

# Geography Accelerator Pack

## Introduction

The purpose of this pack is to prepare you with some of the skills that you will need to use in your A level Geography lessons, as well as setting the basic guidance of what we expect from you as you enter the Sixth Form.

This is done so we can get straight on with the course in September and give you the opportunity to independently explore some of the key themes that we study at A level. You will be required to show your work to us on arrival in the Sixth Form so we can gauge accurately and quickly your skills for independent learning and decision-making.

## About the course

The course consists of 8 topic areas, examined across 3 exam papers and an independent investigation carried out at the end of Year 12 and start of Year 13.

**Dynamic Landscapes Topic 1, Tectonic Processes and Hazards** looks at the risk posed by earthquakes and volcanic eruptions, and secondary hazards such as tsunamis. The risk is especially high where tectonic activity interacts with areas of high population density and low levels of development and resilience. **Topic 2, Coastal Landscapes and Change** looks at how coastal systems operate to produce distinctive coastal landscapes, why these are increasingly threatened by both physical processes and human activities and the reasons that a more sustainable approach to managing coastlines is needed worldwide.

**Dynamic Places Topic 3 Globalisation**, focuses on the uneven impacts of economic growth across the world, and how this results in changing opportunities for businesses and people. Inequalities are caused within and between countries as shifts in patterns of wealth occur and this can lead to tensions in communities and pressure on the environment. **Topic 4, Regenerating Places** studies the reasons why some places are economically dynamic whilst others appear to be marginalised. It considers the need to rebrand and regenerate older and often neglected regions of the country and how successful such initiatives are.

**Physical Systems and Sustainability** studied in Year 13 covers two topic areas, **Topic 5, The Water Cycle and Water Insecurity** which looks at the processes that control the circulation of water between land, atmospheric and ocean based stores and issues surrounding water insecurity and approaches to managing water supplies. **Topic 6, The Carbon Cycle and Energy Security** looks at the importance of maintaining a balanced carbon cycle for the health of the planet, our reliance on fossil fuels and the impact of anthropogenic emissions on climate change.

**Human Systems and Geopolitics** is also studied in Year 13 **Superpowers** looks at how are such countries are defined? How does the dominance of superpowers change over

time and what are their impacts on the global economy, global politics and the environment.

The remaining area of study **Global Development and Connections** focuses on **Health, Human Rights and Intervention** looking at traditional definitions of development and how they are challenged by broader ideas based around environmental, social and political quality of life. National and global institutions intervene through development aid and military campaigns which impact upon human health, wellbeing and human rights. Some groups benefit from this, whilst others face increasing inequalities and injustice.

Finally, in the summer term of Year 12 students will begin their **Independent Investigation** where they will work independently to plan and investigate an issue related to the wider specification.

As part of your *Geography* studies you will develop the following key skills and knowledge.

- ✓ Knowledge of locations, places, processes and environments at a range of scales from local to global.
- ✓ The ability to analyse complex interactions at all geographical scales and an appreciation of how they underpin understanding of current world issues.
- ✓ An understanding of the ways in which values, attitudes and circumstances have an impact on relationships between people, place and environment.
- ✓ Confidence and competency in selecting, using and evaluating a range of quantitative and qualitative skills and approaches.
- ✓ An understanding of the role of fieldwork in generating knowledge about the real world.
- ✓ The ability to apply geographical knowledge, understanding and skills to a range of questions and issues.

The following activities and articles have been designed to introduce you to some of the key issues we study at 'A' level.

## Two Studies Now Confirm Extreme Weather Caused by Global Warming

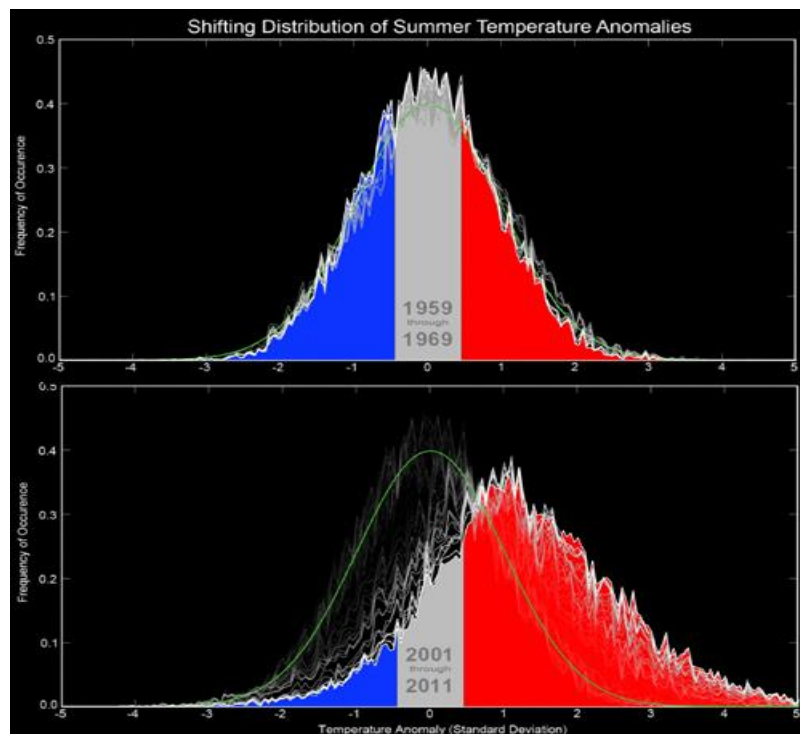
As the NASA Curiosity rover touched down gently on Mars and began its 2+ year observation and exploration of its surrounding terrain, the NASA Goddard Institute of Space Studies announced the publication of a new paper in the journal *Proceedings of the National Academy of Sciences*. I reported on a pre-publication release of this paper back in April and was able to reproduce a much simpler version of the analysis using New York Central Park data in a more recent posting. As demonstrated by Curiosity, NASA is a formidable science based organization and one whose findings should not be taken lightly. An early version of the paper appeared back in March, before the extended heat wave experienced in the USA through most of July.

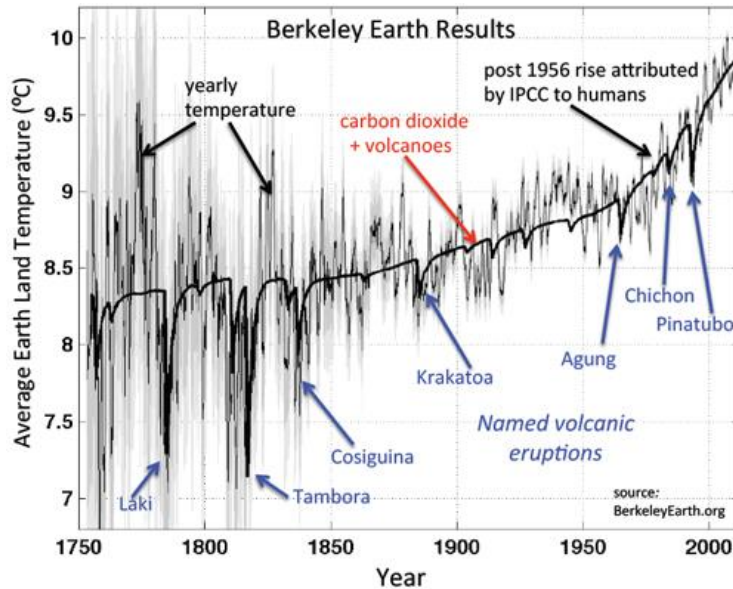
The analysis shows how the distribution of summer temperatures has shifted in recent decades, to the extent that there has been a notable change in the frequency of what were extreme outlying events. This in turn led NASA to assert that “*the recent bouts of extremely warm summers, including the intense heat wave afflicting the U.S. Midwest this year, very likely are the consequence of global warming*”.

As it turns out, July has been confirmed as the single hottest month ever recorded in the continental United States. The average temperature across the Lower 48 was 77.6 °F, 3.3 degrees above the 20th-century average, the National Oceanic and Atmospheric Administration (NOAA) reported. That edged out the previous high mark, set in 1936, by two-tenths of a degree, NOAA said. In addition, the seven months of 2012 to date are the warmest of any year on record and were drier than average as well, NOAA said. U.S. forecasters started keeping records in 1895.

Some of course will question the validity of the data used by NASA GISS, but just days before their announcement came a second release of findings from the Berkeley Earth Surface Temperature

project. They found that the average temperature of the Earth’s land has risen by 1.5 °C over the past 250 years. The Berkeley study noted that the good match between the temperature record and historical carbon dioxide suggests that the most straightforward explanation for this warming is human greenhouse gas emissions. One of their key charts is shown below.

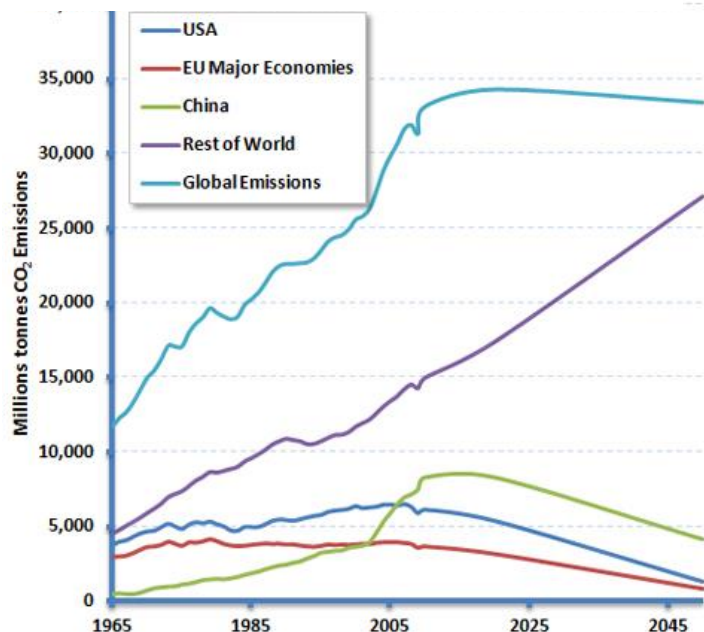




While the analysis from NASA and the data validation from Berkeley will still not satisfy everyone, they will hopefully begin to put to rest the ongoing science controversy that seems to hamper any rational thought about the best approach to actually addressing the issue of rising levels of atmospheric CO<sub>2</sub>.

Since the creation of the UNFCCC 20 years ago after the first Earth Summit, many have lost hope that a multilateral approach can achieve anything, particularly after the setback of Copenhagen (another attempt plagued by science and temperature controversy just as world leaders gathered) and the eventual failure of that process to agree anything substantive in terms of mitigation efforts for the period 2013-2020. Yet it will ultimately only be such a multilateral approach that can eventually tackle the problem of global emissions – not necessarily to dictate to the world how to do it, but to at least set the direction and timetable for what will ultimately be a bottom up approach. No one country, region or industrial sector can solve this unilaterally. Even if the big three, China, the USA and the major EU economies acted alone (with China reaching a plateau in the short term and then reducing by 50% by 2050 and the US and EU reducing by 80% by 2050), global emissions would plateau at best (see chart below) assuming that the rest of the world emissions grew by no more than 1.5% per annum over the next 40 years (in fact they have been growing at well over 2% p.a. over recent decades). So this issue needs a response from all nations.

As the agreement at COP 17 in Durban “to try once again” gains momentum and turns into a full negotiation process it will be important to lay down foundations that might actually deliver a workable outcome. This is a subject that I hope to revisit in a number of posting between now and the end of the year.



# the guardian

## Have the climate sceptics really won?

*Despite recent fears of sceptics winning public debates, they are not all powerful, but have cast a spell upon their opponents*

*By Roger Pielke Jr. - professor of environmental studies in the Centre for Science and Technology Policy Research at the University of Colorado. On Twitter he is @RogerPielkeJr*

Lord Lawson, former Chancellor of the Exchequer and now chairman of climate sceptic thinktank, the Global Warming Policy Foundation. Photograph: Martin Argles

Earlier this week, Martin Wolf of the Financial Times announced that the "climate sceptics have won". His comments echo those of former NASA scientist James Hansen who told an audience in Edinburgh last year that the sceptics "have been winning the public debate with the help of tremendous resources." The action needed in response to this situation was spelt out by Lord Stern – the eponymous author of the well-known 2007 report on the economics of climate change – who once called sceptics "forces of darkness" who had to be "driven back."

Such comments reflect a conventional wisdom in the climate debate. Climate sceptics, or deniers as they are often called, are presented as all-powerful forces bankrolled by rich corporations who have wielded their awesome power to block efforts to deal with the threat of human caused climate change. How do we know that climate sceptics have such power? As Martin Wolf explains, it is the "world's inaction" on climate policy which reveals their power.

From this perspective then, a key challenge of securing action on climate change is to defeat the sceptics – to drive back the forces of darkness so that the forces of good might prevail. Victory will be achieved by winning the battle for public opinion on the state of climate science. However, a closer look at the logic underlying such arguments reveals a chain of causality which scholars of the public understanding of science have long critiqued as the ineffectual "deficit model" of science. Even more troubling, there is reason to believe that the focus of attention by climate campaigners on sceptics actually works against effective action.

The so-called "deficit model" suggests that the public lacks certain knowledge that if it were known properly (so closing the deficit) would lead them to favor certain policy actions. In other words, if only you understood the "facts" as I understand them, then you would come to share my policy preferences.

The deficit model helps to explain why people argue so passionately about "facts" in public debates over policies with scientific components. If you believe that acceptance of certain scientific views is a precondition for, or a causal factor in determining what policy views people hold, then arguments over facts serve as political debate by proxy.

Dan Kahan, professor of psychology at Yale Law School, has conducted several studies of public views on climate change and finds that the causal mechanisms of the "deficit model"

actually work in reverse: people typically "form risk perceptions that are congenial to their values." Our political views shape how we interpret facts. On an issue as complex as climate, there are enough data and interpretations to offer support to almost any political agenda. Thus we have arguments over the degree or lack of consensus among scientists, and see efforts to delegitimise outlier positions in order to assert one true and proper interpretation. Added to the mix is the temptation to push "facts" beyond what science can support, which offers each side the opportunity for legitimate critique of the excesses of their opponents. These dynamics can (and do) go on forever.

In the first half of the 20th century, the American political commentator Walter Lippmann recognized that uniformity of perspective was not necessary for action to take place in democracies. He explained that the goal of politics is not to make everyone think alike, but to help people who think differently to act alike. A vast body of scholarship supports the limitations of the deficit model, yet it remains a defining feature of debates over climate policy today. It is bad enough that those operating under the assumptions of the deficit model are wasting their time, or working against their own interests. What is worse is that such strategies fail to recognize that the battle over public opinion on climate change has long been over – it has been won, decisively in fact, by those favoring action.

Data on public opinion on climate change has been collected, in some cases for several decades, in countries around the world. What it shows is remarkably strong support for the so-called scientific consensus, as well as strong support for policy action. Even in the notoriously climate sceptical United States, Gallup finds: "trends throughout the past decade - and some stretching back to 1989 – have shown generally consistent majority support for the idea that global warming is real, that human activities cause it, and that news reports on it are correct, if not underestimated."

Another Gallup poll of 128 countries in 2007 and 2008 found strong majorities in most countries - including most large emitters of carbon dioxide – believe that global warming is a result of human activities. Public opinion does vary a great deal, often literally with the weather, but it has overall been remarkably consistent over many years in support of action. Far from being an obstacle to action on climate change, public opinion is in fact a resource to be capitalized upon.

Studies of the relationship of public opinion and political action on a wide range of subjects show nothing unique or very interesting about the state of public opinion on climate change. Significant policy action has occurred on other issues with less public support on many occasions (as I documented in my recent book, *The Climate Fix*). Instead of motivating further support for action, efforts to intensify public opinion through apocalyptic visions or appeals to authority, have instead led to a loss of trust in campaigning scientists and a deep politicization of the climate issue. Citing the ample evidence of the ineffectiveness of such approaches, Dan Kahan complains of climate campaigners: "They keep pounding the data, and with a rhetorical hammer that drives home all the symbolism that generates distrust and resistance in larger parts of the population ... Why?"

### **Now consider the question “Why is there disagreement over climate change and its impacts – isn’t it clear cut?”**

Write an answer using evidence from the articles, your existing knowledge on the subject and any other research that you carry out. Make sure that you reference any articles that you use.

As part of the Globalisation unit you will look at the consequences of people and countries being more closely linked together. It is easy to forget that because what we buy is made mainly overseas, our choices as consumers affect the lives of people around the world and the natural environments of countries thousands of miles away. Does any of this matter? Look at the image below and then read about the real 'cost' of some of the items we use on a daily basis.

## 1. Mobile phone

It is a vision from hell. Deep in the Congolese jungle, in an illegal mine that is little more than a hole in the ground, men and young boys are standing on top of each other, scraping earth from the walls. This footage forms one of the most haunting sections of a new documentary which exams the relationship between the minerals used to make mobile phones and the civil war that continues to rage in the Democratic Republic of the Congo in Central Africa. Over the past 15 years, the conflict has cost the lives of more than 5 million people, and 300,000 women have been raped. Armed groups are financed through the sale of these minerals.

In this particular hole they are scraping for cassiterite (tin ore), which now replaces lead in consumer electronics. The holes periodically collapse and the "miners", some of whom are children, die beneath the earth. They risk all of this for little or no financial benefit.

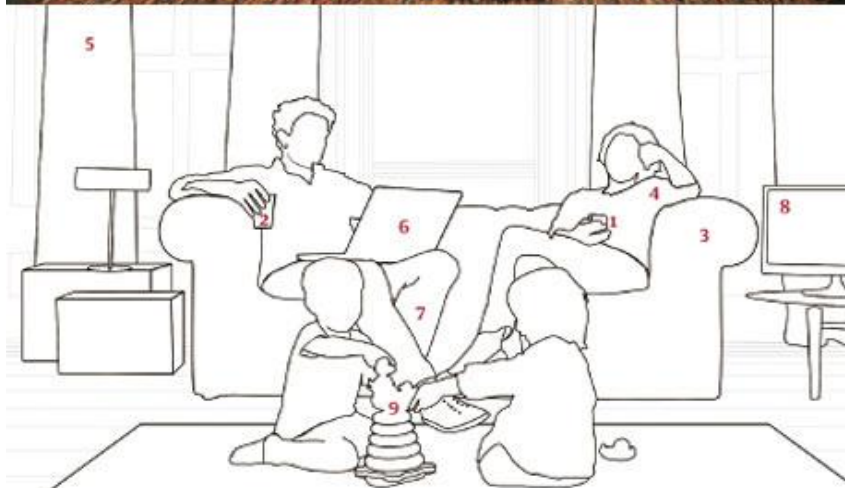
Once the minerals have changed hands (the miners are paid a fraction of the minerals' worth), they are usually flown to the city of Goma in eastern DRC, trucked to Uganda, then on to Mombasa in Kenya, where they are smelted together with minerals from other parts of the globe. The provider of Poulsen's phone is Nokia, the largest manufacturer of mobiles in the world and the self-proclaimed market leader in corporate social responsibility. By its own



admission, for the past decade it has been aware of the link between the minerals it uses and the war in Congo, but it is still unable to sell a phone that is guaranteed to be free of conflict minerals.

### The alternative

Scientists are currently working on being able to fingerprint minerals used in mobiles, but at the moment there are no conflict mineral-free phones available. Keep yours for as long as possible and recycle it if you are getting a new one.



## 2. Coffee

You might be forgiven for thinking campaigns by major chains to prove how enlightened and farmer-friendly they are, bolstered by in-store pictures of smiling coffee growers holding sacks of beans, mean that the gross inequalities exposed in *Black Gold*, the 2006 documentary about the coffee industry, are a thing of the past. But there is much evidence to suggest the lot of most farmers has barely improved or even become worse. Climate problems are causing weather patterns to change, making it difficult to plan seasons.

Ian Agnew, who runs the Black Gold Foundation, which is trying to keep the coffee debate alive, is disappointed by the lack of improvement. "The producers still don't understand the markets," he says. They are being robbed. In Kenya prices hit a high but are already dropping. When farmers see that high, they spend more money producing the crop. But the prices paid to them are on a constant rollercoaster." "We need a deeper look at the supply chain," Agnew says. "The shorter it is, the more of the value goes to the producers." Five years ago, *Black Gold* stated that from a £2 cup of coffee, the producers would scrape around 2p. How does that figure compare today? "It's really about the same."

**The alternative** Fairtrade is a good way in. It's trying to get a better price for producers, Café Direct puts producers in charge of more of the supply chain, allowing them to keep more of the profits.

## 6. Laptops

We tend to think state-of-the-art robots must do the intense, detailed work needed to make our laptops – work that can mean completing the same action every three seconds for hours on end. But why would you bother when human labour is so cheap? While the material and distribution costs are pinned down, the wages of the millions of Chinese workers on the global electronics assembly line are seen as the elastic part of the supply chain where the contractor can make some margin. These workers have been dubbed technoserfs. They live and work in mammoth electronics factories earning a basic wage that cannot sustain them. Workers were left standing for 10 consecutive hours, working at high intensity on assembly lines, and that doesn't include overtime, which many are forced to work. Conditions are degrading – in one instance, factory workers were permitted one 10-minute loo break in the middle of the day, which sparked a virtual stampede to just a few toilets, so that many didn't make it in time.

**The alternative** Part of the pressure put on workers has been traced to the way global brands dictate ferocious production schedules after whipping up consumer frenzy for new devices. Stop buying trend-driven electronics, keep using your old ones for as long as possible and buy secondhand if you need to upgrade. Cheap fast fashion is becoming less palatable as consumers are increasingly aware of how it is made; it's time we put the same thought into electronic purchases.

<http://www.guardian.co.uk/environment/2011/oct/14/environment-home-mobile-phones-laptops>

## Questions

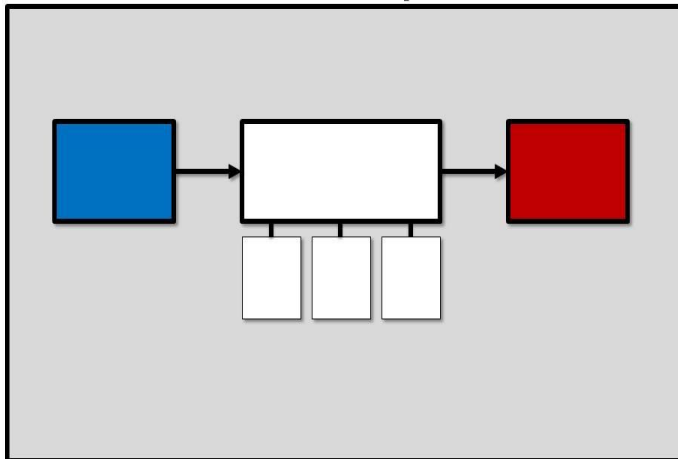
1. To what extent do you think knowing about the conditions in which the goods we buy are produced would change the shopping habits of people in the UK? (You might find it useful to ask several other people to read the article and get their opinions on it)



[https://www.rgs.org/NR/rdonlyres/F9B564E9-6F59-402A-AF45-2F1E5D0935F4/0/CGT\\_NetRaising\\_8Earthquakeconclusion.pdf](https://www.rgs.org/NR/rdonlyres/F9B564E9-6F59-402A-AF45-2F1E5D0935F4/0/CGT_NetRaising_8Earthquakeconclusion.pdf)

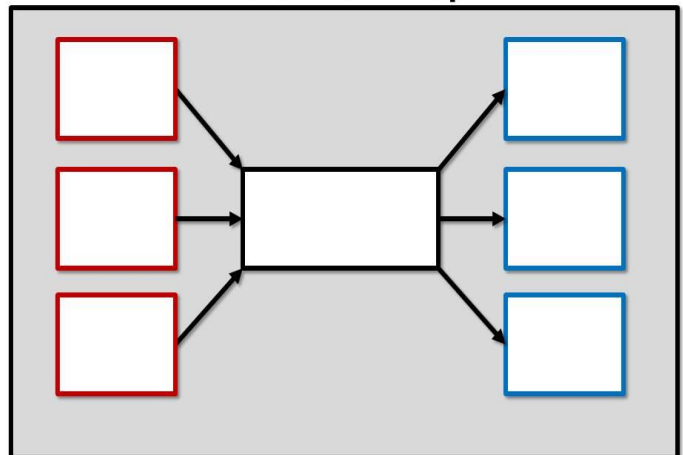
Follow the link above to the article on the Royal Geographical website which considers the factors that determine the impact of an earthquake. Produce a diagram to help you consider how the impacts of an earthquake in an LEDC (LIC) are linked to one another. Use one of the diagrams below to help you organise your ideas.

### Flow Map



*Sequencing*

### Multi-Flow Map



*Cause & Effect*

### OVER TO YOU

Over the remainder of the summer holidays we would like you to write your own blog of geographical news stories. Look out for news about natural disasters, climate change, environmental issues or anything else that has a geographical angle to it.

Rewrite the information in a way that it is easy to understand for someone of your age. You could include maps and pictures as part of your blog and if there is a story that you find particularly interesting you could follow it for a week, updating your blog as the situation changes. You should aim to produce 4 or 5 entries on different topics or several entries for one major event.