

CHAPTER 3

Journey to the end of the Earth by Tishani Doshi

About the Author :

Tishani Doshi (born on 9 December 1975) is multi-talented. She is a poet, journalist and dancer based in Chennai.

She studied in the US before returning to India, where she also trained in dance . Her book of poems and novels have received a lot of praise worldwide.

She is especially inspiring for young readers. Through her writing and performances, she shows how creativity can cross boundaries, making her an inspiring figure for young people learning to express themselves.



KEY THEMES IN THE LESSON :

1. Climate Change and Environmental Awareness

- Antarctica serves as a natural indicator of global warming.

2. Human Impact on Nature

- The lesson shows how human activities are harming even the most remote parts of the Earth.

3. Interconnectedness of Life

- Everything on Earth is connected — what happens in Antarctica affects the rest of the world.

4. The Significance of Antarctica

- Antarctica is important for scientific research and understanding Earth's history. It helps us study past climates and predict future environmental changes.

5. Learning Beyond the Classroom

- The student expedition highlights experiential learning to create deeper understanding and responsibility.

BRIEF SUMMARY :

The lesson is a travel narrative in which the author, Tishani Doshi, describes her journey to Antarctica as part of a student expedition. She presents Antarctica as a place that is geographically remote, but deeply significant for understanding the Earth's past, present, and future.

She explains how Antarctica was once part of the supercontinent Gondwana, where life existed in abundance. Over millions of years, it drifted to its current position and became a cold, isolated land.

Through her experiences, the author reflects on the importance of Antarctica in studying climate change. The region acts like a "warning signal" for the rest of the world, showing how human activities are affecting the environment. The melting ice and changing ecosystem highlight the urgent need to protect the environment. The visit becomes a learning experience for students, helping them understand their role in protecting the planet. The lesson encourages them towards responsible behaviour and sustainable living.

Some Interesting Photographs :

Formation of Continents on Earth

<https://youtu.be/uLahVJNnoZ4>

Antarctica on the World Map

<https://ontheworldmap.com/antarctica/antarctica-location-map.html>

NCERT TEXT BOOK : JOURNEY TO THE END OF THE EARTH

Before you read :

If you want to know more about the planet's past, present and future, the Antarctica is the place to go to. Bon Voyage!

This note is an invitation, encouraging the reader to see this journey not just as travel, but as a meaningful exploration of our planet.

It highlights the unique importance of Antarctica as a place where all three dimensions of time—past, present, and future—come together.

Past: The continent holds evidence of Earth's ancient history, when it was part of Gondwana and supported life.

Present: It reflects the current state of the planet, especially the effects of climate change.

Future: Changes seen in Antarctica act as warnings, helping us predict what may happen to the rest of the world.

EARLY this year, I found myself aboard a Russian research vessel — the Akademik Shokalskiy — heading towards the coldest, driest, windiest continent in the world: Antarctica. My journey began 13.09 degrees north of the Equator in Madras, and involved crossing nine time zones, six checkpoints, three bodies of water, and at least as many ecospheres.

By the time I actually set foot on the Antarctic continent I had been travelling over 100 hours in combination of a car, an aeroplane and a ship; so, my first emotion on facing Antarctica's expansive white landscape and **uninterrupted blue horizon** was relief, followed up with an immediate and profound wonder. Wonder at its immensity, its isolation, but mainly at how there could ever have been a time when India and Antarctica were part of the same landmass.

Note : uninterrupted blue horizon - vast, endless stretch where the sky and land (or sea) meet, with no obstacles or breaks in between

Part of history

Six hundred and fifty million years ago, a giant amalgamated southern supercontinent — Gondwana — did indeed exist, centred roughly around the present-day Antarctica. Things were quite different then: humans hadn't arrived on the global scene, and the climate was much warmer, hosting a huge variety of flora and fauna. For 500 million years Gondwana thrived, but around the time when the dinosaurs were wiped out and the **age of the mammals got under way**, the landmass was forced to separate into countries, shaping the globe much as we know it today.

Note : age of the mammals got under way - refers to the start of the period when mammals started to grow, develop, and become the dominant form of life on Earth.

Read and Find Out :

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

Geological phenomena act like a record of the Earth's past. By studying these – like Rock Layers (sediments), Fossils, Ice Cores & Volcanic Deposits, we understand how the Earth evolved and how changing conditions influenced the development and survival of early human life.

To visit Antarctica now is to be a part of that history; to get a grasp of where we've come from and where we could possibly be heading. It's to understand the significance of Cordilleran folds and pre-Cambrian granite shields; ozone and carbon; evolution and extinction. When you think about all that can happen in a million years, it can get pretty mind-boggling. Imagine: India pushing northwards, jamming against Asia to buckle its crust and form the Himalayas; South America drifting off to join North America, opening up the Drake Passage to create a cold circumpolar current, keeping Antarctica frigid, desolate, and at the bottom of the world.

For a sun-worshipping South Indian like myself, two weeks in a place where 90 per cent of the Earth's total ice volumes are stored is a chilling prospect (not just for circulatory and metabolic functions, but also for the imagination). It's like walking into a giant ping-pong ball devoid of any human markers — no trees, billboards, buildings. You lose all earthly sense of perspective and time here. The visual scale ranges from the microscopic to the mighty: midges and mites to blue whales and icebergs as big as countries (the largest recorded Journey to the end of the Earth was the size of Belgium). Days go on and on and on in surreal 24-hour austral summer light, and a ubiquitous silence, interrupted only by the occasional avalanche

or calving ice sheet, consecrates the place. It's an immersion that will force you to place yourself in the context of the earth's geological history. And for humans, the prognosis isn't good.

Human impact

Human civilisations have been around for a paltry 12,000 years — barely a few seconds on the geological clock. In that short amount of time, we've managed to create quite a ruckus, **etching our dominance over Nature** with our villages, towns, cities, megacities. The rapid increase of human populations has left us battling with other species for limited resources, and the unmitigated burning of fossil fuels has now created a blanket of carbon dioxide around the world, which is slowly but surely increasing the average global temperature.

Read and Find Out :

What are the indications for the future of humankind?

The signs from Antarctica are a clear warning for the future of humankind. Rising temperatures, melting ice, and disturbed ecosystems indicate the serious impact of human activities and the risk it poses to life on Earth, while also reminding us that timely action can still make a difference.

Note : **etching our dominance over Nature** - humans imposing themselves on nature / changing and affecting nature, sometimes without respecting its balance.

Climate change is one of the **most hotly contested environmental debates of our time**. Will the West Antarctic ice sheet melt entirely? Will the Gulf Stream ocean current be disrupted? Will it be the end of the world as we know it? Maybe. Maybe not. Either way, Antarctica is a crucial element in this debate — not just because it's the only place in the world, which has never sustained a human population and therefore remains relatively 'pristine' in this respect; but more importantly, because it holds in its ice-cores half-million year-old carbon records trapped in its layers of ice. If we want to study and examine the Earth's past, present and future, Antarctica is the place to go.

Note : **most hotly contested environmental debates of our time** - environmental issues that people strongly argue and disagree about today.

Students on Ice, the programme I was working with on the Shokalskiy, aims to do exactly this by taking high school students to the ends of the world and providing them with inspiring educational opportunities which will help them foster a new understanding and respect for our planet. It's been in operation for six years now, headed by Canadian Geoff Green, who got tired of carting celebrities and retired, rich, curiosity-seekers who could only 'give' back in a limited way. With Students on Ice, he offers the future generation of policy-makers a life-changing experience at an age when they're ready to absorb, learn, and most importantly, act.

The reason the programme has been so successful is because it's impossible to go anywhere near the South Pole and not be affected by it. It's easy to be blasé about polar ice-caps melting while sitting in the comfort zone of our respective latitude and longitude, but when you can visibly see glaciers retreating and ice shelves collapsing, you begin to realise that the threat of global warming is very real.

Antarctica, because of her simple ecosystem and lack of biodiversity, is the perfect place to study how little changes in the environment can have big repercussions. Take the microscopic phytoplankton — those grasses of the sea that nourish and sustain the entire Southern Ocean's food chain. These single-celled plants use the sun's energy to assimilate carbon and synthesise organic compounds in that wondrous and most important of processes called photosynthesis. Scientists warn that a further depletion in the ozone layer will affect the activities of phytoplankton, which in turn will affect the lives of all the

marine animals and birds of the region, and the global carbon cycle. In the parable of the phytoplankton, there is a great metaphor for existence: take care of the small things and the big things will fall into place.

Walk on the ocean

My Antarctic experience was full of such epiphanies, but the best occurred just short of the Antarctic Circle at 65.55 degrees south. The Shokalskiy had managed to wedge herself into a thick white stretch of ice between the peninsula and Tadpole Island which was preventing us from going any further. The Captain decided we were going to turn around and head back north, but before we did, we were all instructed to climb down the gangplank and walk on the ocean. So there we were, all 52 of us, kitted out in Gore-Tex and glares, walking on a stark whiteness that seemed to spread out forever. Underneath our feet was a metre-thick ice pack, and underneath that, 180 metres of living, breathing, salt water. In the periphery Crabeater seals were stretching and sunning themselves on ice floes much like stray dogs will do under the shade of a banyan tree. It was nothing short of a revelation: everything does indeed connect.

Nine time zones, six checkpoints, three bodies of water and many ecospheres later, I was still wondering about the **beauty of balance in play on our planet**. How would it be if Antarctica were to become the warm place that it once used to be? Will we be around to see it, or would we have gone the way of the dinosaurs, mammoths and woolly rhinos? Who's to say? But after spending two weeks with a bunch of teenagers who still have the idealism to save the world, all I can say is that a lot can happen in a million years, but what a difference a day makes!

Note : *beauty of balance in play on our planet* - refers to the perfect harmony and balance between different elements of nature that keep life on Earth stable and safe

Vocabulary :

1. Vessel: a ship or large boat

The **vessel** carried people across the cold waters.

2. Checkpoints: places where people or goods are checked

They had to pass through several **checkpoints** during the journey.

3. Ecospheres: natural systems where living and non-living things interact

Climate change is making our **ecospheres** fragile.

4. Expansive: wide and covering a large area

They tried to find their friend in the **expansive** forest.

5. Profound: very deep or meaningful

The experience had a **profound** impact on him.

6. Immensity: the great size or vastness of something

They were amazed by the **immensity** of the ocean.

7. Amalgamated: combined or mixed together

Different ideas were **amalgamated** to form a better plan.

8. Supercontinent: a large landmass made of joined continents

There is scientific evidence proving a **supercontinent** existed millions of years ago.

9. Flora and fauna: plants and animals of a region

The region is rich in **flora and fauna**.

10. Granite shields: large areas of exposed ancient rock

The land is made up of old **granite shields**.

11. Circumpolar current: a continuous flow of ocean water (current) around the poles

The **circumpolar currents** affect the global climate.

12. Desolate: empty and without life

The land looked **desolate** and abandoned.

13. Chilling prospect: something that causes fear or worry

Climate change is a **chilling prospect**.

14. Devoid: completely lacking

The desert is **devoid** of any trees.

15. Midges and mites: very small insects

The air was full of **midges and mites**.

16. Austral: relating to the southern region

They studied the **austral** climate.

17. Ubiquitous: found everywhere

Plastic waste has become **ubiquitous**.

18. Avalanche: a sudden fall of snow or rocks

An **avalanche** blocked the path.

19. Calving: breaking off of ice from a glacier

The glacier was **calving** into the sea.

20. Consecrates: makes something sacred or special

The event **consecrates** the place as important.

21. Prognosis: a prediction about what will happen

The weather **prognosis** was not good.

22. Paltry: very small or insufficient

They received a **paltry** amount of support.

23. Etching: marking something deeply or leaving a lasting impression

Human activity is **etching** its negative impact on the environment.

24. Unmitigated: complete and not reduced

The disaster was an **unmitigated** loss.

25. Pristine: clean and untouched

The lake remained **pristine**.

26. Carting: carrying something from one place to another

They were **carting** supplies across the area.

27. Blasé: not caring much

He seemed **blasé** about the achievement.

28. Polar ice-caps: large areas of ice at the poles

The **polar ice-caps** are melting.

29. Retreating: moving back or shrinking

The glaciers are **retreating** rapidly.

30. Ice shelves: thick floating platforms of ice

The **ice shelves** are breaking apart.

31. Biodiversity: variety of plants and animals

The forest has rich **biodiversity**.

32. Repercussions: consequences of an action

Pollution has serious **repercussions** on our health.

33. Assimilate: to absorb and use

Green plants **assimilate** carbon during photosynthesis.

34. Synthesise: to combine

Students learn to **synthesise** information.

35. Organic compounds: chemical substances found in living things

Plants produce **organic compounds** like proteins.

36. Depletion: reduction in amount

There is a rapid **depletion** of natural resources.

37. Parable: a simple example with a moral lesson

The teacher told a **parable** about honesty.

38. Epiphanies: sudden realisations

He had many **epiphanies** during the journey.

39. Wedge: to force into a tight space

He tried to **wedge** the box into the corner.

40. Peninsula: land surrounded by water on three sides

India is a **peninsula**.

41. Gangplank: a movable bridge to board a ship

They walked up the **gangplank** to enter the ship.

42. Kitted out: fully equipped

The team was **kitted out** for the trip.

43. Periphery: outer edge

They stood at the **periphery** of the crowd.

44. Ice floes: large floating pieces of ice

The boat moved through **ice floes**.

45. Revelation: a surprising discovery

It was a **revelation** to learn the truth.

46. Idealism: belief in high values and hopes

His **idealism** made him want to help others.

[Listen to the story.](#)

Click on the link below to hear the story being read. Note the pronunciation of the words .

<https://www.youtube.com/watch?v=VW0n-9jO29c>

NCERT - TEXT-BOOK Q&A :

Reading with Insight

1. 'The world's geological history is trapped in Antarctica.' How is the study of this region useful to us?
2. What are Geoff Green's reasons for including high school students in the Students on Ice expedition?
3. 'Take care of the small things and the big things will take care of themselves.' What is the relevance of this statement in the context of the Antarctic environment?
4. Why is Antarctica the place to go to, to understand the earth's present, past and future?

BOARD QUESTIONS - PATTERN / MOST REPEATED QUESTIONS - These come again and again in different forms:

1. ★ Theme & Central Idea Based
2. ★ Value-Based / Analytical Questions
3. ★ Geoff Green's personality
4. ★ Value/message-based

5. ☆ Case based / Extract based
6. ☆ Inference-based questions
7. ☆ Higher Order questions

QUESTION BANK FOR REVISION :

- ✓ MCQs
- ✓ Extracts
- ✓ Case-based
- ✓ Short + Long answers
- ✓ Higher-order questions

MCQs :

1. The phrase “end of the Earth” most closely suggests:

- A. A place beyond human reach
- B. A geographical extreme with deeper significance
- C. A barren land with no life
- D. The southernmost inhabited region

2. What is the underlying implication of the statement “Take care of the small things...”?

- A. Small actions are easier to manage
- B. Minor issues are often ignored
- C. Ecological balance depends on the smallest components
- D. Big problems solve themselves over time

3. . Geoff Green’s initiative reflects his belief that :

- A. Students learn best through textbooks
- B. Environmental awareness should begin early
- C. Only scientists can understand Antarctica
- D. Travel is essential for education

4. Why does the author emphasize the ‘pristine’ nature of Antarctica?

- A. To contrast it with polluted urban spaces
- B. To show its inaccessibility
- C. To highlight its tourism value
- D. To stress its economic importance

5. The connection between past and present in the lesson is mainly established through:

- A. Travel experiences
- B. Geological and climatic evidence
- C. Personal reflections
- D. Student interactions

6. Which of the following best explains Antarctica as a “warning signal”?

- A. It is difficult to access
- B. It reflects early signs of global environmental changes
- C. It has extreme weather conditions
- D. It is politically neutral

7. The closing impression of the lesson leaves the reader with:

- A. A sense of fear about nature
- B. Curiosity about Antarctica
- C. A call for awareness and responsibility
- D. Doubt about climate change

8. The author’s journey can be interpreted as:

- A. A geographical exploration
- B. A historical study
- C. A scientific investigation
- D. A personal and intellectual awakening

Extract Based

Extract 1 :

Six hundred and fifty million years ago, a giant amalgamated southern supercontinent — Gondwana — did indeed exist, centred roughly around the present-day Antarctica. Things were quite different then: humans hadn’t arrived on the global scene, and the climate was much warmer, hosting a huge variety of flora and fauna.

- I. What is the significance of reference to Gondwana by the author ?
- II. “Six hundred and fifty million years ago, a giant amalgamated southern supercontinent — Gondwana — did indeed exist “ - What does this statement tell us about the Earth’s past?
- III. How does this extract connect to the main theme of the lesson?
- IV. What deeper message about time and human existence can be inferred from this reference?

Extract 2

“Human civilisations have been around for a paltry 12,000 years — barely a few seconds on the geological clock. In that short amount of time, we’ve managed to create quite a ruckus, etching our dominance over Nature”

- I. What contrast is the author drawing in this extract? What is its significance?
- II. Discuss the significance of the author’s opinion - “we’ve managed to create quite a ruckus, etching our dominance over Nature”
- III. What inference can be made about human progress from this statement?
- IV. How does this extract deepen the message of the lesson ?

Extract 3

Students on Ice, aim to take high school students to the ends of the world and provide them with inspiring educational opportunities which will help them foster a new understanding and respect for our planet. The reason the programme has been so successful is because it’s impossible to go anywhere near the South Pole and not be affected by it.

- I. How does the Ice program benefit students ?
- II. Why does the author see young people as key to environmental change?
- III. What does the author suggest about the effectiveness of experiential learning?
- IV. Discuss “it’s impossible to go anywhere near the South Pole and not be affected by it.”

CASE BASED Qs

1. Read the case and answer the questions:

There is a great metaphor for existence: take care of the small things and the big things will fall into place.

- a. Explain this case in context of the lesson.
- b. How can this case be applied in a broader way to daily life?
- c. What does this idea reveal about ecological balance?

2. Read the case and answer the questions:

Antarctica reflects early signs of climate change through melting ice and changing ecosystems. Scientists study it to understand future global impacts.

- a. Why is Antarctica called a “warning signal”?
 - A. It is difficult to explore
 - B. It reflects early environmental changes
 - C. It is politically neutral
 - D. It has extreme weather

- b. What does this suggest about the future?**
- A. Change is unlikely
 - B. Only Antarctica will be affected
 - C. Global consequences may follow
 - D. Climate change is reversible
- c. How does this idea connect to human responsibility?**
- A. Humans cannot control nature
 - B. Humans must act to reduce impact
 - C. Nature will restore itself
 - D. Responsibility lies with scientists

Short Answer Qs :

- I. What is Gondwana? Why is it important?
- II. What is the significance of phytoplankton in the Antarctic ecosystem?
- III. What do ice cores reveal?
- IV. What was the aim of the 'Students on Ice' programme?
- V. What message does the author convey through her journey to Antarctica?
- VI. What are Geoff Green's views on education and young people?

Long Answer Qs :

- 1. What role does Antarctica play in understanding the Earth's past, present, and future?
- 2. Discuss the title "Journey to the end of the Earth" ?
- 3. "The world's geological history is trapped in Antarctica." Explain.

Higher Order Questions :

1. How can human beings contribute to protecting the planet, as suggested in the lesson?
2. What are the indications for the future of humankind?
3. Do you think visits like 'Students on Ice' can create real change? Give reasons.
4. How does the lesson encourage critical thinking about globalization and development?