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To: IELTS Prep Group  
Subj: IELTS Reading lesson 9-21-2016

## Lesson Objective

The student shall be able to use “power words” as part of their oral vocabulary, read and comprehend both social and business language and demonstrate effective oral communication skills

## Section One

### Vocabulary

#### Evaluation Criteria

- Ability to understand definitions of English vocabulary

#### MATCH THE WORD WITH THE CORRECT DEFINITION

VOCABULARY	DEFINITIONS
1. <b>DROUGHT</b> (Noun)	<b>A.</b> the introduction of harmful substances or products into the environment:
2. <b>POLLUTION</b> (Noun)	<b>B.</b> A public display, as of the work of artists or artisans, the products of farms or factories, the skills of performers, or objects of general interest.
3. <b>RESERVOIR</b> (Noun)	<b>C.</b> existing or being everywhere, especially at the same time; omnipresent:
4. <b>LANDSCAPE</b> (Noun)	<b>D.</b> an imagined or projected sequence of events, especially any of several detailed plans or possibilities:
5. <b>EXHIBITION</b> (Noun)	<b>E.</b> To simulate (a process, concept, or the operation of a system), commonly with the aid of a computer.
6. <b>UBIQUITOUS</b> (Adjective)	<b>F.</b> The gaseous envelope surrounding the earth; the air.
7. <b>FOSSILS</b> (Noun)	<b>G.</b> Any remains, impression, or trace of a living thing of a former geologic age, as a skeleton, footprint, etc.
8. <b>ATMOSPHERE</b> (Noun)	<b>H.</b> A section or expanse of rural scenery, usually extensive, that can be seen from a single viewpoint.
9. <b>MODEL</b> (Verb)	<b>I.</b> A natural or artificial place where water is collected and stored for use, especially water for supplying a community, irrigating land, furnishing power, etc.
10. <b>SCENARIO</b> (Verb)	<b>J.</b> A period of dry weather, especially a long one that is injurious to crops.

## Section Two

### Reading Comprehension and Pronunciation skills.

#### Evaluation Criteria

- Ability to effectively read and comprehend written English in a social or business environment.

#### ARTICLE 1

#### WATER STORIES — THE GLOBAL WATER CRISIS IN PICTURES

##### Source

1. Since 2011, Brooklyn-raiser photographer Mustafah Abdulaziz has traveled to nine countries for his long-term photographic project, Water, highlighting the global water crisis. This summer, he focused on New York’s waterways and water challenges. The resulting images, along with images from around the world (including Brazil, Nigeria, Pakistan, India and China), will be shown in “Water Stories,” an open-air solo exhibition. This will be his first in New York, as part of Photoville, a free photography festival in Brooklyn Bridge Park. The 68 images will be presented



in massive light boxes along one of New York's most important bodies of water: The East River and will be visible from Manhattan.

The exhibition is the result of a collaboration with the HSBC Water Program - a partnership between HSBC, Earthwatch, WaterAid and WWF. The exhibition also coincides with NYC Climate Week, further highlighting the growing water challenges across America and the world. Abdulaziz has captured individuals and the landscapes impacted by water challenges, among them: New York, with a focus on understanding and improving the city's water quality for future generations; the city of São Paulo, Brazil, where just two polluted rivers provide water for 21 million people; the poisoned marigold fields of Kanpur, India; shrimp fishermen at dawn on the restored Lake Hong, China; the barren river bed of the Ganges, India; and brightly dressed women hauling water from a 150ft well, three hour's walk from their home in Pakistan.

**Questions:**

**How many countries did Mustafah travel to for this project?**

**Was Thailand one of the countries he visited based on the article?**

**Who are the partners that are collaborating for HSBC Water Program?**

2. Mustafah's work, displayed for the first time at Photoville, includes landscapes scarred by deforestation in Brazil and barriers to development such as conflict and inaccessibility in Nigeria. It also includes previously unseen images of the many levels of New York City's water sources, from the air above the island to the dark underground of New York's sewers. The exhibition also includes portraits of individuals working to improve their local environment: the female mason building toilets in Kanpur, India; the former hunter, Zhang, who now protects wildlife around Lake Hong in China; and the volunteer citizen scientists who gather data on freshwater quality in New York City.

Collectively, the photographs chart the diverse and far reaching effects of urbanization, poor sanitation, pollution, water scarcity, and the side effects of expanding industry and population. As the world becomes more populous and industrialized, water quality is declining, threatening human health and freshwater species, which have declined by 76% since the 1970s. Presently, 650 million people do not have access to an improved source of drinking water, while 2.3 billion people live without access to basic sanitation.

**Questions:**

**The exhibition includes the hunter, Zhang, protecting gold mines in China. True or False?**

**What are some of the causes for negative effects show in the photographs at the exhibition?**

**What has declined by 76% since the 1970s?**

3. The United Nations has warned that our planet is facing a 40 per cent shortfall in water supply by 2030. World leaders signed 17 Global Goals for Sustainable Development in September 2015. Goal 6 calls on ensuring the availability and sustainable management of water and sanitation for all by 2030. Mustafah Abdulaziz is an American documentary photographer based in Berlin. His on-going project 'Water' has received support from the United Nations and VSCO. In 2012, he was named one of PDN's 30 Emerging Photographers to Watch, and is the winner of the Syngenta photography award, 2015. Mustafah Abdulaziz's 'Water Stories' exhibition opens Wednesday, Sept. 21, 2016, on view through Oct. 16, 2016, is part of Photoville 2016 in Brooklyn Bridge Plaza, Sept. 21 - 25, Brooklyn, New York City.

**Questions:**

**What is Goal #6 in the 17 Global Goals signed by World Leaders?**

**Where is Mustafah based at?**

**What award did Mustafah win in 2015?**

## ARTICLE 2

### SCIENTISTS MAY HAVE SOLVED A KEY RIDDLE ABOUT ANTARCTICA — AND YOU'RE NOT GOING TO LIKE THE ANSWER

Source

1. It's one of the great — and unresolved — debates of Antarctic science.

In 1984, a team of Ohio State University researchers reported a surprising fossil find: More than a mile above sea level, in Antarctica's freezing Transantarctic mountain range, fossilized deposits of tiny marine organisms called diatoms were found in rock layers dated to the Pliocene era, some 2 to 5 million years ago. But how did they get all the way up there? Diatoms, ubiquitous marine microorganisms whose tiny shells coat the ocean floor when they die, wouldn't show up in high, inland mountain rocks unless something rather dramatic happened, long ago, to transport them.



So began a storied debate over this rock formation, dubbed the "Sirius Group" after Mount Sirius, one of the range's many peaks. It was between the so-called "dynamicists," on the one hand, and the "stabilists" on the other. The dynamists argued that the enormous East Antarctica had dramatically collapsed in the Pliocene, bringing the ocean far closer in to the Transantarctic range, and that subsequent up thrusts of the Earth and re-advances of glaciers had then transported the diatoms from the seafloor to great heights. No way, countered the stabilists: The ice sheet had stayed intact, but powerful winds had swept the diatoms all the way from the distant sea surface and into the mountains

#### Questions:

**When was the Pliocene Era?**

**What are diatoms?**

**What are the differences between the ways "dynamists" believe and "Stabilists" believe?**

2. The new study is co-authored by Rob DeConto of the University of Massachusetts, Amherst, and David Pollard of Penn State University, who recently published a new ice sheet model of Antarctica that predicts the ice continent can melt and raise sea levels by nearly a meter, on its own, during this century. They reached this result by adding several new dynamic ice collapse processes to glacial models that, in the past, had been slow to melt East Antarctica even in quite warm conditions. These models had lent weight to the views of the stabilists in the debate over the Sirius fossils, while also seeming to suggest that we needn't worry about truly radical sea-level rise from Antarctica.

The new study suggests otherwise. In the Pliocene — and especially the mid-Pliocene warm period, when atmospheric carbon dioxide was at about the level where it is now, 400 parts per million, but global temperatures were 1 or 2 degrees Celsius warmer than at present — the model not only collapses the entirety of West Antarctica (driving some 10 feet of global sea-level rise) but also shows the oceans eating substantially into key parts of East Antarctica. In particular, the multi-kilometer thick ice that currently fills the extremely deep Aurora and Wilkes basins of the eastern ice sheet retreats inland for hundreds of miles — which would have driven global seas to a much higher level than a West Antarctic collapse alone.

#### Questions:

**Did the co-authors of this study come from the same university? Yes, or No?**

**Did past glacial models support the position of Stabilists or Dynamists?**

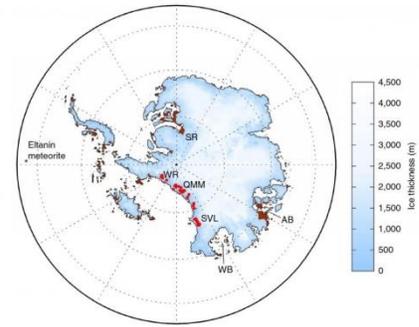
**How much do the new models show sea levels can rise through Antarctica melting?**

3. Here's a figure from the study, showing how much ice the model suggests Antarctica lost in the Pliocene:

Not only is this the world we could be headed to if global warming continues. It's also a world that can hurl diatoms up into the Transantarctic Mountains, the new study argues. Here's how that would work.

At first, in the wake of ice retreats in the Aurora and Wilkes basins, what would be left behind are ocean bays filled with life — and many, many diatoms. But Scherer and his colleagues do not believe that winds simply scooped them out of the water and lifted them into the mountains — living, wet diatoms suspended in water would have been too heavy to travel so far, Scherer says.

So instead, the study postulates another development. After a few thousand years of seas filled with happy diatoms, dying and lining the ocean floor in front of the remnant glaciers of the Wilkes and Aurora basins, the once submerged Earth would slowly rebound in some spots (a process sometimes called “isostatic uplift” or “postglacial rebound”). This would create an archipelago of islands, new landmasses free to rise to the surface now that so much ice has sloughed off their backs.



These islands rising from the sea, then, were the source of the diatoms, the study postulates.

**Questions:**

**What would be left behind if the ice retreats in the Aurora and Wilkes basins?**

**What would create an “archipelago of islands”?**

4. The computer model “did show the ice retreated along the margins of East Antarctica, and isostatic uplift would then expose these areas that become new seaways, and with it would have been highly productive for plankton,” says Scherer. “So you would have been accumulating massive numbers of diatoms across this new basin, and with the loss of the ice, the land flexed upward, became exposed to winds, and the wind carried them to the mountains.”

Scherer notes that this new scenario doesn’t really proclaim either the dynamicists or the stabilists the victors. Rather, it merges their perspectives. His view is clearly reliant on a substantial amount of dynamics, but it also doesn’t show the East Antarctica ice retreated nearly as far back as earlier proposals. Nor does it use glacial processes to move the deposited diatoms. Rather, it borrows the stabilist idea of wind-blown transport, albeit only after ice has retreated and land has risen in its wake.

Commenting on this new compromise proposal Monday, one Antarctic researcher praised the work as representing an advance on old ways of thinking. “The paper is a great example of how much (paleo) climate modelling has improved in the last decade(s), particularly in the last few years,” said Simone Galeotti, an Antarctic researcher at the Università degli Studi di Urbino in Italy, by email.

**Questions:**

**What did the computer model show in how the diatoms were carried to the mountains?**

**Did Scherer say that dynamicists theory is correct?**

**What did one Antarctic researcher say about climate modeling? Has it gotten better or worse?**

5. “This paper’s integration of climate, ice sheet, and atmospheric models provides interesting new perspective on potential source regions for the Antarctic, marine Pliocene diatoms present in glacial sediments of the Transantarctic Mountains, from interior basins of East Antarctica,” said Harwood in an emailed statement. “Their origin from de-glaciated, exposed, rebounded marine basin floors in the Aurora and Wilkes basins is plausible, and the new model-derived wind patterns support their trajectory toward the [Transantarctic Mountains].”

Harwood therefore said that the study “comes close” to resolving the old debate between ‘dynamicists’ and ‘stabilists’ over the fossils.

“Bottom line, this paper suggests that marine diatoms in the Sirius Group do reflect dynamic ice behavior and Pliocene ice sheet retreat, just not of the scale suggested initially by Webb/Harwood,” he said, referring to the initial study that started off the debate. “Kind of like being right for the wrong reason.”

But beyond solving the riddle of the Sirius deposits in the Transantarctic Mountains, the new study also speaks strongly to the present moment. After all, the warm Pliocene, with its much higher seas, is one of the key past eras that scientists look to for an analogue for where we are currently driving the planet with our greenhouse gases.

**Questions:**

**The study includes the integration of climate, ice sheet and tidal models, True or False?**

**Were the global seas higher or lower during the Pliocene age?**

6. And thus, the new work suggests that if we keep pushing the system, we'll not only have to worry about the loss of Greenland's and West Antarctica's ice, but also major losses from the biggest ice sheet of them all, East Antarctica.



Scherer, DeConto, and Pollard also have a fourth author on the study, the noted Penn State glaciologist Richard Alley, who has become more and more outspoken of late about his concerns that the world's great ice sheets could be unstable. In a media statement accompanying the study's release, Alley had this to say:

This is another piece of a jigsaw puzzle that the community is rapidly putting together, and which appears to show that the ice sheets are more sensitive to warming than we had hoped. If humans continue to warm the climate, we are likely to commit to large and perhaps rapid sea-level rise that could be very costly. No one piece of the puzzle shows this, but as they fit together, the picture is becoming clearer.

In other words, solving this key scientific problem from Antarctica's past turns out to immediately raise major concerns about its future.

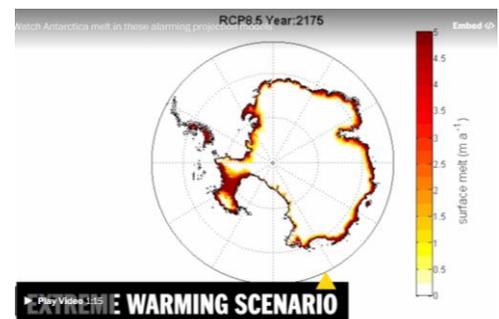
**Questions:**

**What has the largest ice sheet? Greenland, West Antarctica or East Antarctica?**

**Richard Alley, the fourth author on the study, stated that as humans warm the climate the sea level rise will slow down. True or False?**

7. "We have now reached a point where atmospheric CO2 levels are as high as that during the Pliocene, 400 ppm, when geological evidence and new model results suggest substantial retreat of the EAIS [East Antarctic Ice Sheet] margin into interior basins. These perspectives bear fundamentally on predictions of future EAIS behavior," said Harwood by email.

Granted, on a scientific and individual level, there's also the satisfaction of finally being able to unify quite a lot of information into an explanation that fits the data and also matches our growing present day understanding of Antarctic vulnerability.



"Personally, I find the story rather cathartic, because it does explain the observations, I think, in a much better way than had been done before," says Scherer.

**Questions:**

**What do you think about this article? What can you do to decrease global climate change?**