

Reading Explorer 5 Unit 6 Lesson B

DIRECTIONS: Choose the best answer for each question.

Building the Ark

Zoos may have to choose between keeping the animals we most want to see and saving the ones we may never see again.

[A] When the Cincinnati Zoo opened its gates in 1875, there were perhaps as many as a million Sumatran rhinos foraging¹ in forests from Bhutan to Borneo. Today, there may be fewer than a hundred left in the world. Three of these were born in Cincinnati - a female named Suci and her brothers, Harapan and Andalas. In 2007, the zoo sent Andalas to Sumatra, where he has since sired² a calf at Way Kambas National Park. If the species escapes extinction, it will in no small part be thanks to the work done at the zoo. And what goes for the Sumatran rhino goes for a growing list of species saved from oblivion. As the wild shrinks, zoos are increasingly being looked to as modern-day arks:³ the last refuge against a rising tide of extinction.

Who to Save?

[B] From the early 19th century, American zoos were involved in animal conservation. At the end of the century, the Cincinnati Zoo tried - unsuccessfully - to breed passenger pigeons, whose numbers were in rapid decline. (The bird thought to be the very last passenger pigeon, named Martha, died at the zoo in 1914; the building where she lived is now a memorial.) And in the early 20th century, when one count showed just 325 wild American bison left in North America, the Bronx Zoo started a captive-breeding program that helped save the species. Other animals that owe their existence to captive-breeding efforts are the Arabian oryx, the black-footed ferret, the red wolf, the Guam rail, and the California condor.

[C] Because such programs tend to be expensive - the condor program costs participating institutions up to \$2 million a year - they're usually led by large, big-city zoos, but smaller zoos are increasingly joining in. The Miller Park Zoo in Bloomington, Illinois, is one of the smallest zoos in the United States, at just four acres. However, it has bred red wolves and is hoping to breed the endangered Mount Graham red squirrel. "It's a small animal that doesn't require a huge amount of space," said zoo official Jay Tetzloff.

[D] But zoos also have to financially support themselves, and small animals just don't attract the crowds necessary to keep business in the black.⁴ Robert Lacy, a conservation biologist at the Chicago Zoological Society, says that zoos are going to have to make some really difficult decisions. "Do you save a small number of large animals - the crowd favorites - or do you focus on saving a whole lot more little, unpopular creatures for the same amount of money?" he asks.

[E] Right now, the world's most threatened group of animals are probably amphibians. According to the International Union for Conservation of Nature (IUCN) - which maintains what's known as the Red List - more than a third of the world's frog, toad, and salamander species are at risk of extinction. Unfortunately for them, amphibians are far less popular than zoo species such as pandas or lions, which are not yet facing imminent extinction in the wild. But there are advantages to being small. For one thing, a whole population of amphibians can be kept in less space than that required by a single rhinoceros.

[F] Others question whether zoos should devote resources to species, large or small, that are doing fine on their own. "I think it's a bit of a cop-out⁵ to say the public wants to see x, y, or z," says Onnie Byers, chair of the Conservation Breeding Specialist Group, part of the IUCN Species Survival Commission. "Plenty of species need exactly the expertise that zoos can provide. I would love to see a trend toward zoos phasing out species that don't need that care and using the spaces for species that do."

Small Victories

[G] "It's an amazing responsibility to have half the remaining members of a species in your care," says Jim Breheny, the director of the Wildlife Conservation Society's Bronx Zoo. He's standing in a state-of-the-art breeding facility filled with tanks of Kihansi spray toads - small, yellow amphibians about 2.5 centimeters (one inch) long.

[H] Depending on how you look at things, the Kihansi spray toad is either one of the most unfortunate or one of the luckiest species around. Until the late 1990s, the Kihansi spray toad was unknown to science. It was not actually identified until a hydroelectric⁶ project was already destroying its tiny habitat - five acres of mist-soaked land in the Kihansi River Gorge, in eastern Tanzania. In 2000, recognizing that the project would probably harm the newly discovered species, the Tanzanian government invited the Bronx Zoo to collect some of the toads. Exactly 499 spray toads were captured and kept in the Bronx and Toledo Zoos in the United States. Just nine years later, as a result of disease and habitat destruction, the Kihansi spray toad was declared extinct in the wild.

[I] In the meantime, the zoos were struggling to figure out how to recreate the habitat that gives the spray toad its name. In the Kihansi River Gorge, a series of waterfalls had provided the toads with constant spray, so the tanks in the Bronx were provided with spray in the same way. Among amphibians, Kihansi toads are unusual in that the young are born live: At birth, they are no bigger than a match head. For the tiny young, the zoo had to find even tinier prey; eventually, they settled on tiny insect-like animals called springtails, which the researchers also had to figure out how to raise. But then keepers noticed that the toads seemed to be suffering from a nutritional deficiency,⁷ so a special vitamin supplement had to be designed.

[J] After some initial losses, the toads began to thrive and reproduce. By 2010, there were several thousand of them in New York and Toledo, so that year a hundred toads were sent back to the Kihansi River Gorge. But there was a problem: By diverting water from the falls, the hydroelectric project had eliminated the mist that the toads depend on. So the Tanzanians set up a system to restore the spray to the gorge. In 2012, the first toads bred in the Bronx Zoo were released back into the wild.

The Frozen Zoo

[K] But for every success story like the Kihansi toad, there are dozens of other species on the edge of extinction. Many of these - the Sumatran orangutan, the Amur leopard, a songbird from the island of Kauai, and a thousand other species - can be found in a single room at the San Diego Zoo Institute for Conservation Research. Vials containing cells from each of these animals are being kept in a bath of liquid nitrogen⁸ where the temperature is minus 200°C. These thousands of identical-looking frozen vials represent what might be described as a beyond-the-last-ditch⁹ conservation effort: the Frozen Zoo.

[L] For now, at least, only one of the animals in the Frozen Zoo is actually extinct: the po'ouli, a fat bird with a sweet black face and a light-colored chest that lived on the Hawaiian island of Maui until 2004. But it seems safe to predict that in the coming years, more and more will become extinct.

[M] "I think there are going to be more and more species where the only living material left is going to be cells in the Frozen Zoo," says Oliver Ryder, the institute's director of genetics. Native to central Africa, the northern white rhino is down to its last two females, after the death in 2018 of the last living male. The extinction of the species is, at this point, considered inevitable. After the two last rhinos die, they will, in a way, live on - one last hope, suspended in a frozen cloud.

The Photo Ark

The Photo Ark is a 20-year-long documentary project founded by National Geographic photographer and fellow Joel Sartore. It is an extensive online archive of studio-quality photographs of animals around the world, from the largest carnivores to the smallest insects - all to showcase biodiversity. "We stand to lose half of all the planet's species by the turn of the next century," says Sartore. "The Photo Ark seeks to document as many of these as possible, using captive animals as ambassadors."

More than 9,500 species have already been photographed since the project began, and Sartore plans to continue documenting all of the roughly 12,000 species inhabiting zoos, aquariums, and breeding centers around the world. Sadly, several of the animals he photographed have already become extinct.

The goal of the project is to bring amazing images of animals to the public eye in order to inspire people everywhere to care about these species - and to do something to help save them before it's too late. "People won't work to save something if they don't know it exists," Sartore says. "That's where these photos come in."

¹ When animals **forage**, they search for food.

² The verb **sired** means to become the father of (an animal).

³ In a story from the Bible, the **Ark** was a large boat that a man named Noah built in order to save his family and two of every kind of animal from a huge flood.

⁴ If a business is **in the black**, it is making money and not losing it.

⁵ **Cop-out** means taking the easy way out of a difficult situation.

⁶ **Hydroelectric** is related to electricity made from the energy of running water.

⁷ If you have a **nutritional deficiency**, you are not getting the vitamins, minerals and other substances your body needs from what you eat and drink.

⁸ **Nitrogen** is a colorless element with no smell; it is usually found as a gas and is a liquid below -196°C.

⁹ A **last-ditch** effort is a final attempt to achieve something after all else has failed.

- _____ 1. Which of the headers in the passage refers to the storage of living animal cells?
- Who to Save
 - Small Victories
 - The Frozen Zoo
 - The Photo Ark

- _____ 2. In paragraph A, the author says *zoos are increasingly being looked to as modern-day arks*. Why?
- a. Zookeepers and conservationists fear rising ocean levels and another great flood.
 - b. Animal rights groups believe that zoos should keep animals in mated pairs, just like Noah did.
 - c. Zoos are trying to save endangered animals from extinction through captive breeding programs.
 - d. Modern zoo architecture often resembles large ships with many separate compartments.
- _____ 3. In paragraph B, what does a *captive-breeding program* do?
- a. captures wild animals that the public finds especially interesting to observe
 - b. builds populations of endangered species in protected environments
 - c. protects individual animals with unusual features like the two-toed sloth
 - d. helps to increase the birth rate of animals that still live in the wild
- _____ 4. According to paragraph E, what is the Red List?
- a. a list of animals with endangered status
 - b. a list of animals that have already become extinct
 - c. a membership directory of zoos and wildlife reserves
 - d. a collection of amphibians such as frogs, toads, and salamanders
- _____ 5. Which of the following sentences express an attitude closest to that of Onnie Byers in paragraph F?
- a. Zoos should prioritize caring for animals that need expert help.
 - b. Let the general public decide which animals they want to see.
 - c. Zoos and animal parks should charge more to see endangered species.
 - d. People should support zoos with tax money instead of charging admission.
- _____ 6. What is the purpose of paragraphs G through J?
- a. to provide a critique of Tanzanian officials for not relocating the hydroelectric project
 - b. to argue that the toads should have been kept in an African zoo
 - c. to provide evidence of economic development
 - d. to provide a detailed case study of a captive breeding program
- _____ 7. Which of the following is NOT mentioned as a problem the Bronx Zoo faced in caring for the Kihansi spray toads?
- a. providing a constant spray of water
 - b. finding room to keep them at the zoo
 - c. locating appropriate food
 - d. correcting a nutritional deficiency
- _____ 8. In paragraph M, what will happen when the two female northern white rhinos die?
- a. Their bodies will be preserved and frozen.
 - b. The Zoo will release all rhinos back into the wild.
 - c. The San Diego Zoo will breed the other rhinos.
 - d. Scientists will freeze their genetic material.
- _____ 9. What does the underlined root in *predict* (paragraph L) relate to?
- a. feel
 - b. earth
 - c. self
 - d. speak

10. What does the underlined root in *geographic* (*The Photo Ark* section) relate to?
- a. feel
 - b. earth
 - c. self
 - d. speak

DIRECTIONS: Choose the best answer for each question.

The Elephants of Samburu

Author David Quammen writes about an extraordinary experience among the elephants of Samburu National Reserve, Kenya.

An Encounter at Sunset

[A] Late one afternoon, biologist Iain Douglas-Hamilton stopped by my tent and asked if I wanted to drive out and see some elephants before sunset. I asked him if he would like to take a walk instead. I knew that walking around the reserve could be risky, but surely we could at least climb the little hill just behind camp. He agreed, and we did. The view of the river from the top was magnificent. Just north of us was a larger hill known as Sleeping Elephant. I asked him if he had ever climbed that one. He told me he hadn't, but, with a mischievous look in his eye, said that we could.

[B] We walked toward Sleeping Elephant: two middle-aged white men and a young Samburu man named Mwaniki. We walked only five minutes before we saw a female elephant with two babies ahead of us. We paused, admiring these noble creatures from a safe distance until they seemed to withdraw, and then we went on, unable to foresee that our lives were in danger. Seconds later, we looked up to see the female staring angrily at us from 70 meters away. Her ears were spread wide, showing us her agitation.

[C] Mwaniki and I turned and ran, and we managed to put a safe distance between us and the elephant. Mwaniki continued to run all the way back to camp to get help. At first, Douglas-Hamilton also turned and ran - then thought better of it, turned back, threw his arms out, and yelled to stop the elephant. Sometimes this works, but the female kept coming. Douglas-Hamilton turned again and ran, but the elephant caught him as he tried to evade her. She lifted him and then threw him as he yelled for help. She stepped forward and stabbed her sharp, rigid tusks downward at him. Then she backed off about ten steps and paused. This was the moment, he told me later, when he had time to wonder whether he would die.

[D] I ran back to Douglas-Hamilton, and to my surprise, he wasn't dead. After stabbing at him once and missing, the elephant had turned away. She went off to find her babies. Douglas-Hamilton was scratched, but not badly hurt; his shoes, glasses, and watch were gone, but he was OK. He stood up. Then a dozen people arrived from camp, and helped retrieve his things.

[E] Afterwards, Douglas-Hamilton and I hypothesized about what had triggered the attack. It was possible that we surprised her. Perhaps it was her mother's instinct to defend her calves. It was also conceivable that she had recently been frightened by a lion and was in an agitated state. The more difficult question, however, was why, at the last minute, did she decide not to kill him? I suppose we will never know, but I like to think that, after confusing him with an enemy, she finally recognized in Douglas-Hamilton a genuine friend of elephants.

Saving the Elephants

[F] "If you had asked me when I was ten years old what I wanted to do," Douglas-Hamilton says, "I'd have said: I want to have an airplane; I want to fly around Africa and save the animals." Later, while studying zoology at Oxford University, he found his goals hadn't changed. "Science for me was a passport to the bush," he says, "not the other way around. I became a scientist so I could live a life in Africa and be in the bush."

[G] Early in his career in Africa, he went to Tanzania as a research volunteer in Lake Manyara National Park. He bought himself a small airplane, which he could use for tracking elephants. There at Manyara, Douglas-Hamilton did the first serious study of elephant social structure and spatial behavior (which includes where they go and how long they stay there) using a radio tracking system. He also became the first elephant researcher to focus closely on living individual animals, not just trends within populations or the analysis of dead animals. He got to know individual elephants and their personalities, gave them names, and watched their social interactions.

[H] Then came the difficult years of the late 1970s and '80s, when Douglas-Hamilton sounded the alarm against the widespread killing of African elephants. The killing was driven by a sudden sharp rise in the price of ivory and made easy by the widespread availability of automatic weapons. Douglas-Hamilton calculated elephant losses throughout Africa at somewhere above 100,000 animals annually. He decided to do something.

[I] With funding from several conservation NGOs, Douglas-Hamilton organized an immensely ambitious survey of elephant populations throughout the continent. From the results, compiled in 1979, he figured that Africa then contained about 1.3 million elephants, but that the number was declining at too fast a rate. Some experts in the field disagreed, and the struggle between the two sides over elephant conservation policy in the 1980s became known as the Ivory Wars.

[J] Douglas-Hamilton spent years investigating the status of elephant populations in Zaire, South Africa, Gabon, and elsewhere, both up in his airplane and on the ground. He flew into Uganda during the chaos that followed the collapse of the government of the time and saw the bodies of slaughtered elephants all over the national parks. "It was a dreadful time. I really spent a terrible 20 years doing that," he says now. However, his work helped greatly to support the 1989 decision under the Convention on International Trade in Endangered Species to abolish the international sale of ivory.

[K] In 1997, Douglas-Hamilton came to Samburu National Reserve in Kenya. By that time, he had established his own research and conservation organization, Save the Elephants. Today, he divides his time between teaching a new generation of elephantologists and studying the movement of elephants using global positioning system (GPS) technology. The data he acquires from elephants wearing GPS collars is used by the Kenya Wildlife Service to provide better wildlife-management and land-protection advice to the government. Save the Elephants now has GPS tracking projects not just in Kenya but also in Mali, South Africa, and the Democratic Republic of the Congo.

[L] Following the attack outside his camp, Douglas-Hamilton was able, using his equipment, to identify the elephant that threatened him as Diana, one of the females from a herd he had been tracking for some time. Diana was just like any other elephant - sensitive, unpredictable, and complex. Although her behavior on that afternoon had been violent, at the last moment she had made a choice. And not even Iain Douglas-Hamilton, with all his modern equipment and years of experience, can know exactly why she attacked him - or why she let him live.

- ____ 11. Why did Douglas-Hamilton have a *mischievous look in his eye* when he agreed to go walking with the author?
- He knew it was a dangerous thing to do.
 - He had already climbed the Sleeping Elephant.
 - He had a surprise planned for the author.
 - He thought the author was afraid of elephants.
- ____ 12. The following sentence would be best placed at the end of which paragraph?
- Trumpeting loudly, she charged.*
- Paragraph A
 - Paragraph B
 - Paragraph C
 - Paragraph D
- ____ 13. In paragraph C, what does *thought better of it* mean?
- to decide not to do what was intended
 - to decide to do what was intended
 - to decide not to change other people's intentions
 - to think more about it before doing it
- ____ 14. In paragraph C, what does the word *works* mean?
- to study or to do research
 - to have a job
 - to be successful or effective
 - to function properly
- ____ 15. Which of the following is closest to Douglas-Hamilton's meaning when he said, *Science for me was a passport to the bush* in paragraph F?
- My science education took place mainly in the bush.
 - I took a trip to the bush to study science.
 - The reason I studied science was to be able to work in the bush.
 - In my opinion, science can be good preparation for the bush.
- ____ 16. Douglas-Hamilton was the first elephantologist to ____.
- track elephants with an airplane
 - study trends in elephant populations
 - get to know individual elephants
 - analyze the bodies of dead elephants
- ____ 17. What cause of elephant population decline does the writer mention?
- the lifting of the ban on ivory sales
 - the widespread availability of automatic weapons
 - a decrease in the amount of funding for conservation NGOs
 - the spread of disease among elephant populations
- ____ 18. What is the name of Douglas-Hamilton's own research and conservation organization?
- Ivory Wars
 - Kenya Wildlife Service
 - Samburu National Reserve
 - Save the Elephants

- ____ 19. Which of the following words in paragraph F has a root that means *study of*?
- a. zoology
 - b. airplane
 - c. scientist
 - d. passport
- ____ 20. Which of the following words in paragraph H has a root that means *self*?
- a. calculated
 - b. widespread
 - c. difficult
 - d. automatic

DIRECTIONS: Complete the sentences. Choose the correct word.

- a. captive
- b. extinction
- c. imminent
- d. oblivion
- e. refuge
- f. shrink
- g. state-of-the-art
- h. struggle
- i. supplement
- j. tide

- ____ 21. Many marine animals are facing ____ due to uncontrolled pollution of the oceans.
- ____ 22. Three years ago, the band had almost faded into ____, but made a huge comeback after the release of their latest album.
- ____ 23. The population of poison frogs began to ____ due to habitat destruction.
- ____ 24. Fleeing from the heavy rain, he sought ____ in the old barn.
- ____ 25. The rising ____ of political unrest was causing a lot of concern for the neighboring countries.
- ____ 26. She was held ____ by her kidnapper for three days before being rescued by the police.
- ____ 27. The excitement of the crowd grew with the ____ arrival of the Queen.
- ____ 28. The new hospital is equipped with the latest ____ medical equipment.
- ____ 29. Even working two jobs, it was a(n) ____ for her to pay the bills every month.
- ____ 30. Those who took the multivitamin ____ reported feeling healthier than those who did not.

Reading Explorer 5 Unit 6 Lesson B

Answer Section

1. ANS: C PTS: 1 REF: Pages 129-132
OBJ: Main Idea TOP: Survival and Protection
2. ANS: C PTS: 1 REF: Pages 129-132
OBJ: Figurative Language TOP: Survival and Protection
3. ANS: B PTS: 1 REF: Pages 129-132
OBJ: Main Idea TOP: Survival and Protection
4. ANS: A PTS: 1 REF: Pages 129-132
OBJ: Inference TOP: Survival and Protection
5. ANS: A PTS: 1 REF: Pages 129-132
OBJ: Paraphrase TOP: Survival and Protection
6. ANS: D PTS: 1 REF: Pages 129-132
OBJ: Purpose TOP: Survival and Protection
7. ANS: B PTS: 1 REF: Pages 129-132
OBJ: Negative Detail TOP: Survival and Protection
8. ANS: D PTS: 1 REF: Pages 129-132
OBJ: Supporting Detail TOP: Survival and Protection
9. ANS: D PTS: 1 REF: Page 135
OBJ: Determining the Meaning of Root Words TOP: Survival and Protection
10. ANS: B PTS: 1 REF: Page 135
OBJ: Determining the Meaning of Root Words TOP: Survival and Protection
11. ANS: A PTS: 1 REF: Unit 6 OBJ: Inference
TOP: Survival and Protection
12. ANS: B PTS: 1 REF: Unit 6 OBJ: Cohesion
TOP: Survival and Protection
13. ANS: A PTS: 1 REF: Unit 6 OBJ: Idiom
TOP: Survival and Protection
14. ANS: C PTS: 1 REF: Page 126
OBJ: Understanding Words with Multiple Meanings TOP: Survival and Protection
15. ANS: C PTS: 1 REF: Unit 6 OBJ: Paraphrase
TOP: Survival and Protection
16. ANS: C PTS: 1 REF: Unit 6 OBJ: Supporting Detail
TOP: Survival and Protection
17. ANS: B PTS: 1 REF: Unit 6 OBJ: Cause and Effect
TOP: Survival and Protection
18. ANS: D PTS: 1 REF: Unit 6 OBJ: Supporting Detail
TOP: Survival and Protection
19. ANS: A PTS: 1 REF: Page 135
OBJ: Determining the Meaning of Root Words TOP: Survival and Protection
20. ANS: D PTS: 1 REF: Page 135
OBJ: Determining the Meaning of Root Words TOP: Survival and Protection
21. ANS: B PTS: 1 REF: Page 136 OBJ: Vocabulary
TOP: Survival and Protection
22. ANS: D PTS: 1 REF: Page 136 OBJ: Vocabulary
TOP: Survival and Protection

23.	ANS: F	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
24.	ANS: E	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
25.	ANS: J	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
26.	ANS: A	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
27.	ANS: C	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
28.	ANS: G	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
29.	ANS: H	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			
30.	ANS: I	PTS: 1	REF: Page 136	OBJ: Vocabulary
	TOP: Survival and Protection			