

# DIRECTIONS FOR TEACHERS

## LISTENING SECTION

### COMPREHENSIVE EXAMINATION IN ENGLISH

Wednesday, January 23, 2002—9:15 a.m. to 12:15 p.m., only

**BE SURE THAT THE LISTENING SECTION IS ADMINISTERED TO EVERY STUDENT.**

- 1 Before the start of the examination period, say:

**Do not open the examination booklet until you are instructed to do so.**

- 2 Distribute one examination booklet and one essay booklet to each student.

- 3 After each student has received an examination booklet and an essay booklet, say:

**Tear off the answer sheet, which is the last page of the examination booklet, and fill in its heading. Now circle “Session One” and fill in the heading on each page of your essay booklet.**

- 4 After the students have filled in all headings on their answer sheets and essay booklets, say:

Look at page 2 of your examination booklet and follow along while I read the **Overview** and **The Situation**.

**Overview:**

For this part of the test, you will listen to a speech about the use of technology in studying leatherback turtles, answer some multiple-choice questions, and write a response based on the situation described below. You will hear the speech twice. You may take notes on the next page anytime you wish during the readings.

**The Situation:**

Your science teacher has asked each student in the class to select a special project that could benefit endangered animals. You have decided to write a letter to the Research and Exploration Committee of the National Geographic Society. The purpose of your letter is to persuade the Committee to provide funding for the use of technology in saving endangered animals. In preparation for writing your letter, listen to a speech by Peter Tyson, a science writer. Then use relevant information from the speech to write your letter.

Now I will read the passage aloud to you for the first time.

- 5 Now read the passage aloud with appropriate expression, but without added comment.

## Listening Passage

I was kneeling on a sandy beach called Playa Grande in Costa Rica on a balmy January night helping biologists administer an ultrasound to a leatherback sea turtle. The turtle had come ashore to lay her eggs. I watched as she hauled her enormous bulk up the beach, pivoted slowly around to face the ocean, and began scooping out an oval pit in the sand with her hind flippers. She soon entered an egg-laying trance.

In her reverie, she took no notice of us as we got to work. We unpacked the equipment, which looked like a desktop computer, and set it down in the sand just behind her. We waited while she dropped about 100 moist, white eggs into the nest. When she finished, David Rostal, a biologist, carefully moved the ultrasound probe across her skin. It would reveal whether or not she would return later in the season to lay another batch of eggs.

I found it truly incongruous to witness one of the most modern of medical tests being used on one of the most ancient animals. Yet such scenes are becoming increasingly common. In many cases, advanced technologies are allowing scientists to investigate aspects of ecology, physiology, and behavior that they were never able to investigate before.

The work taking place with leatherbacks on this beach—Playa Grande on Costa Rica's Pacific coast—is a case in point. For on that half-mile-long stretch of sand, biologists are making use of perhaps more high-tech gadgets than any other biologists working on any other animal. And with these tools they are answering a sea of previously unanswerable questions about the turtles—and so learning how remarkable they are and what kinds of conservation measures may help them.

The leathery turtle is unique among sea turtles. It is the most ancient living reptile, around in its current form for at least 20 million years and possibly over 100 million years. It is also the biggest, having watched its rivals for size, the dinosaurs, go extinct some 65 million years ago.

Despite its uniqueness, the leatherback is also on the road to extinction. Frank Paladino, a biologist, recently estimated that the global population has dropped by two-thirds since 1980 alone, from 115,000 to 34,500 nesting females.

Though the leatherback spends most of its life far out to sea, its chief threats, ironically, lie ashore. On leatherback nesting beaches throughout the tropical world, people raid the turtles' nests for their delectable eggs, build over their habitat with houses and hotels, and occasionally kill nesting females for their meat. Increasingly, though, leatherbacks are also losing their lives on the high seas, where fishermen harpoon them for food or for the thick, yellow oil contained in their flesh. The turtles also perish at sea when scattered longline fishing gear snags and drowns them, and floating plastic garbage chokes them when the turtles mistake it for jellyfish.

In their efforts to gather as much information as they can about each turtle, nest, egg, and hatchling on Playa Grande and elsewhere, biologists rely on a wide range of techniques. Certain methods remain low-tech, such as recording each mother's length and width with a measuring tape to determine average sizes. But other methods rely on some of the most advanced technologies available.

Arguably the most valuable technology is also the smallest. About the size of a grain of rice, a microchip identification tag is injected into the shoulder muscle of every nester that crawls onto Playa Grande. As each turtle comes ashore, project staff members pass a hand-held scanner, like those used in supermarket checkout lines, across the reptile's shoulder to read the I.D. code.

By identifying individuals, researchers can answer a bevy of questions. Over the years, Paladino and his colleagues have proven, for instance, that Playa Grande is one of the largest leatherback nesting colonies in the Pacific Ocean. They have also shown that females tend to lay eggs, on average, five times during the October-to-February nesting season. This finding may have conservation implications. For example, if females hang around relatively close to the beach, boating and fishing near nesting beaches may need to be restricted during these months.

Researchers soon hope to inject microchips into hatchlings to identify turtles when they return to nest. Scientists can also examine nesting females by taking blood samples, measurements, and ultrasound tests of their ovaries to understand the species' egg-laying cycles and determine when to protect its shoreline habitat.

Some questions, such as where baby turtles go when they disappear into the waves, may have to await breakthroughs in available technologies, such as miniaturized satellite transmitters perhaps, or even new technologies altogether. "We have to get a better understanding of where leatherbacks go, what they're doing out there, and what habitats they need to survive, or we're wasting all our efforts everywhere else," says Scott Eckert, a biologist, referring to attempts to safeguard nesting beaches. "That's my crusade of perhaps the next 50 years."

Another crusade of Eckert's is informing the general public about leatherbacks and their plight. "It's your long-term insurance," he notes. One of the best ways to educate people, he says, is with yet another burgeoning technology—the Internet. There are now a number of popular sea-turtle-oriented Web pages. "The Internet is an inexpensive way to distribute information to a very wide readership," Eckert says, "and any time you do that you are benefiting conservation of the species."

Meanwhile, until wider scientific understanding of leatherbacks exists, researchers agree that the most promising way of preserving the species remains protecting its nesting grounds. Toward that end, there is good news at Playa Grande. In July 1995, the Costa Rican government declared Playa Grande and two neighboring nesting beaches a national park. Beyond a strong national conservation ethic, the Costa Rican authorities granted protection largely based on the cutting-edge research of Paladino and his colleagues.

6 After reading the passage aloud once, say:

You may take a few minutes to look over **The Situation** and your notes.  
(Pause) Now I will read the passage aloud a second time.

7 Read the passage a second time.

8 After the second reading, say:

Now turn to page 4 of your examination booklet, read the directions, and answer the multiple-choice questions. Be sure to follow all the directions given in your examination booklet and your essay booklet. You may now begin.