams looked closely at the use of hashtags in the days before people took to the streets, there were clear signs of the impending protests and unrest.

Hashtags can even be used to predict disease outbreaks. Analysing hashtags which are made by people complaining about the norovirus or other infectious diseases makes it possible to identify where the disease is most prevalent and where there is a strong chance that a lot more people are about to catch it.

The more accurate data scientists become at producing algorithms to use social media to predict future events, the more time we will have to put measures in place to stop riots or crime from happening. We are able to provide medication to geographical locations that need it urgently. This will have a positive impact on the world we live in.

So far, I've have provided overwhelming evidence that the use of hashtags is #powerful but if not carried out correctly, even a powerful campaign using hashtags could be judged as #pointless.

In 2017, President Obama warned against the dangers that social media can pose when used in a divisive way. He said technology must be used to allow a "diversity of views" rather than the "Balkanisation of society". "All of us in leadership," he said,

have to find ways in which we can recreate a common space on the internet. One of the dangers of the internet is that people can have entirely different

realities. They can be just cocooned in information that reinforces their current biases.

In order to be powerful, online communities need to venture out into the real world and meet in person if they want to bring about change. On the internet everything is very simplified, but when people meet face to face they find out that things are actually very complicated.

Whilst Hashtags are great at raising awareness, to make something happen, people need to get up and actually do something. Whilst social media and hashtags are a fantastic way of bringing communities together, people shouldn't make the mistake of believing that simply commenting on an issue or liking it will bring about change. They need to take physical action to make the campaign worthwhile.

Having conducted this research and analysis about hashtags, I can conclude that hashtags really are powerful and can even change the world, step by step. They bring together a sense of community after awful events as well as bringing together those with the same political ideas, influencing a vote, which could lead to changing the way our country is run. Hashtags can race across the world raising awareness for charities and much more. To make any hashtag campaign worthwhile however, people need to meet in person and take action. Analysis of social media, including Facebook, Twitter, and Instagram allows experts to predict civil unrest, crime and disease outbreaks all of which can be acted upon with enough warning.
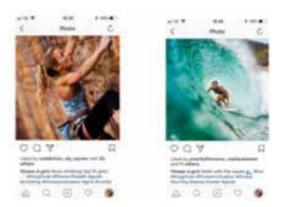
To take a next step, I would like to conduct another of my own experiments, this time on Twitter to see if the results are the same or if it is detrimental to overuse hashtags. I would be interested to find out more about other aspects of social media and if there are other uses of it which are just as powerful as hashtags.

Appendix

Instagram Experiment – online security note:

As I needed to have public Instagram accounts for my experiment to work, I chose to carry out my experiment in a secure, controlled environment. For this reason I used my mum's phone for the experiment and she checked for any 'inappropriate' comments. The accounts were deleted once I had analysed the results.

Instagram Experiment – Example of first and last posts on account 1 @fitness.4.girlz:

Instagram Experiment – Table of Results:

	Account 1 fitness.4.girlz Number of Likes	Account 2 girls.get.active Number of Likes	Account 3 girls.fitness4us Number of Likes
1 Jun A	35	30	18
1 Jun B	14	15	2
2 Jun A	13	5	3
2 Jun B	18	17	2
3 Jun A	15	11	1
3 Jun B	23	16	1
4 Jun A	18	5	3
4 Jun B	12	12	10
5 Jun A	13	3	0
5 Jun B	10	9	1
6 Jun A	5	2	6
6 Jun B	9	3	2
7 Jun A	15	12	1
7 Jun B	13	10	3
Total	213	150	53
Average	15	11	4
Followers	45	34	19

Why are humans considered 'the most intelligent species' and are we really?

Jessie Strens

We all know that humans have made the largest impact on the world; we have taken control over it, used its natural resources and wiped out many other species, so surely it is correct to assume that we must be the most intelligent species on earth? Well, recent scientific discoveries have proved that some animals and artificial intelligence are actually much more mentally advanced than we think.

One of the main reasons the human race is so evolved is our ability to use and adapt tools, for example the early use of fire and wheels, and later electricity and more recently robotics. However, the program 'Blue planet 2' talked about the orange spotted tusk fish, which uses rocks to break open large clams. If fish are using tools, then it is not such a rare ability. Additionally, a recent nature documentary, 'Spy in the wild', used cameras disguised as realistic-looking animals to get a glimpse into the lives of animals, and the results were fascinating. A group of orangutans had somehow come across some human equipment, including soap and a saw, and they were spotted wetting the soap to make a lather and washing themselves with it. What is even more incredible is that one orangutan took the saw and started cutting wood with the same sawing motion that we would use. These orangutans had never seen humans use these tools before, but had worked it out for themselves.

Some other strange animal behaviour was captured on these cameras. When one of the cameras disguised as a baby langur monkey fell off a branch, the other monkeys started to behave as if they were grieving. They were all crowding round what they thought was the dead monkey, holding on to one another and coming up one by one and bowing their heads. We tend to think that grief is a very human emotion, and the fact that monkeys express it too suggests they are not as different to us as we might think.

Similarly, religion is considered something only humans do, but this was proved wrong when a camera captured some footage of some chimpanzees and a tree. The apes appeared to be striking the tree quickly with a stone, and then running off screeching as though scared. Several different chimpanzees were seen doing this, and later similar behaviour was seen in other populations of chimps. Scientists examined the tree and found nothing biologically wrong with it and no obvious reason for this behaviour. Could this superstitious behaviour be early signs of religion?

In 1970, a man called Herb Terrace, a psychology professor, decided to test whether chimpanzees really were like humans, so created project Nim. Project Nim would involve raising the chimp as a new-born baby and teaching it sign language to communicate. Stephanie Lafarge, mother of four, agreed to adopt the 10-day old Nim, and raised him like her own children. He learned the signs for basic things, like 'Nim', 'eat' and 'sorry'. However, he grew more violent, breaking almost everything, so he changed families and worked with professional scientists. After three years, he had learnt over 128 signs, and could even say a few words. Sadly, he continued to bite people and break things, and, being 5-6 times stronger than a man, it grew dangerous for people to be around him. They had to end the project. Another project similar to this took place in 1931. A family raised a chimp, called Gua, and at the same time a baby boy, called Donald. They did lots of tests, including reaction times, self-control, recognising which apple was fake and which one was real, etc. In the first 5 months, both of their results were similar, and Gua beat Donald in some of the tasks, but after that Gua started falling behind. He became more violent, and constantly needed attention. Also, Donald started mimicking his chimpanzee noises, and the parents were worried that their son wouldn't learn to speak properly, so they too aborted the mission.

Although chimpanzees aren't as evolved as us yet, artificial intelligence is becoming even more intelligent each day. Many robots in factories have taken over human jobs, and a computer can work out sums and answers to questions far more quickly than we can. A fairly recent innovation, neural networks, allow computers to 'think' for themselves, and work out problems without specific code from the programmer. This works in much the same way as human brains do, constructed in many layers and connecting neurons to form links and recognise specific things. For example, let's say voice-activated software such as Alexa, has been programmed to recognise the phrase 'what is the weather today?' Well, on a normal computer programme, she wouldn't recognise this question unless what you say is identical in pitch and frequency to what she has been programmed to hear. Neural network software allows her to recognise words that are most similar to words that she has been programmed to understand. She would then form connections, so that the next time you ask that question, the probability it is that exact question being asked will be much higher, and she will become more accustomed to your voice. Other examples include a computer learning to win chess, by playing against itself again and again using random moves. It then learns which moves increase the odds of winning, and gradually gets better at the game.

If we continue to evolve artificial intelligence like this, in the future we might be able to create a robot with something very similar to a human brain. There has been a lot of concern that computers are becoming too advanced and could become better than humans. However, they are very helpful in medicine, science, industry and in fact most jobs, and we already rely on them for our everyday lives. It was humans that created artificial intelligence, so it can never really be cleverer than us unless we deliberately make it that way or help it to become so.

There is also a possibility of life on other planets, which could have existed far longer than us, but we are likely to be extinct before we discover it. We cannot exclude the possibility that there are more intelligent life forms elsewhere in the universe.

We consider ourselves to be the most intelligent species, and yet we have bleached the world of its natural resources and polluted it, gone to war with each other and developed horrible weapons like mustard gas and Novichok to torture each other. True, animals fight over food, but in the world wars, many people ended up starving and we lost more than we gained. Humans have made a bigger impact on the world in 200,000 years than dinosaurs did in 66 million, and it is not necessarily good. My opinion is that we are the most mentally evolved species, but do not always make the best choices, and maybe we won't be top in the future.

Is it ever right to test on animals if someone's life depends on it?

Maya Joshi

Did you know that more people are surviving cancer than ever before, and that the survival rate has doubled in the last 40 years? However, were you aware that this progress would not have been possible without the use of animal research? My essay is going to discuss whether it is ever right to test on animals, if someone's life depends upon it.

There are varied views on the uses of animals in research but lots of people are still against animal testing, despite the medical progress. One of the reasons for this is that 90% of substances tested on animals fail clinical trials. This is because animals aren't humans, and their bodies and minds work in different ways. But these failed experiments could possibly cost an animal its life or leave it with a severe injury. Moreover, some people have the opinion that there are other ways to research, without harming an innocent animal. A commonly used way is through technology and computer models.

Another argument against animal tests is that they aren't always reliable. An example of this is when researchers were trying to find the link between smoking and cancer. Although this link was first observed in people, animals were forced to inhale smoke, but they didn't develop cancer. This meant that crucial health warnings were delayed by many years.

Another reason why people are against animal testing is because 95% of animals used in the labs are not protected by the Animal Welfare Act, making them more subject to cruelty. This is due to the act not covering birds, mice and rats. Besides, many animals are used for research purposes their whole lives and are never let into the wild. Others are killed once they are used. Lots of people believe this is cruel and inhumane. Plus, what have these animals done to deserve this kind of treatment?

As well as these justifications, many people believe it isn't morally right. This is because some have the opinion that animals are our equal, and we should treat them how we would like to be treated. Others think that we have an obligation to protect these defenceless animals who can't protect themselves and using them for experiments is unfair because unlike humans they can't protest. We are therefore taking advantage of a weaker being. Finally, some people think it is against their religion and they should be caring and merciful towards animals.

On the other hand, lots of people believe animal testing is right. One of the explanations for this is because animal testing has saved millions of lives. An example of this is how the childhood cancer rate has changed from just a quarter of children surviving this horrific disease in the late 1960's, to more than eight in ten surviving today. Cancer research UK says that 'This is a direct result of treatments developed through animal studies.'

Some people believe animal testing is acceptable is because scientists say that if there was to be a ban on animal testing it would mean an end to testing new drugs or using human beings in all safety tests. With no new drugs, no more lives can be saved and lots would be lost, but using human beings in all safety tests would be putting millions of human lives at danger.

Another justification for animal testing being acceptable is because animal testing has helped save animals too. An example is how the vaccine against feline leukaemia in animals was tested on animals, but also saved many animal lives as well.

Furthermore, some people believe that as long as scientists follow the 3R's – replace, reduce and refine – it is acceptable. This means that the researcher will do their best to find an alternative method (often using technology), that they will reduce the number of animals used in research to a minimum and refine the amount of suffering. However, many people argue that this doesn't always happen in the labs, and that in some places animals live in very harsh conditions, being treated poorly and incorrectly.

In my opinion, animal testing is only acceptable if the research complies with the 3R's and the animal's welfare is fully considered. In some cases, however, I believe that the welfare of the animal isn't being taken into account and an example of an experiment I feel is unjust is the Maternal Deprivation Tests. These tests were first done in the 1960s, with widespread criticism, but still continue to happen today. This experiment is designed to study the effect of a mother being taken away from a baby. In this experiment a baby monkey gets taken away from his/her mother. This shows that the monkey becomes anxious, anti – social and showed signs of serious emotional deprivation. But surely we knew all this without needing a monkey. Many children are taken away from their parents every day, and lots experience the same emotions as the monkey. Clearly, a monkey doesn't need to be left depressed, fearful and frightened for it to be seen that children need their mothers! In some cases, after one year the monkey is killed to look inside its brain. From my point of view, this is appalling, and we should never cause an animal so much trauma to simply find something out we could find out with humans.

However, in life-dependant experiments, I believe that it is right for animals to be used, and even though I object to animals being used in clothing, and being eaten, to save a human life I believe is acceptable.

Even though many people claim they are against animal testing, in my opinion, very few people are truly against animal research. An example of this is, if your child was dying of a disease like cancer, would you really mind if a mouse was killed in the process to find a safe treatment to save her? In my opinion, many of us have supported animal research by using medication. All medicine has been tested on animals, and by buying it, I believe we are supporting animal testing, because that money can go to more research. Overall, I think that if by using an animal we can help save the greater good, whilst caring for the animals' welfare, this is acceptable.

Year 7
Prize Winning Entries

To what extent does reading for pleasure affect a person's wellbeing?

Sophie Quinn

"A reader lives a thousand lives before he dies, said Jojen. The man who never reads lives only one." (George Martin. A Dance with Dragons. (www.goodreads.com). Reading is an opportunity to experience another person's story and to see the world through a new perspective. Reading lets us travel around the world as well as through time. It opens our eyes to cultures, people and beliefs that we might otherwise have never known. As a self-confessed bookworm, I believe that reading is good for me because it thrills me and makes me feel more alive. A book can be a comfort or an excitement, a source of joy or tears. Books remain with us, and I carry with me hungry caterpillars; lost monkeys; proud princesses; Anne and George; Percy Jackson; Hermione Grainger and many more. They've climbed on board and are here to stay. However, the question remains as to whether there is evidence that reading for pleasure has an effect on a person's well-being.

In the midst of concerns about declining literacy levels, the Reading Agency carried out research into the benefits of reading. The results were startling. Of course, reading improves educational achievements, and we can assume that this then leads to greater opportunities in life, with a wider variety of career options and perhaps a more rewarding and enjoyable school experience. Children who read are better at understanding abstract concepts; they have better judgement and can apply logic. A children's book enables a child to hear 50% more words than if the child watches a television show. If a child reads before starting school s/he has a higher chance of succeeding in education. (www.businessinsider.com) The Department for Education published a paper, Research Evidence on Reading for Pleasure (www.assets.publishing.service.gov.uk) and concluded that: The main benefits of reading are on improving general knowledge; reading and writing ability; better understanding of cultures; a greater insight into human nature; enjoyment of reading as an adult; better self-worth and a wider vocabulary. (www.assets.publishing.service.gov.uk)   According to the National Literacy Trust, reading for pleasure increases:

- General knowledge
- A better understanding of other cultures
- Community participation
- A greater insight into human nature and decision making

(www.files.eric.ed.gov)

However, this is not necessarily a direct impact on well-being. High achievers at school are not guaranteed happiness!

The research of the Reading Agency illustrates that reading has a clear role in reducing symptoms of depression and dementia. Depressed patients stated that they felt more positive when listening to someone reading aloud to them. Reading increases empathy and improves relationships. (www.readingagency.org.uk). Those who regularly read for pleasure have an improved sense of connection with a wider community and an increased awareness of identity as well as lower levels of stress. Empathy is a vital aspect of emotional intelligence, "because it is how we, as individuals, understand what others are experiencing *as if we were feeling it ourselves*." (www.skillsyouneed.com) According to the Greater Good Science Center, empathy is, "a building block of morality," suggesting that a society of readers will be able to understand each other and abide by a moral code. The research goes on to state that empathy is, "also the key ingredient of successful relationships because it helps others understand the perspectives,

needs and intentions of others." (www.lesley.edu/article/the-psychoogy-of-emotional-and-cognitive-empathy). The words 'for pleasure' are key as the benefits are enhanced when the person chooses to read. (www.readingagency.org.uk).

Science is now proving what all readers have always believed. Reading has actual health benefits, such as reducing stress. According to a 2009 study by the University of Sussex, reading can, "reduce stress levels by as much as 68%, even more than listening to music or going for a walk." (www.medicalnewstoday.com). The study showed that people who read for just six minutes had lower blood pressure and less muscle tension. Reading for pleasure even reduces the chance of developing Alzheimer's in later life (www.uk.businessinsider.com). According to the UK business insider, reading stimulates our neural pathways and decreases mental decline in the elderly by 32%. In August 2016, Medical News Today published a report claiming that reading books can make us live longer. Researchers from Yale university School of Public Health carried out a study that proved the remarkable fact that adults who read books for more than 3½ hours a week were, "23% less likely to die over 12 years of follow-up, compared with those who did not read books." (www.medicalnewstoday.com). This is probably a result of the increased connectivity of the neural pathways and the resulting reduced chance of developing neurodegenerative diseases. It is therefore clear that reading for pleasure has clearly proved health benefits and, as Dr Billington states, "It's important to recognise the gains to be had from reading on our personal health and well-being." (www.medicalnewstoday.com).

There is clear evidence of the importance of sleep to a person's well-being. Research proves that lack of sleep increases the likelihood of weight gain; reduces concentration and even increases the risk of heart disease. (www.healthline.com). Reading before going to sleep signals to the body that it is time to unwind and rest. Reading therefore enhances the chance of good sleep and all the health benefits that that affords.

Readers are also more adventurous as research proves that people who read about characters doing something are more likely to do that activity. We can therefore assume that readers are more motivated and likely to engage in activities that enhance their well-being. For example, readers might be more inclined to travel or take part in new activities. As the Department of Health describes inactivity as a "silent killer," (www.nhs.uk), any activity that encourages people to try new experiences has health benefits.

Whilst it is clear that reading for pleasure does have a positive impact on a person's well-being, there are some frightening statistics about people's reading habits and their literacy levels. Adults with poor literacy levels have more health problems and do not believe that their political voice is heard. They are unlikely to volunteer. (www.readingagency.org.uk). A survey from 2014 revealed that one in 5 children in England cannot read adequately by 11 years of age. In 2012 statistics revealed that, in England, 17% of 15 year olds haven't even achieved the minimum level of "proficiency in literacy." 44% of young people aged 16 to 24 do not read for pleasure and, in 2013, 18% of adults in England had only bought one or two books in the last year. In England, 41% of children aged 11 to 15 do not do reading or writing activities that are not needed for school. It is those from disadvantaged backgrounds and the unemployed who seem to suffer the worst, with poorer literacy levels and the subsequent negative effects on their well-being. (www.readingagency.org.uk).

It is therefore crucial that we, as a society, consider ways of encouraging and promoting reading for pleasure. This can be done in many ways. For example, I believe that all schools should set up book clubs, where children are encouraged to bring in their favourite books and hear recommendations from their friends of books they can read. We can ensure that time is given for reading during the school day and that pupils are taught the importance of reading, particularly before going to bed, avoiding screens at this point. Registration time could be used by form tutors to read aloud to their pupils so that, those with poor literacy levels, do not miss out on the exciting stories. Travelling libraries could visit towns and even houses, making it easy to borrow and return books. Old telephone boxes should be used as book swap areas and schools should collate lists of book recommendations from their pupils. Each child should then choose one and vow to read it and review it. Reading groups should be established for adults with lower levels of literacy so that they have time and support to work on these skills.

However, not everyone agrees that reading is beneficial. Roy Porter, from History Today, quotes Disraeli as saying, 'Books are fatal; they are the curse of the human race…. The greatest misfortune that ever befell man was the invention of printing." (www.historytoday.com). Cervantes writes that Don Quixote, "so buried himself in his books that…from little sleep and much reading, his brain dried up and he lost his wits." (www.historytoday.com). In contrast, the forbidding of reading made others ill. Charlotte Perkins Gilman was advised by her male doctor to avoid all reading and writing, and she recalled that, "I went home and obeyed these directions for some three months and came so near the borderline of utter mental ruin." Virginia Woolf received similar medical advice and stated, "I long for a large room to myself, with books and nothing else, where I can shut myself up, and see no one, and read myself into peace." (www.historytoday.com).

In conclusion, reading for pleasure certainly has positive effects on a person's well-being. It reduces stress; extends longevity; enhances empathy; encourages sleep; reduces the symptoms of depression and dementia. I share the philosophy of Groucho Marx who stated,

I find television very educating. Every time somebody turns on the set, I go into the other room and read a book.
(www.goodreads.com)

Is veganism the future?
Imogen Hill

A big question at the moment is, 'is veganism the future'. With climate change, pollution and obesity all rising problems, veganism is up for debate as to whether it is one of the solutions and whether it should be a worldwide lifestyle. It is certainly associated with a healthy diet and lots of vitamins and minerals, plus it is an excellent way of reducing the risk of heart disease, diabetes etc. However, this image of a healthy diet isn't entirely correct, as veganism is lacking in some vital vitamins. This is at the centre of the debate about veganism and its pros and cons.

It is believed that veganism is one major way to beat climate change, which is a rising problem for the world we live in. Climate change is a global, long-term shift in our planet's weather patterns and average temperatures. In the 20th and 21st centuries, the 40% rise in carbon dioxide has caused temperatures to increase by 1 degree centigrade to a level that has not occurred in the last 800,000 years. The atmosphere and the oceans have warmed, the amounts of snow and ice are rapidly decreasing and sea levels are rising.

NASA has partially funded a study into widespread economic disparities and population growth leading to the conclusion that civilisation will slowly collapse over the next century. Their proposed solution is for a majority of the world's population to convert to a vegan or vegetarian diet. NASA believe if the majority switch to this diet, it will have a big economic impact. One of their ideas is instead of having meat-less Mondays as many people do, to reverse this and have meaty Mondays and then eat purely vegetarian or vegan produce the other six days of the week, which would reduce the demand for meat. The most startling statistic NASA discovered is that in 2012 there were roughly 7 billion animals raised as livestock for 7.1 billion people. This method of feeding the world population is clearly not sustainable.

Another study conducted by The National Academy of Sciences reinforces this idea that producing livestock is one of the worst forces driving climate change. The reason is that it degrades air quality, pollutes water-ways and is single-handedly the largest use of land. What really puts it into context is that quitting meat can reduce your carbon-footprint significantly more than quitting driving!

Veganism can also reduce climate change as it relies on more plant-based foods - and the production of animal-based foods emits a higher amount of greenhouse gas than production of plant-based foods. This means that if the world adopted veganism by 2050 then greenhouse gas emission would be cut by two thirds, saving $1.5 trillion in climate damages and healthcare-related expenditure.

High levels of low-density lipoprotein (LDL) cholesterol, found it red meat, can increase the risk of heart disease. It also leads to stroke and type two diabetes. Even worse than fresh red meat is processed meat! Processed meat has been preserved by curing, salting, smoking, drying or canning. For example sausages, salami, bacon, ham and corned beef.

On the other side of the argument, however, is that a vegan diet doesn't sustain any traditional cultural foods. Some cultures such as Masai tribes in Africa consume almost all meat diets, so for anyone from those cultures it would prove a challenge. This would also create a problem in the farming industry, the food production industry and the butchery industry. Further, there would also be a knock-on effect on the clothing industry which would suffer as leather would be rejected. The production and sale of animal products account for 1.3 billion people's jobs, and 987 million of those people are poor. If the meat and leather industries were to collapse, those workers would

have to find new ways of earning a living. There are already 1.6 million unemployed people in the UK, so if the world went vegan you can only imagine what impact that would have on those who are looking for work.

Vegan diets do not provide fat-soluble vitamins A and D. These vitamins are essential for immune regulations, digestion, fertility and hormone balance. A vegan diet relies almost entirely on soya. The main problem with consuming soya in any form is the phytoestrogen content. A study on infants shows that consuming soya in any form results in concentrations of blood oestrogen levels being 13,000 to 22,000 times higher than an infant's normal level. Vitamin K2 is what transports calcium into your bones. That is why you can eat all the calcium in the world but it won't strengthen your bones unless it is accompanied by vitamin K2. Whereas plants provide vitamin K1, plants do not provide vitamin K2, this is why a vegan diet can make your bones weak.

Vegan diets are also lacking in vitamin B12 and iron which is only found in animal sources. Recent testing shows that 83% of vegans are living without enough B12 which is an essential vitamin, compared to 5% of meat-eaters. Flax seeds, walnuts, hemp seeds and chia seeds are all brilliant sources of omega-3 which is very important. So Vegans believe that they are being healthy and that they are filling themselves with vitamins, but what they don't know is that vitamins in those forms are not well absorbed by the body. This means that Vegans often are not getting enough of these vital vitamins. Vegetarians face the same problems.

A selling point for many Vegans is that they aren't being cruel to animals and taking their lives, but what Vegans aren't aware of is that something is still dying. For example, field mice are often killed in order for

corn to be grown to be used in vegan cereal. And, plants are living things too!

To summarise, I believe that even though a vegan diet is lacking in fat-soluble vitamins A and D, omega-3, vitamin K2 and B12, with the scientists and the equipment we have today a solution must be found to those problems. One of the major solutions to greenhouse gas emissions and global warming is the world converting to veganism, otherwise we face a bigger challenge of finding another resolution in a short space of time before it is too late to make a difference. So to conclude, I really do think that veganism is the future.

To what extent is the grammar school system beneficial?

Charlotte Isbell

I will be answering the question 'To what extent is the grammar school system beneficial?'. As I have recently moved from a junior school to a secondary school, I have become aware of the different types of education available at the secondary level; state education including grammar schools and secondary moderns/comprehensives, and fee-paying schools. Grammar schools have a reputation of producing consistently high grades and successful pupils and therefore, the places are in high demand, especially since they are non fee-paying.

To attend a grammar school, children must take a standardised exam called the 11+ at the start of year 6. To be considered for a place, you must achieve a score of two hundred and fourteen or over. You may be placed on a waiting list if your score falls slightly below this, and if people with a higher score decline their place, a position may become available. The exam is a paper consisting of verbal and non-verbal reasoning, and a multiple choice and short answer maths section.

I am aware that the grammar school system divides opinion. For parents who are not considering fee-paying schools, many will see the grammar as their first choice over a secondary modern school as there is a belief that they will achieve a higher standard of education and therefore success applying for university and getting a good job. Due to this, many parents will push their children very hard via intensive tutoring. However, when they start school, there is a possibility that they may not be able to keep up in the classroom and will have to continue being tutored throughout their school life. Is this right?

For many years, the grammar school's reputation has been an excellent one. For focused and self-motivated children, grammar schools can enable them to achieve high grades as they are surrounded by like-minded individuals, all striving for the same goals. Theresa May, the Prime Minister, a former Holton Park grammar school student, indicated that she wants a "21st century education system with an element of selection". There are currently only 164 Grammar schools in England, and 24,000 state schools, and many of the grammar schools have recently been facing significant financial cuts. There have been talks to open more grammar schools and revamp the system.

However, others believe that the peer pressure and self -doubt that comes from being in a working environment with a classful of bright and competitive children may damage their confidence and mental health. Desmond Deehan, the headmaster of Townley Grammar School, says that the majority of students at the school will have some form of mental health issue while at the school, and that there will not be one term without at least one serious issue. Whereas at secondary moderns, there is less pressure placed on the child, due to mixed ability classes and therefore fewer mental health issues. However, as it isn't selective, there may be some children who are not focussed or keen to learn. In some cases, this can lead to low-level disruption, which can unfairly disrupt and take valuable time off the children willing to learn in the classroom, as shown on the BBC documentary, "Grammar Schools: who will get in?".

There is also proof that children from comprehensive schools can also achieve, without the need to go to a grammar school. In the Debretts five-hundred most influential British people list this year, 40% of them went to grammar/fee-paying schools, with the rest attending comprehensives. This shows that many children use their own ambition and drive, plus tools such as social media and technology to help them to succeed.

I personally don't believe that you can judge who is going to achieve in life and gain good exam results at the age of eleven. I don't believe that the 11+ selective system or exam is fair. To tell a child that they are not bright enough at such a young age is, in my opinion, ridiculous. It puts many ideas and beliefs in their heads, such as self-doubt, a loss of confidence and can even lead to rebellion. The exam doesn't fairly test childrens' abilities either. By mainly testing via a multiple-choice method, one could simple guest all the correct answers and achieve a grammar place. It doesn't test all areas of knowledge and can simply not test the true intelligence of each child. I believe there should be more room for creative writing and the ability for children to show their skills via other methods than multiple choice. This creates a very unequal system. However, Desmond Deehan doesn't believe in equality as it cannot be possible — there will always be someone in an unfair scenario. So, it is best taking the willing students and putting them in one school and put the other children in another school.

There is conflicting evidence that children who attend a grammar school will do better in later life. On the one hand, some people believe that attending a grammar school offers no real advantage for a child getting into university and securing a good job in later life. UCAS confirmed recently that the amount of British eighteen-year olds applying for a university place is at its highest level. This shows that going to a comprehensive school does not stop you from achieving a degree. On the other hand, as discussed in Teaching Times.com, there has been some research carried out by Bristol, Bath and London universities which shows that children who attend grammar schools earn significantly more than children from comprehensives when they are older.

To conclude, I believe that the grammar school system definitely has positive benefits. Bright, willing students can try their hardest and gain a place at a high achieving grammar school, working with like-minded classmates and probably achieving good grades. On the flip side, separating children at such an early age on the basis of one exam to me seems simply unfair. It may even shape the rest of their academic journey. So, to answer my question, "To what extent is the grammar school system beneficial?", I believe that there are positives for being in the grammar system, but there can also be advantages of the comprehensive system, as the school doesn't fully determine the child's successes in the future; the teachers may influence and help the pupil, but the success all comes down to the child themselves. Their willingness to learn and attitude to school, combined with encouragement from home are the key factors to their success. One test at the age of eleven should not tell them if they are a failure or a genius.

Highly
Commended
Entries

To what extent did the destruction of the Library of Alexandria effect humanity's development?

Laura Barnes

The Library of Alexandria has been told to have contained over 500,000 scrolls, written by many famous scholars of the time. The Library has also been said to have been destroyed around 260 BC, but how can one burnt library be cataclysmal towards the effort of humanity's development? What if the works of both Hero of Alexandria and Aristarchus of Alexandria had not been burnt? Perhaps the dark ages would not have occurred? What would our world look like today?

Hero of Alexandria was believed to have lived in Alexandria, Egypt, between 10 CE and 70CE where he spent his time tinkering with a multitude of inventions in The Great Library of Alexandria. Amongst some of his inventions, he had plans for machines that were only designed again over 1500 years later. So, why were they designed again? Some of these designs include the steam engines, wind turbines and hydrostatic fountains. Before Hero (or any other scholars/ inventors) had the chance to put any of his fascinating ingenuity into object form and not just plans on a piece of parchment, his works were burnt in the destruction of the Library. It was only 1,700 years later that James Watt patented the steam engine. So, what would have happened if Hero could have made his inventions reality?

Theoretically, if the steam engine was created and worked successfully in 70 CE, by 205 CE transport would be where it is today (providing that everything else about science had also advanced at the same rate from 70CE to 205 CE as it had from 1787 CE to 2018 CE). But 205 CE was over 1000 years ago. What would the world today look like? Science in these 1000 years would have erupted into marvellous inventions that are only figments of our imaginations currently. Air travel would have increased drastically, as hypersonic aircraft would exist, and would travel

at such high speeds that, as a consequence, we would not be able to enjoy the view out of a window because the aircraft would be windowless to ensure maximum safety for passengers on board. This could have led to record-breaking delivery time for international packages as well as ways to allow people to reach areas struck by natural disasters and deliver supplies to assist in these disastrous situations. For example, the response to the Mexico earthquake could have been quicker and as a result, fewer people would have perished if we had these hypersonic aircraft. Not only would aeroplanes be upgraded, but also cars. They would now be driverless and flying. New technology would be designed to ensure our safety in the sky (which could be implemented in other areas of transport, therefore reducing the number of transport-related deaths), as well as 'skyways' -motorways for our skies-, which would in turn give our skies a very contrasting look to how they appear today. We would also have spaceports in our skies, and flights would no longer be limited to just different continents — we would be able to leave the hemisphere as easily as a commercial flight from London to New York.

The breadth of possibilities for transport were all constrained because Hero's design was burnt in the library. We would be a far more advanced species transport wise if his designs had not been burnt to pieces during the eradication of the library all those century's ago. His designs would have changed our world and made inventions from science fiction novels and films our reality. The early mass transport boom could have excelled humanity far beyond the stars, and earth might be now unoccupied because mankind had moved on with their endeavour to travel from the small rock we call Earth. The lack of the transport boom in the early first millennia incomparably changed humanity's development.

In addition, the fire also laid claim to the Works of Aristarchus of Samos. Between 310 BCE and 230 BCE, he evaluated that the earth orbits the sun, and not vice versa, as well as the order of the planets. He also calculated a rough measurement of how vast the solar system was. It was only 1773 years later that Copernicus established these ideas in 1543. How would astrophysics have changed in the last millennia if his works had survived the fire that destroyed his books?

Hypothetically, by 245 CE space travel would have been at the same degree as it is currently. The earth could have advanced in astrophysics hugely in the remaining 2000 years that lead up to 2018. Humanity could have had a thriving colony on Mars, the moon or even planets beyond our solar system. Humanity may have even discovered extra-terrestrial life and may be in contact with them. This could open many new consequences. Humanity could be susceptible to life-threatening bacteria that could, in turn, mark the end of the human species or the extra-terrestrial life that we meet might feel threatened by our presence in the cosmos and eradicate our species once and for all. Or, it could brighten our horizons by introducing us to new technologies that we had we could not once possibly conceive. They could help us map out more of the cosmos as well as assisting us in producing safe and economical space propulsion systems to allow a greater number of people to travel the galaxy in an inexpensive and practical manner.

The measure of prospects was inconceivably enormous, but this knowledge was burnt in the fire that destroyed the Library of Alexandria. His discoveries could have changed the past two millennia's as we know it and enhanced many qualities of life but they were kaput which caused an implausible amount of damage that affected human development by thousands of kilometres of unexplored space.

On the other hand, it could be argued that all the before mentioned possibilities that were hindered because of the destruction of the library is only speculation. This is propelled by the idea that other fields of science were needed to grow so the prospects previously suggested could become reality. However, it has been disclosed that these breakthroughs would have taken centuries to appear, therefore prohibiting the exaltation of technology

until the 19th and 20th century when they did finally appear. For example, steel would have been needed in large quantity for the suggested inventions to exist as part of our everyday societal workings, however, it was warfare that accelerated the development of the production process. Without this warfare, these inventions would have remained on scrolls. It has been proposed that if the library was not destroyed – and consequently the works of Hero and Aristarchus were not burnt- then technology that allowed man to land on the moon would have occurred in the early 20th century and not late 20th century. This may have allowed for the prospect of a manned spaced mission to Mars to occur around 2018, but not for humanity to have been able to contact extra-terrestrial life or to have driverless, flying cars. So, the burnt library may not have had any effect on humanity's development as much as possibly thought before.

In conclusion, it could be argued the library's destruction drastically knocked man-kind into hindering its scientific growth and in turn triggered the dark ages or the burnt library had little effect on humanities growth at all. However, scientists and historians are unsure of the extents of the knowledge held in the library, so they can't possibly know how much humanity was held back. The library may or may not have contained important information that would have been needed to assist the developments needed to plunge the world into an early industrial revolution – and even if they did, the scholars working in the library may not have known how to take their inventions from paper to reality. Therefore, the library's destruction may have only obstructed human development by a few decades but it could have hindered the growth of humanity by centuries. But without knowing more about the knowledge held in the Library, it is unknown to what extent the destruction of the Library of Alexandria affected human development.

Are nuclear weapons good peace-keepers?

Hanna Das-Gupta

Nuclear weapons are the most dangerous weapons ever created, putting the whole population and environment at risk, yet potentially protecting everyone and the environment from the existence of other nuclear weapons. In this essay I will answer the question of whether these nuclear weapons are good peacekeepers .This is a question that is significant to everyone and everything on this planet because whenever a nuclear bomb is released (which has happened only twice in warfare) it has huge impacts killing thousands and damaging the ecosystem severely.

In 1939 just after the beginning of the second world war the then American president Franklin D Roosevelt, knowing the devastation of the First World War, received a letter from Scientists Albert Einstein and Leo Szilard about the idea of a nuclear bomb, this letter kick-started the chain of events that led to nuclear weapons as they are today: 'I made one great mistake in my life-when I signed the letter to President Roosevelt recommending that atom bombs be made but there was some justification-the danger that the Germans would make them'. Einstein himself, who was one of the first to theorize about the nuclear bomb, has quoted that he believes it was a grave mistake to send the letter to the president in the first place. He justifies that if they hadn't have made the atom bomb he was of the belief that the Germans may have made them first.

Einstein himself was particularly aware of what the Nazis could do having escaped from Germany and travelled to America. So it felt to him like there was no choice but to make the bombs first in order to protect them in case Germany threatened to attack them with nuclear weapons. If Germany threatened to bomb America or one of their allies they would be extremely hesitant if they knew America had the power to do the same back to them, which is where the first example of peacekeeping going hand in hand with nuclear weapons comes in. when two sides have the power to destroy each other completely neither side wants to because it would sentence them to the same fate therefore keeping a resentful and tense peace. Einstein saw that at the time it seemed to only thing that could be done but it started something much bigger and very dangerous that now has the world's fate at the press of a button.

On August 6th 1945 America dropped the first nuclear bomb ever dropped in warfare on Hiroshima, Japan. Nobody knew before this just how much destruction could be caused, and indeed the amount of destruction was unheard of. I found a quote that summed up what I have read about the immediate after effects of the bomb exploding   a six-year-old boy:

Near the bridge there were a whole lot of dead people... Sometimes there were ones who came to us asking for a drink of water. They were bleeding from their faces and from their mouths and they had glass sticking in their bodies. And the bridge itself was burning furiously... The details and the scenes were just like Hell.

In the voice of an innocent and honest child it makes it seem more real that people were affected by this not just politics. If Japan had been in possession of nuclear weapons it is clear that America would not have released the atomic bomb in the first place since it would put its own people in jeopardy. Japan would not wish to put so many of its citizens in danger either so there would have been more of a peace kept in that regard. However, it is obvious that a great deal of violence was caused and forever will leave a mark on history, but perhaps it will remind us of the devastation

that has been caused and prevent it happening in the future. America launching the bombs convinced Japan to surrender therefore ending the Second World War; perhaps ending a world war is a peaceful move even if a very violent strategy was used.

At the moment nine nations are in possession of nuclear weapons: the United States of America, Russia, the United Kingdom, France, China, India, Pakistan, Israel and North Korea. Only five of these countries legally have nuclear weapons, those being, the USA, Russia, the UK, France and China. It may seem a bad thing that so many places have nuclear weapons, but as I mentioned earlier the countries who have nuclear weapons would not want to attack a country with nuclear weapons because then they are in danger. The circle of countries that have protection does not end with the countries that are in possession of nuclear weapons because of numerous military alliances.

The Cold War happened soon after the Second World War. It was between the Soviet Union and the United States of America. This could have started for multiple reasons but it was probably that the Soviets believed in a communist system and the USA believed in a capitalist system; they therefore had very different mind-sets. There was a lot of competition during this War, including the space race and the nuclear arms race. The nuclear arms race started for multiple reasons, one of them being that if the Soviet Union fought a war against a nation that was known to be in possession of nuclear weapons they were in danger of attack without being able to fight back or scare the USA out of attacking them. The Soviet union and the USA always wanted to outmanoeuvre each other during this war so if the USA had a remarkable weapon then the Soviet Union felt it must go beyond that and make an even more powerful weapon.

The reason that this War is called the Cold War is that the War did not included direct violence or fighting; instead it was fought indirectly. This is an example of nuclear weapons keeping peace, this could have been a bloody war with lots of deaths but instead there was very little blood-shed. By 1952 America had produced something called the H-bomb, 2500 times more powerful than the bomb they dropped on Hiroshima, and the next year Russia made another H-bomb. Weapons this powerful put thousands at risk.

Are nuclear weapons a good peacekeeper? The risks are very high. Although everyone seems too scared to attack with nuclear weapons for fear that they will be targeted back the most likely cause of nuclear war would be misunderstanding or accident. Once Russia thought that a Norwegian tester missile was an American missile and almost attacked, and various occurrences like these have happened. I think that we have seen in the past how much destruction nuclear weapons can bring, specifically in Japan at the end of the Second World War, and hopefully this won't happen again. It is obvious that nuclear weapons can be peacekeepers and although they are not necessarily the best because a lot of people are at risk of attack and they can produce great feelings hot fear, we cannot get rid of them safely. If we try to get rid of them it is possible that one country may secretly produce them and then we are in even more risk because we have no means of defence and we cannot threaten back with nuclear weapons we don't have. So although they may not be perfect we must accept them as peacekeepers and look on the positive side of having such revolutionary technology because there is no alternative option. I do not think that nuclear weapons are perfect peacekeepers but I think they are good peacekeepers.

Why is the Finnish education system better than the English education system?

Anoushka Mundey?

Why is the Finnish education system better than the United Kingdom's education system? PISA rankings say that Finland is number 5 in science, 13th in maths and 4th in reading while the United Kingdom is 15th in science, 27th in maths and 22nd in reading. Singapore is 1st for each category. Finland is also known to be the happiest country in the world, so to compare England to Singapore may show us many ways to improve the English education system; however, it will not tell us how to maintain much happiness at the same time (Singapore is the 34th happiest country in the world). There are multiple reasons why Finland is getting such good results: the students have more time to play, the teachers are as educated as doctors or lawyers and students only have to do one test throughout their whole high school career.

The first reason the Finnish education system is so high on the PISA rankings is that students get a lot of time to do activities during the workday. The average amount of hours in the school day for a Finnish student is 5 hours (including 75mins of play) compared to the UK which students have 7 hours of school (including 80mins of play). These massive breaks in the day are because it is law in Finland that for every 45 minutes of work students have to have 15 minutes of play. English students, on average, get 8 mins of play for every 45 mins of work. Also, the average Finnish teenager only gets 2.8 hours of homework a week. However, the average amount of homework in the UK is between 3-5 hours a week. An English student's amount of homework is up to 2.2 hours more homework a week than in Finland. OECD (the company that carried out the PISA tests) also states that the UK has the most significant gaps in homework hours because there is a wide gap between wealthy and disadvantaged students. In an average week, UK students get 575 more minutes of school (about 9 and 1/2 hours) than Finnish students. Finland also gets 10-11 weeks of summer holiday which is 4-5 more weeks than the UK's summer holiday.

Having more time to play allows students to have more time to be children. Additionally, all this time for play would help young children improve social skills, social maturity and to nurture their creative side. This would also give students more time for their hobbies and recreational activities they enjoy which the teachers do not teach them at school, for example, music, knitting or dance.

I have done an investigation to find out if English students can do extra-curricular clubs and hobbies without getting too stressed: 100% people said that they get very stressed about balancing clubs and homework. Then, I asked the same question but if school ended at 2pm instead (like in Finland): 90% said that this would reduce massive amounts of stress. Equally, it also gives students more freedom to do whatever they want, and it allows children to make the most out of their childhood. So why does Finland still come out on top even though they do less work that English students?

The Finnish education system does not need as much homework or school time because teachers are chosen with the highest care and are respected just as much as doctors or lawyers. Schools choose the best teachers as only 1 in 10 people who applied will get the job. However, in England, the chance of becoming a teacher at a school is very high. Only 7% of people who applied to Helsinki University (Finland's best university) were accepted – this means that more than 1,400 applicants were not accepted. Therefore, the best teachers/professors are teaching which leads to the best education for their students.

One teacher in Finland teaches an average of twelve students while here in England a teacher teaches double that number; this allows Finnish students to have more one on one time with their teacher. Better teacher-student relationships shape the way students think and act at school, as well as this the students are more likely to think positively about learning and school altogether. The student will be more willing to risk making mistakes, be more hardworking and to ask for help when they need it instead of not participating at all at the chance of getting something wrong. Because students have fewer work hours, this means teachers do too; therefore, this allows more time to plan lessons so that they will be more useful to the student.

In Finland it is required for all teachers to have a master's degree yet in England a teacher needs work experience and a C/4 in their GCSEs; furthermore, teachers will be altogether more experienced and much more effective. Additionally, Finnish teachers have much more freedom in the classroom, and they do not have to go through inspections, standardised tests and government control. Getting rid of inspections in 1990 enforced the idea that teachers required high academic credentials and that they should be treated as professionals.

Finnish students only get one standardised test throughout their whole time in school; this test is taken at the end of the school year and graded by teachers. Finnish students are judged on how well they are doing by comparing how much they have learned to the curriculum made by the teachers.

The examination which all students have to take is called the national Matriculation Examination. It determines whether the student can graduate high school and go to university. The students must take four individual tests to get the Matriculation Examination certificate: one which assesses the primary language (Finnish), then they have to choose three other subjects from your second language (e.g. Swedish), foreign language (e.g. English) or maths; then students may add an optional exam in another subject. The questions in the exams come to terms with societies problems and a lot of them revolve around evolution, losing a job, dieting, political issues, violence, war, ethics in sports, junk food, sex, drugs and popular music. These issues need many areas from different subjects to answer, an example from the examination is:

Some politicians, athletes and other celebrities have publicly regretted and apologised for what they have said or done. Discuss the meaning of the apology and accepting it as a social and personal act.

All the teachers and students are happy to have one final exam at the end of school instead of a lot of frequent tests throughout the whole time at school which creates much stress.

In England, pupils get many tests throughout the year to judge how well they are doing, with multiple tests at the same time. As well as this in the UK, we have GCSEs and A levels which tell us what university we will attend. These exams only test us on subjects, not on issues in society.

In conclusion, I have found that the Finnish education system is excellent because it reduces huge amounts of stress for students unlike the English education system. It gives much more recreational time which leads to more time for children to be children and for them to improve their social skills. As well as this, teachers are much more experienced and very respected, therefore much more effective. I have found that the Finnish Education system is better than the English education system, so the next steps for the English Education system are to have longer break times and shorter days, which will allow more time for clubs and hobbies, fewer tests to reduce stress and, in some schools, better teachers with better qualifications. In my opinion, only having one test at the end of the school journey would reduce stress; I think it would also help students to enjoy learning more. It would also raise the end of school grades if students were more willing to learn. Additionally, being tested on society's problems would also be very helpful in the future as it helps students learn how to deal with these issues.

Can 'Missguided's' brand campaigns ever really change attitudes in the fashion industry?

Éowyn Charman

Introduction

Fashion, although can be simply described as 'the style of clothing and accessories worn at any given time by groups of people,' is much harder to define as it means different things to different people. It may be a way to express yourself, a form of art, a celebration of who you are, or a means of protection. Today the fashion industry is a multi-billion dollar global enterprise devoted to the business of making and selling clothes. It was during the mid 19th century that haute couture and ready and wear clothing first appeared as previously virtually all clothing was handmade for individuals.

In the 20th century, with mass produced ready to wear clothing in standard sizing more available, and better technology came a desire for an independent fashion industry and increasing media attention. The fashion industry today encompasses design, manufacturing, marketing, retailing, advertising and promotion. As part of this we see skinny models in adverts, during fashion weeks and promotions, perfect mannequins in stores and airbrushed and photoshopped images. In this essay I will be focusing on Missguided's 'Mark Your Mark' campaign to "change the fashion industry for the better".

Why Missguided and what is their campaign? Missguided is a fast-growing UK-based retailer selling clothes aimed at 16-25 year olds. Sales have increased by 75% in 2017 to over £200million. Missguided is in their own words:

a bold, straight talking and forward thinking fashion brand who can empower females by the art of clothing. Everything we create is informed by our customers along with other global influencers like social media.

Their *#keeponbeingyou* movement aims to inspire people to love themselves, for themselves, to embrace their flaws and not to strive for what the worlds sees as perfection.Missguided have a huge social media presence with stores in Manchester, London and in Selfridges in Manchester and Birmingham.

In December Missguided launched their campaign about body positivity and aptly named it *#makeyourmark*. The campaign featured completely unretouched images and encouraged women to embrace their flaws. This is a picture of the models and body-positive activists selected to represent the campaign as their values aligned to Missguided.

"It's important to teach young girls to love every part of themselves" – Tinar.

"We go through so much as a woman, through our bodies, through our mental health, we are such amazing creatures" – Jade

The campaign attracted 122,000 Instagram likes and 3,040 retweets and the *#makeyourmark* movement has seen 5,374 uses of the hashtag across social media. UK visitors to the Missguided website rose by 20% and by 12% in the USA. This campaign was created to get a message across to all of their shoppers to love themselves for who they were, to embrace their "flaws" and not to strive for perfection as the world sees it.

Diverse mannequins

In February Missguided unveiled a diverse range of mannequins in two of their stores. These included female figures of different ethnicities, in addition to highlighting skin conditions such as stretch marks and vitiligo with the aim to show customers that beauty comes in many forms, and women should not feel less than beautiful if not aesthetically perfect. The mannequins are as diverse as we are ourselves.

All the mannequins were created in their stores by highly talents makeup artists who were briefed to give them natural body features like freckles, stretch marks and vitiligo. To this day no other fashion stores have created a range with "flaws" and they received a lot of praise for doing so. Although they are not the first to bring in different sized mannequins. Whilst it is a step in the right direction you can't help but notice the mannequins are still skinny.

Female Flaws

The most recent campaign celebrates females who have what the industry perceives as 'imperfections' and 'flaws'.

#inyourownskin features six women with an array of skin conditions to inspire women to embrace their imperfections. These include a plus size model with albinism, scarring, birthmarks, freckles, and skin conditions. University student Beth, who has psoriasis said, "beauty to me is about what's inside, personality, happiness, love and acceptance''

What are the fashion industry attitudes?

Diversity: This is a huge problem in the fashion industry with often only one or two models of colour being on the runway however, big designers are getting large amounts of money for using them on their shows. Why can't all models on the runway be worth the same as each other?

Size: To be a success in the fashion world you would typically be, or think you need to be, a size six or less but in real life we aren't all as skinny as the models we regularly see and we start to compare ourselves to them. For example, Victoria Secret models take part in runway shows all over the world and whilst it may be considered a very sought after job in the industry everyday people like ourselves simply do not look like them. Some models seek to lose weight and can mean that they bring an eating disorder upon themselves. A model's diet plan often consists of lean protein and vegetables with a normal day consisting of:

Breakfast	egg white omelette with spinach and turkey or a green smoothie with chia seeds.
Lunch	chicken salad with brown rice.
Dinner	grilled fish and green vegetables.
Snacks	berries, almonds, nut butter, yoghurt and protein shakes.

They avoid bread, processed carbs and gluten.

Trolling: For many models social media has strengthened their career and helped its success but for others it has broken them, with some models taking down their pages due to some of the hate comments or even death threats that they have received on their pages. This is not okay and no one should have to go through this.

Money: Each year hundreds of up and coming new models aren't paid by the producers of their shoots and shows and this leaves many models penniless as this is their only source of income. The excuse that many producers gave was that the models needed to "trust" them and that they would make so much money one day. Most of the models quickly left the managements that they were under once they had herd this from different producers that worked there!

How can Missguided change these attitudes?

Missguided say that they are committed to changing the attitudes towards body image within the fashion industry as a whole and that they will always be committed to this. This led them on, they say, to not touch up models stretch marks and to have more diversity of both models and mannequins. A study published in the Journal of Eating Disorders found that the average female shop mannequin here, in the UK, is very underweight. This re-enforces the industries unhealthy "ultra-thin" ideal. However in 2013 Debenhams introduced size 16 mannequins into its stores to reflect the average dress size in the UK. People need to be seeing themselves reflected back more and more when shopping, this will help all generations become more body confident.

Does what we see from mannequins affect our self-esteem?

There are many thousands of different and expert opinions on whether what we see online and in stores does actually affect your own body image views. In short, yes it does; every time we go shopping, subconsciously we can reflect and think about how we look compared to, not only, the mannequins but other people in the shop also. Seeing these tiny mannequins in almost every shop that you go into can make you perhaps unsatisfied with your shape, weight, thighs, stomach, arms and the list goes on and stores are letting it happen!

Why it is important to me and other people around the world?

Missguided's mannequins with vitiligo really made me think about children's self-esteem in this world today. Instead of just having the plain and skinny mannequins that are "perfect" why not have more with conditions and "flaws" in today's society. I have vitiligo, a rare skin condition that affects around 1% of the world's population. I have had this since I was four and I hadn't seen anyone else with vitiligo until Winnie Harlow was a contestant on America's next top model. She talked all about the challenges that she had faced as a child and how she was there to show everyone at home that they could be whoever they wanted to be no matter what the stigma around them was. That really made me think about how I had never seen another person with vitiligo facing the same challenges and worries as I was. To do something as simple as having a couple of mannequins in stores all over the country really empowers me and lots of others to be who they are and to not worry about what others think about you.

In conclusion, I think that if every store took a leaf out of Missguided's strategy and branding and had both mannequins and models that were of different ethnicities, religion, embracing natural body "flaws" then maybe our society wouldn't be quite as 'body aware' as they are and more people could be their 'own person' more comfortably? Maybe it could eventually change the fashion industry for the better and we could replace the "flaws" with the "natural". If every fashion company changed then surely shopping would become more of a self-love indulgence? Whilst Missguided have made a really positive and inspiring start, there is undoubtedly still a long way to go to change the entrenched culture in the fashion industry.

Will there still be a gender gap when I enter the workplace?
Freya Dhillon

Introduction

I am twelve years old. Assuming I finish A-Levels, go to university to do an undergraduate course and possibly have a gap year, I will be entering the workplace when I am 22 or 23 years old - in 10 years' time (2028). In 2017, according to the Government's Office for National Statistics, the gap in the UK between male and female workers stood at 18.4%. Will this gap still exist when I start working?

What is the Gender pay gap?

The Cambridge Dictionary says that the gender pay gap is the difference between the amounts paid to women and men, working in the same organisation or profession and across a region or country. The UK Government's aim, when it introduced gender pay gap reporting for larger employers in 2017, is to enable women to know whether or not their employer has a gender pay gap and what they are doing to close it.

Gender pay gap is different from equal pay. Paying men and women different rates of pay for work of equal value was outlawed in the 1970 Equal Pay Act although there are still high profile cases that highlight this is still an issue, such as Carrie Grace's recent dispute with BBC News where she was paid substantially less than her two male colleagues.

Why is there a gender pay gap?

Gender pay gap shows historical, cultural and structural differences in the types of jobs done by men and by women. Women tend to be in lower skilled, lower paid, lower status jobs and men in higher skilled, more senior roles traditionally supported by trade unions or professional bodies. Where professions are dominated by women such as nursing, teaching, carers, administrators and less historic roles like the growth of social media managers, pay and value tend to be lower. Men have long dominated jobs in engineering, medicine, construction, finance, politics and management – all better paid professions. This is known as professional segregation and has its roots in the choice of school subjects and careers advice. Gender role models, family expectations and how we are treated in our early years also has an impact. Research has shown that boys tend to earn more pocket money than girls.

Historically, men became the breadwinners – going to work to earn money to provide for his family. Women had responsibility for staying at home, cooking, cleaning and caring for the children. These stereotypes persist today but are starting to be broken down with more fathers involved in caring and domestic responsibilities and more women having successful careers and breaking through glass ceilings. In the last General Election, 208 women MPs were elected, representing 32% of total MPs and, of course, the UK has a female Prime Minister. Out of the 350 largest UK companies, there are now 15 female CEOs – a very small, but growing proportion.

The stereotyping persists in the way that a lot of decisions are made about who gets recruited, promoted and developed in their careers. Being a woman, and especially being a mother, can mean that organisations question their commitment to work (being a father does not seem to create similar effects). Recent research showed that women are promoted at lower rates than men. In one study, researchers sent mock applications for science lab jobs to US universities and randomly allocated male or female sounding names to similar applications. They found that not only did universities think that the "male" applicants were more competent, they offered them higher starting salaries! Gender differences are embedded in our history, politics and culture.

One in nine mothers were either dismissed, made redundant or treated so poorly they felt they had to leave their job. A higher number report feeling discriminated against by their employer around maternity leave. This can cause the pay gap to widen as women returning to work after maternity leave or a longer career break tend to take lower paid roles working less hours so that they can continue being the main carer for their family. Most women don't ever catch up in their careers compared to men. Men don't suffer the same impact on becoming fathers.

The World Economic Forum identify access to basic health care and political representation impact on gender equality across the World. There are proactive measures that can be taken. Iceland and Nordic countries are leading the way and moving closest to gender equality at work.

What is the estimated time until there is no gap?
The World Economic Forum (WEF) predicted in 2017 that it will take 217 years for the difference in pay and employment opportunities of men and women to end.

Saadia Zahidi the WEF's head of education, gender and work said:

in 2017 we should not be seeing progress towards gender parity shift into reverse. Gender equality is both a moral and economic imperative. Some countries understand this and they are now seeing dividends from the proactive measures they have taken to address their gender gaps.

It will take so long to change because historical gender stereotypes run so deep – in our languages, teaching, storytelling, politics, laws and so many other influences.

Closing the gender pay gap in the UK
If the gender pay gap closes in the UK giving gender parity, PWC estimate it will add £188bn to the UK economy.

The government's Equalities Office has started to take this seriously by looking at the roles of fathers, providing more support for women and challenging larger employers to measure and report their gender pay gap and have more women as board directors. The Equality Act 2010 outlawed all discrimination for employment on the grounds of gender, marital

status and being pregnant, but it stills persists. The "motherhood penalty" is a term coined by sociologists who argue that in the workplace, working mothers encounter systematic disadvantages in pay, perceived competence, and benefits relative to childless women. Mothers can earn 3% per hour less for each child they have compared to women working in similar jobs who do not have children. There's striking new evidence underscoring how deeply entrenched and pervasive the motherhood penalty is. Even in Denmark, one of the world's most progressive societies, that penalty is increasing.

More needs to be done to understand and reduce motherhood penalty, to encourage more men to take part in domestic and caring responsibilities such as promoting more shared parental leave and more women to excel in their careers. Schools need to play their part too in encouraging girls to take stereotypical "boys" subjects (maths and sciences) and likewise for boys to take more "girls" subjects. We can all find our skills and purpose without being burdened by whether we are male or female.

Conclusion
In conclusion, and very disappointedly, there will still be a gender pay gap when I enter the workplace in 10 years. Hopefully though the gap will have decreased and employers will be continuing to close the gap. Hopefully there will be more services to help women be supported to have children and also get their careers back on track after a break. Hopefully companies will not discriminate against women when hiring for jobs as this is already illegal. More families should share childcare and domestic arrangements, to remove parenting being seen as "women's work".

The pay gap won't close itself, so everyone has to do their bit. It is time for gender discrimination to end. I'm not going to stand by and let it take 217 years to happen.

What is feminism and why is it still relevant in today's society?

Ivy Thomas

By dictionary definition, Feminism is the advocacy of women's rights on the ground of the equality of the sexes. The movement's primary purpose is to empower women, and in some cases men, to stand up against equality injustices that take place all around the world. This seems straightforward, however, throughout recent years there has been a growing controversy towards the subject. A controversy which includes the question of whether or not this campaign is still needed today. In this essay, I will be exploring the reasoning as to why Feminism is still necessary and will try to investigate ways to move forward with this crucial campaign.

In order to consider this title, it is best to go back to the very root of Feminism. In the late 1800's, the Women's Suffrage movement took place. Women of that time had no say in political affairs, and so fought for voting rights to gain more control over the country. Many organisations were set up and different protests were carried out. It drew women of various sections of society together to give them an identity they had lacked until that time. Their tactics were militant and they had large scale strategies, such as: law-breaking, violence and hunger strikes. By 1909 the campaign had branches all over the country. Different bills were passed referring to women's suffrage but, it wasn't until 1928 that all women, from all backgrounds, were allowed to vote.

The women's suffrage movement was the first time in history that Feminism was truly carried out. After the bill passed that women could vote, their presence in society shifted and they were acknowledged more often. However, it wasn't until the 60's that women really started to feel empowered. They began to question if 1950 ideals were really in their best interest. Soon, many were looking outside of their domestic lives for fulfilment and were brought out

of their stereo typical role of life revolving around housework and children. Once this idea of success beyond the home was in full gear, feminists began to tackle harder problems. The main ones being: inequality in family life, domestic violence and sexual harassment. Unfortunately, many of these inequities are still ongoing, in addition with the dozens of problems that have only just been recognised such as, FMG, child marriages, equal pay, misogyny and maternity leave. And so, just like the suffragettes, feminists today are combatting serious causes that need to be recognised in order achieve true economic, political and social justice.

As I have already laid out, there have been many problems that feminists of the past have had to face and most are still being battled. In numerous eyes, it seems as though this fight will never end, mainly because of our evolving society. A big question is whether gender equality will ever truly be fulfilled. With new opinions being brought into the 21st century, it is difficult to ever imagine a world where we live as equals. However, these obstacles must be tackled in order to make any progress. One particular issue that has recently been pushed under the microscope is the infamous gender pay gap. This is the percentage difference between men and women's average earnings. Essentially, the figures determine whether women, who are doing the same work as men, are being underpaid. Over the past two decades the figures have hovered between 15% and 18%, which up till now has not been addressed. In April of 2018 all companies with 250 or more employees were demanded to assess their gender pay gap and post the data on a government website. Once the figures were revealed, the public were able to reach them, and the stigma about discussing earnings was broken. It was found that 78% of firms were favouring men over women, which was a massive blow. The fact

that in 2018 there was still a latent sense of bias in the workplace was baffling to many. After the initial shock, the public began to question the figures. What did they mean? Why were they like that? And, most importantly, how did they get like this?

To answer the first question, they define whether women (or men) are being overlooked. The figures can be broken down into industry categories but, still, every industry has a category favouring men. Even female dominated industries, such as teaching or nursing, are in favour of men when it comes to pay. This means it is difficult for women to escape the pay gap as it is so wide spread. So, why has it come to this? To answer this question, you have to look behind the numbers and facts and delve into web of interrelated connections between work, family and society's influences. It is seen that men and women work in different industries and jobs. However, what is also noticeable is that women are attracted more to lower wage work. Maybe subconsciously, but the majority of women seem to gravitate towards jobs within nursing, teaching and retail, which compared to business and law (jobs traditionally dominated by men) are not paid as well. This is referred to as industrial and occupational segregation. Another important factor to consider is that men are more regularly placed in higher leadership roles. 'JP Morgan' an investment banking firm in America have only 9% of women working in higher paid jobs. This indicates how easily men can be favoured and women ignored. A big contribution to this gap is gender bias when working or applying for a job. Sometimes a person is treated unfairly in pay and in other decisions depending on their gender. This is usually because of a women's age and her assumed likely hood of becoming pregnant.

As you can tell, all of these factors play into how men and women are payed differently. But, leading on from this, the big question is how we, as a society, have done this. Going back to industrial and occupational segregation, it is important to first question why this is. Why have women been attracted to these types of jobs? Well, it could be linked to relativism. Throughout history women have been ignored in every aspect of life and so their options were always extremely limited. As a result of this, women of today are choosing lower wage jobs and in turn aiming lower than men. Another reason as to how this has happened is the assumptions that are given on a day-to-day basis. As I have mentioned, women are sometimes judged on their likely hood of becoming pregnant. This is a stereotypical way of thinking for those who are judging as they are not only being ageist but are jumping to conclusions without any knowledge or basis. The act of making assumptions without reason is evident in our lives living in the 21st century and has most definitely been brought into the work place when linked to this situation.

My final reason to relate to this question is not to do with the history of women or the role society plays within the workplace but, to combine the two, and discuss the box that women have been pushed into. Not only in the workplace and society but in family, politics, media and education. In all of these categories of life, women have a stock character they 'must' be. And although as a society we are changing by introducing updated concepts, we still seem to be pushed back. Back into the positon of doing the cooking and cleaning. Of sitting back and watching the poor parliamentary representation. Of flicking through magazines reading women be criticised on their looks. And just listening to stories of young girls being refused access to school. As we accept this role of 'the woman' we are just taking steps backward. And although we drill into young minds that every gender is equal we still have that underlying presence of male supremacy. Overall, we don't seem to be going anywhere. We may tell ourselves we are but, in reality the box is still there and is being reflected in all these categories of life. The real reason as to how this gender pay gap has occurred is because, as women, we have accepted it.

But, things are changing. After the gender pay gap was brought to attention more women have begun fighting for justice. Whether it be something as big as the gender pay gap, like child marriages, or something as small as cat calling or mansplaining, women feel empowered. It is important for these issues to be addressed with more support, so that as an evolving society we can battle the problems quicker and put a stop to them completely. Because they are real. Even if they aren't always pushed in our faces, the little setbacks add to something big: the lack of gender equality. In conclusion, the real reason as to why feminism is still relevant in today's society is because without it, women will be silenced.

To what extent did the Black Death cause the Peasants' Revolt?

Maddie Barnes

The 14th century was a time of great turmoil. The Black Death and the Peasants' Revolt were the most significant events of the century, with the Black Death killing almost 50% of the population in Europe.

In 1348, the Black Death hit England. All the conditions were right for an infectious disease, the doctors were powerless against infections and people were weakened by harvest failures and war. The germs, carried by the fleas, and then the fleas carried by the rats roamed all around the dirty cities and towns. Busy trade routes carried the plague from one place to another and soon everywhere was infected.

The plague arrived in a port called Melcombe Regis in Dorset in June 1348. It spread through the South of England in 1348, then reached Wales, Ireland and the North of England during 1349, and hit Scotland in 1350.

Almost 50% of the European population was killed by the Black Death. The disease was called the Black Death because one of the symptoms produced a blackening of the skin around the swellings, known as buboes. The buboes were red at first, but later turned a dark purple, or black.

On the first day of catching the Black Death, painful swellings called Buboes formed in the armpit or groin area. They were usually the size of an egg but could get as big as an apple! On day two, the victim developed a fever and vomited. On day three, bleeding under the skin will occur, causing dark blotches all over the body. On day four and five, the victim would suffer severe muscle spasms and he or she would be in excruciating pain. If the victim was lucky, the buboes would burst and a foul smelling liquid would ooze out, if this happened you would usually live, however if not you would suffer a very painful death.

No one knew what caused the Black Death, or how to cure it, so people came up with ideas and were determined they knew the cures. One of the causes was miasma – bad air – which I think isn't too unbelievable due to how dirty the streets were and how little they knew about anything back then. They really had no clue how to cure the Black Death. This led to many weird and wonderful suggestions, such as shaving a chicken and strapping it to plague sores, eating crushed emeralds and eating a magic spell which had been written down for them.

After the Black Death, few were still alive. Over one third of the people of England died. Many villages were completely wiped out and crops rotted in the fields. This was a great time for the small amount of Peasants that survived. Their diet improved – they were able to get meat and more bread. But for Lords, this was a time of struggle. Due to the lack of Peasants, the Lords didn't have enough labourers. The Villeins took advantage of this and demanded higher wages. The Lords had no choice but to pay them more than 2d a day (2d was their average wage). The government did not like this one bit; the Peasants were becoming too rich. So they decided to pass a law called the 'Statute of Labourers' which stated that no labourer could be payed more than 2d a day. Of course, this did not work. Lords were still being forced to pay them higher wages then allowed. Obviously many people lost family members during the plague, which meant that not every Peasant was overjoyed with the consequences of the Black Death.

The Peasants' Revolt was in 1381 (thirty-one years after the Black Death) and was a rebellion of peasants in England. It was the biggest rebellion of farmers in medieval England. The Peasants' Revolt was a popular uprising and is also known as 'Wat Tyler's Rebellion' due to the leader of this revolt being called

Wat Tyler. Although the peasants' demands were not met in the end, it did show the rich and wealthy that you can't push peasants too far.

The Peasants' Revolt started on 30 May 1381 in Essex, when a tax collector tried, for the third time in four years, to levy a poll tax. The war against France was going so badly, the reputation of the government was damaged badly, and getting the tax was 'the last straw'.

The peasants were not just protesting against the government, ever since the Black Death in 1348, the peasants had become increasingly angry that they were still serfs. They were demanding for less harsh laws, that all men should be free and equal, and a fairer wealth distribution. Soon both Kent and Essex were in revolt. They send each other tactics by letter. They marched on in London, destroying ministers of the government's houses. They also had a set of clear political demands.

On June 15th, Richard II (the fourteen-year-old King) met with the Rebels' leader, Wat Tyler. The Lord Mayor of London, William Walworth, killed and attacked Tyler. Before the rebels could retaliate, Richard stepped forward and promised he would abolish serfdom completely. All the rebels went back to their houses, but later on, government troops marched around the villages hanging people who partook in the revolt. Although the Revolt was over, it's demands — freedom and equality, less harsh laws and money for the poor — have become part of our democracy in the long term.

The Black Death (1348 — 1350) had killed many people. This meant there was a shortage of workers and wages went up. When Parliament passed the Statute of Labourers (1351), it said that if people refused to work for the maximum wage, then they would be punished with prison. This meant that poor people would stay poor. Obviously, you would be mad. Thirty one years is a long time to stay poor and get treated wrongly, and see your friends and family suffer from lack of money. They decided that it was wrong and that something needed to change. This then led to the Peasants' Revolt. After the Black Death, many manors were left short of workers. To encourage those who had survived to stay on their manor, many lords had given the peasants on their estates their freedom and paid them to work on their land. Thirty one years after the Black Death, many peasants feared that the lords would take back these privileges and they were prepared to fight for them.

There are many other theories than it being caused by the Black Death, for example this one: Many peasants had to work sometimes up to two days in the week for free on church land. This meant that they could not work on their own land which made it difficult to grow enough food for their families. Peasants wanted to be free of this burden that made the church rich but them poor. They were supported in what they wanted by a priest called John Ball from Kent.

Another one, which I've seen a lot during my research, is this: the long war with France cost money, and this money was often supplied by the peasants' taxes. A new tax called the Poll Tax was introduced in 1380 by Richard II. This made everyone on the tax register pay 5p. It was the third time in four years that a tax like this had been used. By 1381, the peasants had had enough. 5p to them was a great deal of money. If they could not pay in cash, they could pay in kind, such as seeds, tools etc., anything that could be vital to survival in the coming year. A tax collector arrived at the Essex village of Fobbing in May 1381 to find out why the people there had not paid their poll tax. The

villagers threw him out. Soldiers arrived to establish law and order in June, but they too were thrown out because the villagers of Fobbing had organised themselves and many other local villages in Essex had joined them.

After doing this, the villagers marched on London to plead with the young king to hear their complaints. One man had emerged as the leader of the peasants – Wat Tyler from Kent. As the peasants from Kent had marched to London, they had destroyed tax registers and tax records – the buildings which held the government records were burned to the ground. They got into the city of London because the people there had opened the gates to them. The discipline of the peasants was starting to go by mid-June. Many got drunk in London and looting took place. It is a known fact that foreigners were brutally murdered by the very drunk peasants. Wat Tyler had asked for some discipline amongst those who looked up to him as their leader. He did not receive it. On June 14th, the king met the rebels at Mile End. At this meeting, Richard II gave the peasants all that they wanted, and in they would go home in peace. Some did. Others returned to the city and murdered the archbishop and Treasurer – their heads were cut off on Tower Hill by the Tower of London.

If the Black Death hadn't happened, then there would have been no shortage of workers and everything would have remained the same for a while, however the Peasants would have rebelled eventually due to the extremely unfair conditions they lived under and the Black Death acted as a catalyst for this.

The history of climate change and why it is so important
Hannah Martin

Introduction

The Climate on Earth is changing now more rapidly than ever before. People all around the world are concerned. The world has had tropical ages and ice ages, since it was formed billions of years ago. However over the last two hundred years, conditions on earth have been affecting this natural cycle. This is leading to the disruption of the ozone layer (the atmosphere around the Earth). This disruption is being caused by the rising of CO_2 levels. In this essay, I will explain CO_2 and what has been discovered about the history of climate change.

This essay was inspired by a talk I went to by Emily Shuckburgh, a climate scientist based at the British Antarctic Survey. She talked about her work at Antarctica and how they were able to understand the history of climate change. Together with Chris Haughton (award winning author and illustrator) they made a climate change video (Message from Antarctica) to explain climate change to younger people.

In this essay I will talk about the history of climate change and how the British Antarctica Survey is finding out information about CO_2 and what we can do about it.

So what is climate change?

Climate change is a long term change in the Earth's atmosphere. The Earth has cycles around the sun, which lead to natural warming and cooling. However in recent years human behaviour has had a big effect on our planet; but even the simplest changes in our everyday life can help.

When people investigate climate change they look at the sun and the amount of energy and light the Earth is getting. At the moment the earth is getting lots and lots of energy from the sun. Which is very bad for places like Antarctica which are melting now quicker than ever.

Industry (especially in recent years) has had a big effect on the Earth's Climate. The Industrial Revolution is when factories were built and a lot of gas clogged up the air. Ever since this, the energy in the atmosphere has increased leading to a rise in temperature. Nowadays most houses around the world have cars and a lot of people travel. Cars and factories emit a lot of CO_2 and that is why in places like London (where they have a lot of factories and cars) the air might not be as clean.
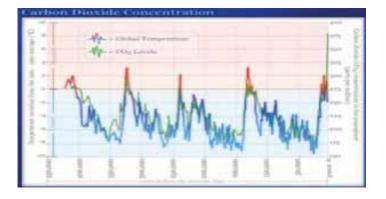
This rise in CO_2 is causing many species in Antarctica and the polar regions to decrease in numbers. One of the species that scientists are most worried about is krill. Krill is at the bottom of the food chain, so any reduction in krill will have a huge impact on animals higher up the food chain.

Lots of organisations around the world are doing all they can to make people aware of CO_2 levels. CO_2 has a big effect on climate change and many people around the Earth are still not completely aware of the damage it could create.

So what is CO_2?

CO_2 is more commonly known as carbon dioxide (the air we breathe out).

Trees and other plants take in CO_2 and oceans and ice trap CO_2 and that is how the world stabilises the amount of CO_2 in the air. The Earth's rotation around the sun and the angle of the Earth means that every 100,000 years (approximately) the sun's energy and light is weaker; causing an ice age. The ice traps a lot of the CO_2 in little air bubbles; when this cycle has

finished all the ice melts, releasing a lot of extra CO^2 into the air.

On the graph above, there is a big rise in CO^2 levels as we exit the ice period. This is what is happening today. However humans are adding extra CO2 into the air which is making the rise even greater. It is predicted that when the Earth's population reaches 8 billion, the rise in CO^2 levels might be unstoppable. Therefore one of the ways to stop this rise, is to stop deforestation. Trees take in CO^2 and keep the balance.

The bottom line is that atmospheric carbon dioxide acts as a thermostat in regulating the temperature of Earth.
(NASA)

The History of Climate Change
The history of climate change is very useful for estimating the future. At the British Antarctica Survey they use evidence to decide what to do about climate change in Antarctica.

In the following page I will be explaining about the British Antarctica Survey. How they find the information and how they analyse it. Also I will give a few examples about how everyday life has a big effect on Climate Change. The British Antarctica Survey collect information in the ice and then send it over to their Cambridge labs and analyse it. This information is very useful as it helps scientists decide what to do.

People from the Survey dig kilometres deep into the ice and take out samples. In these samples there are little bubbles of air which have been preserved there for thousands of years. When the snow falls there is a lot of air trapped. As the snow packs tighter

and tighter together the air has nowhere to go; so it forms little air bubbles in the ice. Scientist look at the different molecules in these bubbles and come up with a chart measuring the different levels of CO2 thousands of years ago.

Scientists have compared ice ages with CO^2 levels and found they match completely! Meaning CO^2 levels have an effect on Climate Change. Therefore we can chart the levels and end up with a good prediction for future years. These charts can then be examined and the British Antarctica Survey can then make recommendations. However everyday life is affecting climate change. For example, plastic is polluting one of the places on Earth that can store CO^2. That is why Emily Shuckburgh and Chris Haughton came together to create a short clip to explain what and how we can help. This included fewer cars and more use of public transport and bikes.

Conclusion
In conclusion, we now know the possible risks of climate change. And that carbon dioxide can cause big long-term damage for the Earth, and may cause many species to become extinct. The many ways we can help include: use less single-use plastic, use fewer cars and more public transport and bikes and reduce use of air-conditioning.

Climate Change is having a big effect on our future.

Please Limit CO² Now

How the original purpose of plastic failed to save animals

Isobel McArthur

Although it may seem inconceivable, Plastic was originally invented to save animals, and stop the use and the trade of ivory. In 1862 a man named Alexander Parkes (from Birmingham) invented the first plastic. However, it was not the type of plastic that most of us use today; this is because the plastic that he made was organic, this making his invention the first organic plastic too. He made his plastic by combining cellulose treated with a solvent and nitric acid. When this solution of materials had been combined, you could heat it, mould it, and it would retain its shape when cooled, like a modern day acrylic plastic. He named this Parkesine.

A few years later in 1886, John Wesley Hyatt combined cellulose with camphor to create celluloid. This was created as a substitute for ivory. Celluloid was mainly used in flexible photographic film. Many other non-synthetic plastics had been invented, but it wasn't until 1907 that the first synthetic plastic had been created. The man that had made this was named Leo Hendrik Baekeland. He called it Bakelite, which is easier to pronounce then its chemical formula name which is polyoxybenzylemethylenglycolanhydride. Leo made this by combining phenol, with formaldehyde under heat, which created a condensation reaction. This created polymer resin. This plastic along with the other non-synthetic versions were used for many things, all replacing ivory and other products. This is where the problem starts.

As plastic started to be used for more and more things it became a slight novelty, In the 1950s people started to use plastic as plates and cups. Because they could be thrown out people saved time and energy due to not needing to wash up after they consumed anything. As it was just thrown away and recycling hadn't begun yet most of this plastic ended up in the ocean. The once ingenious idea had now failed, as it was becoming even more of an issue because ivory production continued, and littering in the ocean had start begun.

Plastic pollution is a growing issue, affecting an abundance of marine and terrestrial life. These animals, especially ones who find their home to be in the ocean, will try to ingest anything even if it doesn't look like food. Up to 80% of Dead Sea turtles have eaten plastic, being the unfortunate cause of their death. Not only can it choke them or suffocate them, if plastic is ingested by an animal it can cause ulcers on the lining of their stomachs. These ulcers are incredibly painful and make the animals not want to eat. Sadly this will make the animal starve to death.

Another rapidly growing issue are nurdles. They may sound unfamiliar but nearly all of our plastic is made by them. They are around the size of a lentil, and are frequently split into our oceans. If an animal swallows these it would be extremely hard to pass and end up blocking their digestive system. Even if we try to help this issue some shocking numbers came out recently. 91% of plastic isn't recycled and reused. Meaning only 9% is. Thankfully, more and more people have taken on board that this isn't just a small issue, Around the coast of many countries, Britain in particular, have arranged voluntary clean up days. Lots of people are getting involved all around the country and it may take some time but slowly it will have an impact. Shops and chain stores are getting the message too, now reducing plastic in packaging. Many fast food and Restaurants are only giving straws across the counter, some not providing any. Small things that anyone could do to help are not accept straws; even if your drink has a lid, you could take it off and drink it like it's a normal cup. Purchasing a wooden or bamboo toothbrush is a

slightly more expensive option but better in the long run. Many things that we use from day to day life are terrible for the environment. Beauty products use an excessive amount of packaging and micro beads. I have received many orders, especially from Amazon using too much paper or bubbles wrap that doesn't need to be there.

20, 0000 elephants a year are being killed in Africa just for their tusks. Fortunately it is now illegal to buy ivory in the UK. It is not the same for other countries. Less fortunate countries don't have access to plastic, forcing them to use ivory for what we once did. Things that we used ivory for consists of, ornaments, jewellery boxes, combs and much more. Nowadays plastic ornaments and jewellery boxes is normal and what most people have. If you are of a higher class then it may seem tacky but plastic is very practical. The only time that ivory isn't illegal is if it is an antique item. Anything made out of ivory before 1947 is classed as an antique piece and is still allowed to be sold. This shows how the original purpose of plastic failed to save animals. Sadly ivory production isn't going to come to a sudden end in the near future. So many organisations and groups have been put together but this still isn't going to stop every poacher in the world from slaughtering innocent elephants.

Plastic pollution is a problem and has many branches of different problems within the main issue. Although Baekeland's idea seemed intelligent at the time, over 100 years on the problem still persists. People don't like to hear about what damage is happening to our wonderful earth. Animals have been on this earth for a lot longer then we have. We are destroying their amazing habitat and using it for ourselves. Conservation is extremely important and we all need to do our part. David Attenborough's blue planet

showed 10.3 million people about this issue yet 10.3 million people haven't all listened. We need to educate everyone about it so they can do their part. The original purpose of plastic failed to save and is murdering animals all across the world.