



INDIAN SCHOOL AL WADI AL KABIR

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Question Bank	Topic: JOURNEY TO THE END OF THE EARTH	Note: TEXTBOOK – VISTAS

JOURNEY TO THE END OF THE EARTH

(By- Tishani Doshi)

Introduction

In 'Journey to the End of the Earth' Tishani Doshi describes the journey to the coldest, driest and windiest continent in the world: Antarctica. The world's geological history is trapped in Antarctica. Geoff Green's 'Students on Ice' programme aims at taking high school students to the ends of the world. Doshi thinks that Antarctica is the place to go and understand the earth's present, past and future.

Summary of the lesson

Beginning of Journey- The narrator boarded a Russian research ship-The 'Akademik Shokalskiy'. It was heading towards the coldest, driest and the windiest continent in the world, Antarctica. His journey began 13.09 degrees north of the Equator in Madras (Chennai). He crossed nine time zones, six checkpoints, three bodies of water and at least three ecospheres. He travelled over 100 hours in car, aeroplane and ship to reach there. **Southern Supercontinent (Gondwana)-** Six hundred and fifty million years ago a giant southern supercontinent Gondwana did indeed exist. It is centered roughly around present-day Antarctica. Human beings hadn't arrived on the global scene. The climate at that time was much warmer. It supported a huge variety of flora and fauna. When the dinosaurs became totally extinct and the age of mammals began, the landmass was forced to separate into countries as they exist today. **Study of Antarctica-**The purpose of the visit was to know more about Antarctica. It is to understand the significance of Cordilleran folds and pre -Cambrian granite shields; ozone and carbon; evolution and extinction. Ninety per cent of the earth's total ice volumes are stored in Antarctica. Icebergs are as big as countries. Days go on and on in 24-hour austral summer light. **Human Impact-** The most hotly contested debate of our time is whether West Antarctica Ice sheet will melt entirely or no. If we want to study the earth's past, present and future, Antarctica is the place (for us) to go. Antarctica has a simple eco-system and lacks of biodiversity. It is the perfect place to study how little changes in the environment can have big repercussions (results) . Scientists warn that a further depletion of the ozone layer will affect the lives of the sea-animals and birds of the region. It will also affect the global carbon cycle. The burning of fossil fuels has polluted the atmosphere. It has created a blanket of carbon dioxide around the world. It is increasing the global temperature which is visible at Antarctica when we see ice bergs melting away. It shows how minor changes in the atmosphere can cause huge effect. If the global temperature keeps on increasing the human race may be in peril. "Students on ice" is a programme which provides the students an ample opportunity to understand how global temperature can be a big threat to human existence. It inculcates a new understanding in them. Geoff Green thinks that high school students are the future policy makers. They can help in saving the earth from ecological

dangers and the effects of global warming. Effect of Climatic Change- The author gives us an example to show how small changes in the atmosphere can be threatening. The microscopic phytoplanktons are single celled plants. They nourish

The entire Southern Ocean's food chain. They use the sun's energy to assimilate carbon and supply oxygen. Any further depletion in the ozone layer may affect this functioning and indirectly affect the lives of all marine animals. Walk on the Ocean -It was the most thrilling experience of the visit. They climbed down the gangplank and walked on the ocean. They were 52 persons. They were walking on a meter-thick ice-pack. Under the ice pack there was 180 meters of living, breathing, salt water. Seals were enjoying themselves in the sun on ice. The narrator was wondering about the beauty of the place. He wished it would not become a warm place as it used to be millions of years ago. If it happens, the results can be ruinous.

Gondwana: About 650 million years ago, Gondwana was a supercontinent. It was warm and many species of flora and fauna prospered there. But there were no humans then. But around the time when dinosaurs were wiped out, Gondwana began to break up. India pushed against Asia and buckled its crust to form the Himalayas. South America drifted to join North America, opening up the Drake Passage. It created a cold current that went around the South Pole. It left Antarctica cold and isolated.

Importance of Antarctica: The Antarctica is now a part of that history. It helps us to understand where we came from and where we are going. It helps us to understand the significance of Cordilleran folds and Precambrian and extinction. Antarctica has remained unspoiled by humans. Its ice-cores hold half-a-million-year-old carbon record. It helps us to examine Earth's past, present, and future.

Antarctica is a huge expanse of ice. It is all barren. There are no human markers. There are no trees, buildings or billboards. There are huge icebergs. There are blue whales. But there are very tiny things too. There are no mornings, noons, evening and nights- 24-hour austral summer light. There is silence everywhere. So, you lose all earthly sense of time and space.

Human civilization is only 12,000 years old. It is only a few seconds old on the geological clock. But during this short period, man has caused much confusion. He has built towns and cities. He has wiped out many other species to grab limited natural resources. By burning fossil, man has created a blanket of carbon dioxide around the world. This is raising the global Temperature.

This rise in temperature has caused climate changes. It is the most hotly debated question. Many scientists foretell disaster.

Antarctica is the place to see the impact of these changes. Because it has a simple ecosystem, a little change in the environment can trigger a big effect. Take, for an example the microscopic phytoplankton. They are single-celled plants. Through photosynthesis, they assimilate carbon to form organic compounds. They sustain the entire food chain in the southern oceans. They regulate the global carbon cycle. Any further depletion of an ozone layer will cripple phytoplankton. If they did not function, the entire food chain and global carbon cycle would collapse.

Students on Ice is a programme headed by Canadian Geoff Green. He has chosen to take students to the end of the world, the Antarctica. He wants to provide young students with an opportunity to understand and respect the planet. Students are young. They are ready to absorb, learn and act. They can actually see the effect of global warming. They see glaciers retreating and ice shelves collapsing. They cannot remain unaffected. They can see the threat is real. They are the future policy makers. They have idealism. They will act.

Important Questions and Answers

Q1. What is Antarctica?

Ans. Antarctica is southern continent of the earth. It is the driest, coldest and windiest continent.

Q2. What is 'Students on Ice?' (Imp)

Ans. 'Students on Ice' is an educational journey to Antarctica. It takes high school students to show them the terrifying impacts of human activities in Antarctica so that, the students (future policy

makers of the earth) will realize that the end of the earth is quite near and therefore something should be done to save the planet.

Q3. Why did Geoff Green decide to take high school students to Antarctica?

Ans. Geoff Green didn't find any good in taking curious celebrities to Antarctica until he thought of taking high school students. He believed the young enthusiasm in them would easily understand the seriousness of the threat that poses the earth by visiting Antarctica and they would act their bit to save the planet from further deterioration.

Q4. Why is Students on Ice Program a success?

Ans. When one stands in the midst of the calving ice-sheets and retreating glaciers and melting icebergs, he realizes that the threats to the earth are real. It is different from talking about Antarctica from the comfort zones of our warm countries and therefore being in Antarctica is a shocking realization.

Q5. Why the youngsters are called the future policy makers of the earth?

Ans. The youngsters are called the future policy-makers because it is they who will steer the government-machine as they grow up. More than that, the more educated youth of today is the hope for the earth as many students are more informed and more aware of the weakening strength of the planet.

Q6. What lessons are we able to learn from Antarctica?

Ans. While in Antarctica, we can see ice-sheets breaking, water level rising, seals taking sun bath on the ice-floes. We can also walk on the thin layers of ice and feel the life under our feet. We can see icebergs as big as a small country. We will be shocked to hear that these ice sheets were many times bigger than present size a few years ago. You will see a green patch of phytoplankton – a microscopic grass that feeds the entire marine life. Last of all, if you dig a bit, you will be lucky to see the fossils of half a million-year-old animals, plants and birds that got killed in the previous ice-age. From all this, we are able to learn the lesson of the death of the planet earth.

Q7. What are phytoplankton's? How are they important for the earth's survival? What does the parable of phytoplankton teaches us? (Imp)

Ans. Phytoplankton is a single-celled grass that feed the entire southern ocean's marine life. These microorganisms require a low degree of temperature for their survival. But due to the overheating and the depletion of ozone layers, their existence is threatened. The message for the humans is to take care of the small things so that the bigger things will also fall in place.

Q8. How is Antarctica significant in climatic debates?

Ans. Antarctica is a continent that has a landmass with miles deep ice, layers over layers. In each of those layers lie millions of years old carbon records of the organisms that existed since the beginning of the earth. While pondering over the issue of the future of the earth, these carbon records will shed light on the past and enable the scientist to co-relate the past, present and future.

Q9. How do geological phenomena help us to know about the history of humankind?

Ans. Geological phenomena certainly help us to know about the history of humankind. A giant southern supercontinent- Gondwana did exist 650 million years ago. The climate was much warmer. It had a huge variety of flora and fauna. Gondwana thrived for 500 million years. Finally, it broke to

separate countries as they exist today. It was the stage when dinosaurs were wiped out and the age of mammals started.

Q10. What are the indications for the future of humankind?

Ans. Rapid human population growth and limited resources exert pressure on land. Burning of fossil fuels has only helped in increasing the average global temperature. Melting of ice-caps, depletion of the ozone layer and global warming are the real and immediate dangers for mankind. They will affect the lives of all the marine animals and the birds of the region.

Q11. 'The world's geological history is trapped in Antarctica: How is the study of this region useful to us? (Imp)

Ans. The study of Antarctica shows that India and Antarctica were part of a supercontinent named Gondwana. This supercontinent exists 650 million years ago. The climate of Gondwana was much warmer. It fostered a huge variety of flora and fauna. Then about 150 million years ago, dinosaurs were wiped out. The age of mammals started. Gondwana was forced to separate into countries. The globe was shaped much as we know it today. A cold circumpolar current was created. It made Antarctica frigid. Thus, we can say that the world's geological history is really trapped in Antarctica.

Q12. Why is Antarctica the place to go to, to understand the earth's present, past and future? (Imp)

Ans. **Introduction:** If we want to study and examine the Earth's present, past and future, there is the only place that is Antarctica.

Reason: To visit Antarctica is to be a part of the earth's past history. We come to know that about 650 million years ago there was a giant super-continent in the south. It was called Gondwana. India and the Antarctica were parts of the same landmass-Gondwana. Things were quite different then. Human had not arrived on the earth. The climate of Antarctica was much warmer. It had a huge variety of flora and fauna. Dinosaurs became extinct. The age of mammals started. The landmass was forced in to be separated into countries as they exist today.

The study of Antarctica also helps us to understand the earth's present and future as well. Geological history is trapped. Here in Antarctica we can study the earth's past. About 90 percent of the earth's total ice is stored here. There are no trees, buildings or other human settlements in Antarctica. Here we see glaciers melting and ice-caps falling. We can relate them to the results of global warming. Antarctica also warns us for the future. It warns the end of the world if the west Antarctica ice sheet melts entirely, and the Gulf Stream ocean current is disrupted. What will happen if the global warming results in constant melting of icebergs? It will bring disastrous results. The further depletion (decadence) of ozone layer will affect sea animals, vegetation (plants and trees) and humans very adversely (undesirably).

Conclusion: There is no place in the Earth except Antarctica where we can find the records of present, past and future. Thus, Antarctica is the perfect place to go to, to understand the earth's present, past and the future.