



READING IS GOOD IDEA



KING JAMES'S SCHOOL
KNARESBOROUGH

Antarctica LC2 Reading Guided reading task

Year 8 Geography Department Reading homework.



6 Why is ice melt in Antarctica a problem?

7 How many scientific bases are there on Antarctica? Are all countries happy about this?

9 Where do most of the tourists visiting Antarctica come from? Who could make money from tourism in Antarctica?

1 Is Antarctica a continent or a country? Where is it?

2 What is the name of the organisation that meets to discuss issues in Antarctica and what is its role?

3 What kind of topics does the ATS have to discuss?

4 Why is Antarctica so important to the world? What could Antarctica be used for?



The World needs to exploit Antarctica!

Antarctica is a continent with no government. The closest thing it has is a small office with 10 workers in Buenos Aires, Argentina. It is the job of these 10 people who work for the Antarctic Treaty System (ATS) to keep things running smoothly among the 53 nations that together govern Antarctica. "One of the amazing things is that Antarctica is the only continent where people work together for peace and science," says Jane Francis, head of the British Antarctic Survey. However, not everyone does agree on what should happen in Antarctica. At a recent meeting in Argentina there were a growing number of topics that led to disagreements including climate change and fishing. Some of the other things they have to discuss at these meetings include rules for drone use and guidelines for heritage sites (like the hut built by Ernest Shackleton and his team more than 100 years ago). More difficult discussions include what happens when countries break the rules, how tourism should be managed and whether mining and drilling for oil should ever be allowed (at the moment it is banned). At stake is the last pristine continent, one that contains the world's largest store of freshwater, huge potential reserves of oil and gas and the key to understanding how quickly climate change will impact the world through rising sea levels. Antarctica is covered in an ice sheet up to a mile thick and represents a window into how the planet is changing.

Temperatures in some parts of Antarctica are rising much faster than the global average, and the pace of glacial melting there will help determine how quickly global sea levels rise in the future. The number of permanent scientific research stations on the island has grown to more than 75. China has built 4 bases and started building a 5th before it had been properly approved. This made some other countries angry that China is breaking the rules. The Southern Ocean, which surrounds Antarctica, is becoming a significant fishing ground, as resources in other seas are depleted. And it plays a crucial role in absorbing heat and carbon from the atmosphere, in ways that are not yet fully understood. The number of visitors to the region rose to more than 51,000 last season, an increase of 17 per cent on the previous year. That number is expected to keep growing. There are already 33 tour boats and 20 more are being built. For most tourists — who pay between \$10,000 and \$100,000 for a trip — visiting Antarctica involves stepping off the boat at a handful of highly regulated landing sites. But there are loopholes in the system, such as private yachts that flout permitting rules, as well as a growing number of tours that involve activities such as kayaking or skiing. "It's becoming a bit of an adventure playground, and the trouble is the unregulated tourism," says Prof Francis, at the British Antarctic Survey. "It has become much easier for people just to sail their yachts to Antarctica, and to fly their private aircraft to Antarctica."

The fastest-growing source of new visitors last year was China, which was second only to the US in the ranking of total tourists. At the same time Beijing is investing heavily in missions to Antarctica, part of its plan to become a "polar great power". China spends more on its Antarctic research programme than any other country. China is interested in the potential natural resources in Antarctica including gas and oil. At the moment mining is banned but only until 2048 when it might be possible. Having a ground station near the South Pole can increase the accuracy of global satellite navigation systems. Water resources are also important. Cape Town in South Africa has been suffering from severe water shortages and the idea of towing an iceberg from Antarctica to South Africa, to ease the crisis, was discussed. More and more people are fishing krill in the Southern Ocean and China and Russia have opposed the idea of creating a marine 'national park' which will protect the wildlife in the Oceans.

Another controversial issue is bioprospecting — taking biological samples from Antarctica to study in a lab. Species in Antarctica could be valuable to industries. But because no one officially owns any part of Antarctica, who should be able to make money from these species?

1 Which country spends the most on research in the Antarctic? What are they researching? Who could benefit from this research?

1 Why might South Africa need icebergs from Antarctica? Why might a 'national' park in the ocean be a good thing?

1 How much does it cost to go to Antarctica on holiday? What fun activities can you do there?

5 How thick is the ice in Antarctica?

8 Why are more people fishing in Antarctic waters?



6 What is the economic argument NOT to drill for oil? What does 'hypothetical' mean?

7 What is the global argument NOT to look for oil in Antarctica?

9 What are the negative issues surrounding the fishing industry around Antarctica?

1 What key word would you use to describe Antarctica (vocabulary sheet)?

2 What global issues could be made worse if Antarctica is exploited?

3 What would the impact of melting ice be? On the sea and on the land?

4 What does the Antarctic Treaty set out to do? (Additional research opportunity)



The fight to save Antarctica

Antarctica is a pristine and unspoilt continent of great scientific value. In particular, it has a critical impact on the world's environment and ocean systems. This means that it must be left undisturbed, in order to allow further study of such critical international issues as climate change, ozone depletion, long range weather forecasting and the operation of marine eco-systems (crucial to sustainable fishing). It is also essential to ensure that a polluted Antarctica does not undergo changes (e.g. melting of its ice caps, a breakup of its ice sheets) with a potentially disastrous global impact. There is a danger in allowing a scientific elite to set the global agenda, without regard to either economic logic or democratic accountability. If the Antarctic can help to provide additional resources for a rapidly growing world population, then we should be able to have an intelligent debate about the costs and benefits involved. In any case, scientific research does leave a footprint in Antarctica, for example the ice road the Americans are planning to blast and bulldoze through the continent to the bases at the South Pole, or the waste products of the many scientific bases on the continent.

There are many reasons why oil and gas exploration should not be allowed in the Antarctic. Firstly, proven and probable reserves of oil and gas are still rising faster than global consumption, so there is no economic need to exploit any hypothetical Antarctic sources. Secondly, as the continent is already suffering as a result of global warming, our priority should be to find renewable alternatives to fossil fuels rather than to continue our dependence upon them. At a practical level, the cost of exploration and production would be completely uneconomic, especially given the hostile climate and the serious iceberg threats to offshore rigs, tankers and pipelines, as well as the very deep continental shelf. There would also be a serious danger of pollution, both from the increased human presence in this fragile environment, and from oil spills. Fishing is at present allowed under the 1991 Protocol, and has been increasing in recent years as overfishing is exhausting other global fisheries. Although much about the marine eco system of the southern ocean is still unknown, it is clear that overfishing could quickly damage it, and that any recovery could take decades. At present limits are set according to our current understanding of fish stocks, but there is a great deal of illegal activity by boats from a variety of nations, so the

situation is not under control. Even legal fishing can do great damage thousands of seabirds die each year as a result of longline fishing. Not only should we not relax the Antarctic fishing regime, we should probably seek to tighten it further; the less legal fishing is allowed, the easier it will be to spot unlicensed activity. Access to Antarctica should be restricted to those with a serious scientific purpose. Perhaps 27000 tourists are expected in 2004, mostly on cruise ships which call at Antarctic sites for just a few days, but this number is rising rapidly and some visitors are now undertaking adventurous activities such as ski hiking, scuba-diving, snowboarding and mountaineering. Unchecked, this influx of people is greatly increasing the problems of waste management and their activities are having a negative impact on the coastal environment and its wildlife. Adventurous tourists will also need to be rescued by the authorities, diverting resources from science. The more vessels visiting the continent, the greater the chance of catastrophic oil spills or for rogue operators to neglect proper waste management (both already problems in the Alaskan cruise industry). Overall.....

1 How could the problem be tackled?

1 What negative problems do tourists create?

1 Tourism will create a precedent for economic exploitation that may make it harder to defend the unique status of the continent in the future. Do you agree? What is your opinion?

5 In this text what does the word 'footprint' mean?

8 What are the risks to Antarctica in the search for oil?
