

Listening Scripts/Answers

Listening Practice Test 1: Wrestling

Many of the sports which the ancient Greeks practiced and which made up a part of their own Olympics still survive in some way or other in the sports which we practice today. Their motivation, however, was for practice for war and it is in such motivation that one can understand the emphasis on martial skills such as wrestling, Pankration, boxing, the javelin and running, while still including such less directly applicable sports as discus and jumping. Overtime, as interest grew in sport and competition alone, new sports were added, but it was these core sports, which stood the test of time, and which have continued to be practiced, in similar form, right up to the present day. _ Wrestling must be regarded as the most important sport practiced in ancient Greece; the very name palaestra “wrestling school” must indicate its importance in Greek life. Nor need we be surprised at this for all over the world in cultures far-distant from each other, one can find styles of wrestling and fighting, for it is a useful skill in war.

There was one major style of wrestling, the one that was found in ancient Greek competition, so-called upright wrestling. It is difficult to draw an accurate picture of the rules and the manner in which it was conducted, but nevertheless some conclusions can be drawn based on evidence and reasonable guesswork.

Upright wrestling was conducted in a jumping pit-style arena, a type of round or oval building with an open space with rising seats in the middle. The aim was for one of the wrestlers to throw his opponent on to the ground so that he landed on a place such as his hip, back, or shoulder. To land on one of these areas would suggest that one has been thrown into a prone position and is, therefore, at the mercy of one’s opponent. It is not unreasonable to assume , therefore, that this was counted as a well-executed throw and might score a “point” accordingly. If both wrestlers fell together then we must assume that either no point was scored or both scored. Either way, neither competitor gained an advantage. To gain victory, in competition at least, then it appears that one of the competitors had to amass three points or correct throws. It must have been a long and tiring contest.

While there are depictions of certain throwing techniques in art they are inevitably fail to fully explain wrestling techniques. However, it is not unreasonable to assume that such techniques were similar to techniques one might find in martial arts such as Judo or Ju-Jitsu, after all, there are only a finite number of ways that one can throw an opponent.

There is also another style of wrestling which did not exist on its own but which was part of the Pankration. In this style the struggle was continued on the ground till one or other of the combatants acknowledged defeat. For the Greeks wrestling was both as science and an art and great importance was attached to the manner in which one conducted oneself in the ring. To throw one's opponent was not enough, it had to be done stylishly and in good style.

While this may have been a common held view by the Greeks this in no way detracts from the physicality of the sport and thus its usefulness in training the body for the exertions of combat.

1. Palaestra = Wrestling school.

Jumping pit-style arena= Where wrestling was conducted

Ju-Jitsu = Martial arts

2. B Upright wrestling was conducted in a jumping pit-style arena. The aim was for one of the wrestlers to throw his opponent on to the ground so that he landed on a place such as his hip, back, or shoulder.

3. The correct order is as follows:

3 Wrestler scores a point.

4 Wrestler wins game after amassing three points or three correct throws.

1 Wrestler enters a jumping pit-style arena.

2 Wrestler throws his opponent onto the ground.

4. C (Upright wrestling was conducted in a jumping pit-style arena, a type of round or oval building with an open space with rising seats in the middle.)

5. A & D (Their motivation, however, was for practice for war and it is in such motivation that one can understand the emphasis on martial skills such as wrestling, Pankration, boxing, the javelin and running, while still including such less directly applicable sports as discus and jumping.)

Listening Practice Test 2: WWII

To continue our discussion on women's roles in our society, I want to talk about the effects of World War II on women's employment in the United States Compared to Mt. Vernon, Ohio, 1938-1948. The period commencing with the Japanese attack on Pearl Harbor (December 7, 1941) and ending with the completion of World War II had a great impact on women's employment in the United States.

Prior to this period employers, government and national sentiment held that there were jobs appropriate for women and those which were inappropriate because women were not capable of fulfilling the tasks involved in such work. Propaganda reinforced these notions as the popular image of women had them, for instance, as housewives or living glamorous lives, but almost always dependent on men. The War years provided women of Mt. Vernon and the nation as a whole with an opportunity to break this trend.

Women took this chance to prove that they were almost every bit as capable as men in the traditionally male work sphere. There were no lasting effects on women's status in the work force resulting from the War. In the War's aftermath, women returned to jobs they had held traditionally, provided they were of the working class.

At the same time, many women who had not worked prior to the War returned to their homes and house-work. Mt. Vernon was much like many of the major war industries cities such as Detroit and San Francisco, although there were some key differences. In population size it was small. Its economy at the time was predominantly agricultural although there were three major industrial plants - Cooper-Bessemer (a producer of diesel engines), Mt. Vernon Bridge and Steel (produced Landing Ship Tanks) and Shellmar (produced protective capes and gas masks for soldiers). Factories such as these are what made Mt. Vernon similar to the major war industries cities.

Likewise, making Mt. Vernon comparable to the rest of the nation was the role women played in such industrial work by filling in for men who left to fight. To recruit women into the

labor force, propaganda in magazines, advertising, radio programming and films was used for this was the most efficient method of encouraging women to take a war job.

Oral history provided much information about the status of women workers before, during and after the War in Mt. Vernon. Interviews with women who lived in Mt. Vernon during the period answered questions concerning women's work status. Questions were asked about entire work histories which showed how many working class women took higher paying industrial jobs during the War after having received lower wages in other work sectors. There were also questions about domestic lives because several of the women never worked and one goal was to find out why they had not.

The end of the War and changes it brought to Mt. Vernon's female work force was another issue probed. How did women feel about relinquishing their jobs to returning soldiers? Another aim was to learn more about how effective propaganda was. Did it have any effect at all, or was it more a subconscious matter that they could not answer (which was often the case).

1. The correct order is as follows:

3 Women proved that they were almost every bit as capable as men in the traditionally male work sphere.

4 Women relinquished their jobs to returning soldiers.

1 Propaganda reinforced these notions as the popular image of women had them, for instance, as housewives or living glamorous lives, but almost always dependent on men.

2 The Japanese attack on Pearl Harbor (December 7, 1941)

2. B (It is learned that propaganda reinforced these notions as the popular image of women had them, for instance, as housewives or living glamorous lives, but almost always dependent on men. Therefore, answer B is the correct answer.)

3. C

4. A & D (Answers A and D are mentioned as two effects of women status in the workforce after the war.)

5. Propaganda in magazines = Used to recruit women to take a war job.

Mt. Vernon = Mostly agricultural.

Oral history = Provided much information about the status of women workers before, during and after the War.

Listening Practice Test Three: Languages

We don't ask ourselves where languages come from because they just seem to be there: French in France, English in England, Chinese in China, Japanese in Japan, and so forth. Yet if we go back only a few thousand years, none of these languages were spoken in their respective countries and indeed none of these languages existed anywhere in the world. Where did they all come from?

In some cases, the answer is clear and well-known. We know that Spanish is simply a later version of the Latin language that was spoken in Rome two thousand years ago. Latin spread with the Roman conquest of Europe and, following the breakup of the Roman Empire, the regional dialects of Latin gradually evolved into the modern Romance languages: Sardinian, Rumanian, Italian, French, Catalan, Spanish, and Portuguese. A language family, such as the Romance family, is a group of languages that have all evolved from a single earlier language, in this case Latin.

But while the Romance family illustrates well the concept of a language family, it is also highly unusual in that the ancestral language - Latin - was a written language that has left us copious records. The usual situation is that the ancestral language was not a written language and the only evidence we have are its modern descendants. Yet even without written records, it is not difficult to distinguish language families. Similarities among certain languages in the word for "hand" allow us to readily identify not only the Romance family (Spanish, Italian, Rumanian), but also the Slavic family (Russian, Polish, Serbo-Croatian) and the Germanic family (English, Danish, German). There are, however, no written records of the languages ancestral to the Germanic or Slavic languages, so these two languages - which must have existed no less than Latin - are called Proto-Germanic and Proto-Slavic, respectively.

If we examine words other than "hand," we find many additional instances where each of these three families is characterized by different-looking roots, just as in the case of "hand." But we also find, from time to time, roots that seem to be shared by these three families; that is, the same root is found in all three families. What is the meaning of such roots? In fact, similarities among language families such as Romance, Germanic, and Slavic have the same meaning as similarities among languages in any one family - they imply that these three families are branches of an even more ancient family. In other words, a language that existed long before Latin, Proto-Germanic, or Proto-Slavic first differentiated into these three languages and then they, in turn, diversified into the modern languages of each family. This larger, more ancient family is known as the Indo-European family and it includes almost all European languages (but not Basque, Hungarian, or Finnish), and many other languages of Iran, Afghanistan, Pakistan, and India.

The Language Families of the World chart shows that the Indo-European family has, in fact, thirteen branches; in addition to Romance, Germanic, and Slavic; there are also Baltic, Celtic, Iranian, Indic, Tocharian, Anatolian, and three single languages that are by themselves separate branches of the family: Armenian, Greek, and Albanian. The thirteen branches of Indo-European are connected to one another by numerous words and grammatical endings. Let's take a look at some examples of this now. The Exploratorium. "The Evolution of Languages." 1999. http://www.exploratorium.edu/exploring/language/language_article3.html (August 10, 2001)

1. Romance family: A group of languages that have all evolved from a single earlier language

Indo-European family: A larger, more ancient family which includes almost all European languages

Proto-Germanic and Proto-Slavic: Ancestral to the Germanic or Slavic languages

2. A (Basque is not mentioned as being part of the Indo-European language family.)

3. The correct order is as follows:

1. Latin language was spoken in Rome two thousand years ago.

2. Latin spread with the Roman conquest of Europe.
 3. The Roman Empire collapsed.
 4. The regional dialects of Latin gradually evolved into the modern Romance languages.
4. A (We know that Spanish is simply a later version of the Latin language that was spoken in Rome two thousand years ago.)
5. C and D (Japanese and Chinese are not mentioned as romance languages.)

The platypus is one of the two animals in the order Monotremata. It is the only member of the mammal family Ornithorhynchidae. Platypus is from the Greek platys meaning “broad” and “pous” meaning foot, referring to the animal's webbed foot.

The platypus has several reptilian characteristics which include using the same opening for reproduction and eliminating waste products, the ability to lay eggs, cervical ribs, and local ascorbic acid synthesis in the kidney. Even though the platypus has these reptile characteristics, it is overall much more mammalian than reptilian. This unique animal has a lifespan of 10 to 15 years.

The platypus is about the size of a household cat. The male platypus's body is about 50 - 60 centimeters long and the female is about 40 - 50 centimeters long. An adult male platypus weighs about 2 kilograms and a female platypus weighs about .9 kilograms. The platypus has a thick covering of waterproof hair all over its body except for the feet and bill. The outer hair is a dark brown with yellowish hair on its underside. There are about 800 hairs per square millimeter. This is denser than the fur of the river otter or polar bear. The platypus has two layers of hair. The top or longer layer is a shiny guard fur with a woolly short fur undercoat. The thermal qualities of the fur allow the platypus to withstand cold temperatures.

The platypus's sensitive, pliable bill is a blue-gray, blackish color with the two nostril holes near the tip. The location of the nostrils allows the platypus to breath while the rest of the body remains under the water surface. The lower bill is smaller than the upper bill. The lower bill is held in place by two elongated dentary bones which is found in all mammals. The bill contains an electro-receptor system which has approximately 850,000 electrical and tactile receptors. When the platypus goes underwater or dives for food, it closes its ears, eyes, and nostrils. Its electro-receptor system detects the electric currents created by the muscle activity of small prey and may even help the platypus detect the electric field created when water flows over prey hidden under rocks, mud, and small debris. As the platypus gathers food in its mouth, it moves the food to its cheek pouches. When it returns to the surface, it pushes the food from its cheek pouches up to its mouth. It then grinds it with its grinding pads.

The ear openings or grooves are on either side of the platypus's head. The platypus does not have external ears. These openings are closed when diving or swimming under water. Out of the water, these ear openings are very sensitive to sounds. The small, beady eyes are very sensitive to movement. Cone cells have been found in the retina. This indicates the possibility of color vision for the platypus. Its eyes are well placed for scanning river banks.

The platypus has four legs which extend horizontally from its body. This arrangement makes it walk on land with a shuffle like a lizard. The front feet have large webs of skin which help to propel the platypus through the water.

1. Bill: Contains an electro-receptor system which has approximately 850,000 electrical and tactile receptors

Ear openings: Located on either side of the platypus's head

Legs: Extend horizontally from its body

2. C (According to the lecture, picture "C" best fits the description of a platypus.)

3. D (The platypus's sensitive, pliable bill is a blue-gray, blackish color with the two nostril holes near the tip. The location of the nostrils allows the platypus to breath while the rest of the body remains under the water surface. The lower bill is smaller than the upper bill.)

4. C (It is learned that the platypus lives near and swims in rivers.)

5. A and C (The platypus has several reptilian characteristics which include using the same opening for reproduction and eliminating waste products, the ability to lay eggs, cervical ribs, and local ascorbic acid synthesis in the kidney.)

Listening Practice Test 5: Meteorites

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10

Meteors are small particles of matter in the solar system that are only directly observable when they fall into the earth's atmosphere. A meteorite is a meteor that reaches the surface of the earth without being vaporized. Meteorites are particularly valuable geologic specimens because they represent samples of planetary bodies (mostly asteroids) which we have not yet obtained through either manned or unmanned space missions. Neither is it likely that samples of these bodies will be available by any other means than fortuitous falls for at least a generation. Thus, as a scientific resource, meteorites provide us with some of our first glimpses of the diverse array of planetary material scattered throughout the inner solar system.

The oldest meteorite specimens are remnants of the very first geologic processes to occur in our solar system 4.6 billion years ago. (The origin of the solar system should not be confused with the origin of the universe, commonly known as the Big Bang, which occurred at least 9 billion years ago and possibly as long ago as 20 billion years.) Our solar system formed when a cloud of interstellar dust and gas collapsed. Because the interstellar cloud had been slowly spinning, the result was a nearly flat rotating disk which we refer to as the solar nebula. Much of the dust and gas in the disk moved to the center of the nebula where it fed a growing protostar which eventually became our sun.

The dust and gas remaining in the nebula was incorporated into primitive planetary material. Initially, nebular dust stuck together (or accreted) to form small, loosely-bound dustballs. In some regions of the solar nebula these dustballs encountered violent, high-temperature events and were melted, forming molten silicate and metal droplets (like lava). Henry Clifton Sorby, a geologist of the 1800's and one of the first to examine these droplets with a microscope, described them as having once looked like fiery rain. Because the high-temperature events were brief, the molten droplets cooled quickly in the nebula and formed millimeter-sized spheres of rock called chondrules. Meteorites containing these objects are called chondrites.

Sometimes the temperatures rose so high in the solar nebula that dust began to evaporate, leaving behind refractory residues. At other times, the temperatures became so low that new dust condensed from the nebular gas (like snow from the air). Over time, chondrules, evaporative residues, and condensates collided with each other and accreted to form nebular sediments and eventually larger bodies called planetesimals (a few to several tens of kilometers in diameter). Our most primitive meteorite specimens are samples of these complex, yet primitive, mixtures of nebular (pre-planetary) material. In many cases these meteorites are so primitive they contain traces of interstellar dust which survived thermal processing in the solar nebula.

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11

The small planetary bodies from which primitive meteorites come formed throughout a large portion of the inner solar system. Within these vast distances material was apparently distributed unevenly and affected by different amounts of thermal processing. Thus, meteoritic parent bodies produced in different regions of the solar nebula had slightly different chemical and structural properties. The three principal groups of primitive chondrites representing these variations are the carbonaceous chondrites, enstatite chondrites, and unequilibrated ordinary chondrites.

1. Molten silicate and metal droplets: Similar to lava

Millimeter-sized spheres of rock: Chondrules

Small particles of matter in the solar system: Meteors

2. B and D (The oldest meteorite specimens are remnants of the very first geologic processes to occur in our solar system 4.6 billion years ago. Our solar system formed when a cloud of interstellar dust and gas collapsed.)

3. The order is as follows:

1. A cloud of interstellar dust and gas collapsed
2. A flat rotating disk called a solar nebula was formed
3. Much of the dust and gas moved to the center of the nebula
4. The Sun was formed

4. A (A meteorite is a meteor that reaches the surface of the earth without being vaporized.)

5. B & D (Stalagmite and icicle are not mentioned as being primitive chondrites.)

Listening Practice Test 6

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12

Picture the most violent of all tornadoes: A violent whirling column of air with speeds of 100 to 300 miles per hour, a funnel which extends downward from a cumulonimbus cloud, almost always seen as rapidly rotating; a slender, a funnel shaped cloud which usually destroys everything in its path. More than anyone else in the history of meteorology, Tetsuya Theodore (Ted) Fujita increased our knowledge of severe storms, especially tornadoes. Here is a brief list of what Tom Grazulis, Director of the Tornado Project, considers to be some of his most notable achievements: Professor Fujita was brought to the United States in the early 1950's by Horace Byers of the University of Chicago. He proceeded to change the course and the speed of severe storm research like no one else in this century. Shortly after his arrival, he began analyzing single thunderstorms the way larger systems had been studied for decades. He saw them as individual weather systems, which he called mesoscale systems.

Fujita introduced the concept of tornado families, which are made up of individual tornadoes, each with a unique path, but spawned by the same thunderstorm. Prior to this, long damage paths were usually considered to be made by a single tornado. Through analysis of the photographs of the Fargo, North Dakota storm, he introduced concepts of thunderstorm architecture and terms like "wall cloud" and "tail cloud". He saw in these storms things that we take for granted today. But it took a genius to see them for the first time. In the 1960's, his analysis of the Palm Sunday outbreak of 1965 again changed the course of how we view a tornado outbreak. For the first time, he mapped the entire outbreak in terms of tornado families. From the thousands of aerial photographs of Palm Sunday damage, he concluded that there was indeed something special about certain tornadoes...that they must contain more than one vortex.

While multiple vortex tornadoes are well known today, he was the first to identify their existence based on damage patterns. In the 1970's, he again revolutionized tornado climatology by giving us a system that linked damage and wind speed. Previous to this, all tornadoes were counted as equals. Today, the term "F5" is used casually by the general public, and in movies. Without Ted, one can only guess whether there would be any system at all. The Super Outbreak of 1974 was the pinnacle of his analysis of a tornado outbreak. For many of the 148 tornadoes, he was able to map the entire path in Fujita Scale-intensity contours. Confusing damage patterns from this outbreak would later allow him to identify a new kind of windstorm. He would also mentor a group of students who today are among the leaders in many areas of meteorology. His ability to simplify concepts of severe storms was a great aid in public education, and allowed others to better educate the public. After 25 years we still use his ideas and terminology.

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13

Later in the 1970's, he turned his focus to weather-related aircraft disasters. From this, and his studies of confusing damage patterns in the Super Outbreak, he identified two other phenomena that we take for granted, the downburst and the microburst. Prior to this, meteorologists had been confused by a bewildering array of gusty winds in and around thunderstorms. By the 1980's, the downburst and microburst were being studied as a unique phenomena generated by things such as an intrusion of dry air. At long last, we had a way to distinguish tornado damage from damage of non-tornadic winds. Then as you know he passed away in 1998, leaving a vast amount of useful research for meteorologists.

1. Tetsuya Theodore Fujita = Introduced the concept of tornado families

Tom Grazulis = Director of the Tornado Project

Horace Byers = From the University of Chicago

2. D (A tornado is described as a violent whirling column of air with speeds of 100 to 300 miles per hour, a funnel which extends downward from a cumulonimbus cloud, almost always seen as rapidly rotating; a slender, a funnel shaped cloud which usually destroys everything in its path.)

3. The correct order is as follows:

1. The downburst and microburst were being studied as a unique phenomena generated by things such as an intrusion of dry air. (1980's)

2. Fujita revolutionized tornado climatology by giving us a system that linked damage and wind speed. (1970's)

3. Analysis of the Palm Sunday outbreak was done by Fujita. (1965)

4. Fujita came to the United States. (Early 1950's)

4. A & B (It is learned that Fujita was a mentor to students, which means he was a counselor or guru to them.)

5. A & C (By the 1980's, the downburst and microburst were being studied as a unique phenomena generated by things such as an intrusion of dry air. At long last, we had a way to

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14

distinguish tornado damage from damage of non-tornadic winds. From this, it is learned that the downburst and the microburst are examples of non-tornadic winds.)

Listening Practice Test 7

More than thirty-six years after he made history as the first American to orbit the Earth, Senator John H. Glenn, Jr. will return to space as part of a multi-national crew with the launch of Space Shuttle Discovery in late October. The flight, designated STS-95, will involve more than eighty scientific experiments investigating mysteries that span the realm from the inner universe of the human body to studies of our own Sun and its solar activity.

Back on February 20, 1962, when Glenn flew in his Friendship 7 Mercury capsule, the largest mystery facing the young NASA space program was whether humans could even survive in the hostile environment of space. In the 121 space missions since Glenn's flight during the Mercury, Gemini, Apollo, Skylab, and Shuttle programs, more than 200 Americans have flown – and thrived – in space. Glenn, who inspired many current astronauts to pursue space flight as a career, continues to inspire people of all generations as he prepares for a return to space.

The wealth of scientific data accumulated during these space flights validate apparent similarities between the effects of space flight and aging. Glenn will be a test subject for specific investigations which mimic the effect of aging, including loss of muscle mass and bone density; disrupted sleep patterns; a depressed immune system; and loss of balance.

Scientific endeavors on the STS-95 mission are not limited to furthering an understanding of the human body, but also will expand our understanding of the closest star to our planet, the Sun, and how it affects life on Earth. The Spartan 201 spacecraft will be released by the crew on the fourth day of the mission and will spend two days flying free studying heating of the solar corona and the acceleration of the solar wind that originates in the corona and how that phenomenon affects activities both in Earth-orbit and on the ground. The Sun drives our weather, and energetic eruptions on the Sun are capable of disrupting satellites, communication and power systems. The Sun also establishes the space environment in which our communications, weather, defense and human spaceflight resources operate. Upon completion of two days of solar observations, Discovery's crew will haul the spacecraft back into the Shuttle's cargo bay and return it to Earth.

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15

Six astronomical instruments comprise the International Extreme Ultraviolet Hitchhiker Experiment (IEH-3) which will be carried in Discovery's payload bay. These six diverse instruments support a range of experiments including studies of stars, remnants of supernovae, and star formation. Also tucked in the payload bay is a variety of materials and equipment destined for use during the third Hubble Space Telescope servicing mission, currently scheduled for a mid-2000 launch. Referred to as HOST, the Hubble Space Telescope Optical Systems Test payload, will demonstrate that actual electronic and thermo-dynamic equipment scheduled for installation into the Telescope performs acceptably in the radiation and zero gravity environment of space.

Discovery also will carry a Spacehab module to orbit. Inside Spacehab, almost 30 smaller experiments ranging from materials science, to plant growth, to developing new techniques for delivering vital anti-tumor medications, will be conducted by the astronauts. Sponsored by NASA, the Canadian Space Agency, the European Space Agency, and the Japanese Space Agency NASDA, these studies take the best advantage of the unique environment of space to conduct these diverse studies.

1. Space Shuttle Discovery = A spacecraft

STS-95 = A space flight

NASA = Space program

2. A (Since it is learned that Glenn flew in his Friendship 7 Mercury capsule, it can be inferred that picture A would likely represent a capsule. It is the only vehicle out of the four answer choices that can fly in outer space.)

3. The correct order is as follows:

1. John Glenn is the first American to orbit the earth.
2. He inspires many astronauts to pursue space flight as a career.
3. He goes on STS-95 space flight.
4. Glenn is a test subject for specific investigations which mimic the effect of aging.

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16

4. C (It is learned that the "Sun drives our weather," which means it dramatically affects our weather.)

5. C & D (The Sun drives our weather, and energetic eruptions on the Sun are capable of disrupting satellites, communication and power systems.)

Listening Practice Test 8

We have always had a strange love-hate relationship with wetlands. We may wax poetic about the moss-draped cypress trees in the moonlight, and thrill to the sight of a huge alligator slithering off the banks of the bayou. But at the same time, we also fear the dark, impenetrable reaches of the swamp, and curse the boiling clouds of mosquitoes that hang over the water. "Bad vapors" drift out of the swamp, a miasma that sickens those who live nearby. Before the advent of modern medicine, residents believed that these "vapors" could literally make you sick. Early settlers in New Orleans often awoke to the sound of cannons being fired in the vicinity of Canal Street, in the hopes that their sulfurous smoke would cleanse the air and prevent "malaria" and other diseases. We usually fear what we do not know, and what we do not understand. Wetlands have always been pictured as dark, damp, and dismal, places of evil deeds, the lair of pirates and thieves, home to snakes and vermin, haunts of werewolves, vampires, and voodoo queens.

We get "bogged down" or "mired" in our work when can't make any headway. When we have too much to do, we say that we are "swamped". The word "swamp" shares a common origin with the word "sump", which is a hole or pit where you dump nasty things you don't want to deal with, like a cesspool. The word "bogeyman" may be derived from the word "bog". Swamp Thing, featured in marvel comics and cartoons, is a cultural icon born out of this conflict. Trapped in the body of a shambling monster, forced to live in the darkest recesses of the swamp, he fights against the forces of evil before slinking back to his dark sanctuary.

But wetlands are economically and ecologically valuable in many ways. Wetlands support an abundance of life. Many plants, like cypress and tupelo trees, are specifically adapted to wetland habitats. There are relatively few vertebrates, however, that can survive in this habitat, although several species spend at least part of their lives in swamps. Some fish, like

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17

gar and bowfin, are permanent swamp residents. The most common species in stillwater swamps are fish that can gulp oxygen by sticking their heads out of the water, fish like the mosquitofish (*Gambusia*), and fish that can otherwise tolerate low oxygen levels. Many other species of fish use the swamp as a nursery for juvenile fish, or move into swamps to feed during periods of high water levels. Unlike other vertebrates, reptiles and amphibians are superbly adapted for life in the swamp. Alligators, cottonmouths and other snakes, lizards like the skink, and lots and lots of frogs live in the swamp.

Birds are also important members of the swamp community. Predators like the Barred Owl, or the Marsh Hawk or Red-Tailed Hawk, are commonly seen flying through the swamp. Several passerine species (perching birds) can be found in the swamp, birds like warblers, woodpeckers, and wrens. Wading birds, ducks, and other waterbirds are specifically adapted to a wetlands environment. Wading birds commonly locate their huge nesting colonies in the swamp, where many potential predators can't reach them.

1. Bayou = A type of wetlands

Vermin = Animals

Cypress and Tupelo = Trees

2. D (Many plants, according to the lecture, like cypress and tupelo trees, are specifically adapted to wetland habitats.)

3. A & C (Predators like the Barred Owl, or the Marsh Hawk or Red-Tailed Hawk, are commonly seen flying through the swamp.)

4. Correct answer = D (Unlike other vertebrates, reptiles and amphibians are superbly adapted for life in the swamp. Alligators, cottonmouths and other snakes, lizards like the skink, and lots and lots of frogs live in the swamp.)

5. A & B The word "swamp" shares a common origin with the word "sump", which is a hole or pit where you dump nasty things you don't want to deal with, like a cesspool. The word "bogyman" may be derived from the word "bog". "Bog" is also similar to the word swamp.

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18

Listening Practice Test 9

The Great Basin Desert lies predominantly in the Intermountain West, a region bounded on the west by the Sierra Nevada-Cascade mountain axis and on the east by the Rocky Mountains. The mid-nineteenth century explorer Captain John C. Fremont perceived the landscape to be a giant enclosed basin; convinced by his 1843-44 exploration that the area lacked an outlet to the sea, he named it the Great Basin.

In fact, the name is somewhat misleading in that it suggests a single large basin. Actually, the Intermountain West is composed of 150 basins and approximately 160 discrete mountain ranges. This landscape of alternating mountain ranges and their adjacent basins is the physiographic zone known as the Basin and Range Province.

The Province has valley floors at high elevations, often more than 4000 feet. Protruding from the basins are mountain ranges, which were raised through the process of faulting. Most of the ranges have a north-south orientation, and many have peaks higher than 10,000 feet; several exceed 12,000 feet. This means that in some areas mountain peaks rise 5000 to 6000 feet above the surrounding basins.

The wearing away of the mountains by the inexorable forces of wind and water has filled many of the valleys with deep sediments, often forming broad plains. The low areas of these plains or valleys frequently contain ephemeral lakes, called playas, which seldom contain water except during years of unusually high precipitation.

During the late Pleistocene epoch, beginning about 75,000 years ago and ending 8000 to 12,000 years ago, many of the valleys contained somewhat more permanent lakes. Two of these ancient lakes are especially notable, because at one time or another they covered vast areas, and the sediments derived from them continue to affect the distribution of plants and animals even today. More important, there are existing lakes that originated from these bodies of water. One of the Pleistocene lakes, Lake Lahontan, existed in an area today that includes northwestern Nevada, southern Oregon, and northeastern California. Lake Lahontan once covered 8495 square miles and was 886 feet deep. Today it persists mainly in a few scattered remnants, including Pyramid and Walker lakes, in Nevada. Another lake, Lake Winnemucca, existed until 1938; however, a diversion dam built for irrigation caused Lake Winnemucca to go dry.

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19

Pyramid Lake remains a viable, only slightly salty, lake covering an area approximately thirty miles long and seven miles wide. A form of trout, the Lahontan Cutthroat, occurs in the lake. This species is a relict from the time when it was the only predatory fish in Lake Lahontan. The Lahontan is the largest cutthroat known; a specimen taken in 1925 from Pyramid Lake weighed forty-one pounds. Other fish, native and introduced, occur in the lake and are the source of food for a large American White Pelican colony on Anaho Island, at the southeastern end of the lake.

The second large Pleistocene lake occupied more than 20,000 square miles in Utah, Nevada, and Idaho. This body of water, Lake Bonneville, was approximately 1,083 feet deep. The remainders of the shores of Lake Bonneville form a series of terraces at roughly 5,150 feet in elevation, and can easily be seen today along the Wasatch Mountains of Utah. The remnants of Lake Bonneville include the Great Salt Lake and Utah Lake in northern Utah, and Sevier Lake, a large playa in west-central Utah.

1. Ephemeral lakes = Playas

A large enclosed area lacking an outlet to the sea = Giant basin

Slightly salty body of water = Pyramid Lake

2. C (A form of trout, the Lahontan Cutthroat, occurs in the lake. This species is a relict from the time when it was the only predatory fish in Lake Lahontan.)

3. The correct order is as follows:

1. Many of the valleys in the "Great Basin" contained somewhat more permanent lakes. (75,000 years ago and ending 8000 to 12,000 years ago)

2. Explorer Captain John C. Fremont named an area the "Great Basin." (1843-1844)

3. A forty-one pound Lahontan Cutthroat specimen was taken from Pyramid Lake. (1925)

4. Lake Winnemucca went dry because of a diversion dam. (1938)

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20

4. D (Other fish, native and introduced, occur in the lake and are the source of food for a large American White Pelican colony on Anaho Island, at the southeastern end of the lake.)

5. B & D (One of the Pleistocene lakes, Lake Lahontan, existed in an area today that includes northwestern Nevada, southern Oregon, and northeastern California. Lake Lahontan once covered 8495 square miles and was 886 feet deep. Today it persists mainly in a few scattered remnants, including Pyramid and Walker lakes, in Nevada.)

Listening Practice Test 10

Achilles Tendonitis causes inflammation and degeneration of the achilles tendon. The achilles tendon is the large tendon located in the back of the leg that inserts into the heel. The pain caused by achilles tendonitis can develop gradually without a history of trauma. The pain can be a shooting pain, burning pain, or even an extremely piercing pain. Achilles tendonitis should not be left untreated due to the danger that the tendon can become weak and ruptured.

Achilles Tendonitis is aggravated by activities that repeatedly stress the tendon, causing inflammation. In some cases even prolonged periods of standing can cause symptoms. It is a common problem often experienced by athletes, particularly distance runners. Achilles Tendonitis is a difficult injury to treat in athletes due to their high level of activity and reluctance to stop or slow down their training.

Individuals who suffer from achilles tendonitis often complain that their first steps out of bed in the morning are extremely painful. Another common complaint is pain after steps are taken after long periods of sitting. This pain often lessens with activity.

There are several factors that can cause achilles tendonitis. The most common cause is over-pronation. Over-pronation occurs in the walking process, when the arch collapses upon weight bearing, adding stress on the achilles tendon. It is defined as rotating the foot forward toward the midline.

Other factors that lead to achilles tendonitis are improper shoe selection, inadequate stretching prior to engaging in athletics, a short achilles tendon, direct trauma (injury) to the tendon, and heel bone deformity.

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Athletes, particularly runners, should incorporate a thorough stretching program to properly warm-up the muscles. They should decrease the distance of their walk or run, apply ice after the activity and avoid any up hill climbs. Athletes should use an orthotic device, heel cup, or heel cradle for extra support.

A heel cup or heel cradle elevates the heel to reduce stress and pressure on the achilles tendon. The device should be made with light-weight, shock absorbing materials. An orthotic device can be used to control over-pronation, support the longitudinal arch, and reduce stress on the achilles tendon.

Anti-Shox® Heel Cups have a unique, patented deep heel cushion designed by a doctor to absorb shock and relieve heel pain and achilles tendonitis. The ribbed platform and deep heel seat protect the area most sensitive to pain. Anti-Shox Heel Cups are available in two styles: sports heel cups for athletic footwear and dress heel cups for dress and casual footwear. If the problem persists, consult your foot doctor.

1. Achilles tendonitis = Inflammation of the achilles tendon

Over-pronation = Rotation of the foot forward toward the midline

Direct trauma = Blunt force injury

2. C (Anti-Shox® Heel Cups have a unique, patented deep heel cushion designed by a doctor to absorb shock and relieve heel pain and achilles tendonitis. The ribbed platform and deep heel seat protect the area most sensitive to pain.)

3. A & D (Individuals who suffer from achilles tendonitis often complain that their first steps out of bed in the morning are extremely painful. Another common complaint is pain after steps are taken after long periods of sitting. This pain often lessens with activity.)

4. D (The achilles tendon is the large tendon located in the back of the leg that inserts into the heel.)

5. B and C (Other factors that lead to achilles tendonitis are improper shoe selection, inadequate stretching prior to engaging in athletics, a short achilles tendon, direct trauma (injury) to the tendon, and heel bone deformity.)

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22

Listening Practice Test 11

A time capsule is a container that is filled with objects that show important things about the way people live in a certain time and place. The container is sealed and buried, so that, years later, someone can dig it up, open it, and understand about how the people who buried it, lived. For example, if you made a time capsule today, you might include your favorite computer game, one of your favorite books, and one of your school pictures.

There is no time capsule with objects that tell us about the first string instruments. Like many other things which began before history was written down, no one really knows when or how the first string instruments were made. But from very ancient documents and drawings, we know that for many centuries people in all parts of the world have made music by setting strings of various kinds in motion to produce sounds.

Have you ever shot a bow and arrow and heard the "Zing" of the string as you let the arrow go? Perhaps early hunters heard the sound as they hunted using bows and arrows, and found ways to change the sound and use it to make music. Some of the earliest instruments we can read about in ancient writings like the Bible or Greek Literature use plucked strings like the harp. But a cave drawing in France that is fifteen centuries old (The Grotto of the Trois Freres) shows a figure with a bow held to its mouth and no arrow. And in some countries in Africa and Asia, as well as in the Appalachian region of the United States, the musical bow is still used. The musician holds the bow in his mouth and produces the sound by plucking the string or by hitting it with a stick. By opening or closing his mouth he can change the sound of the vibrating string.

Pulling a bow across a string to make it vibrate probably started in the Far East and came to Europe approximately a thousand years ago. Since then, all over the world people have made fiddles of different sizes from all kinds of materials and played them with bows. Violins, violas, cellos and double basses like those used in the Dallas Symphony today, first began to be made in Italy about 300 years ago. Originally, the strings were made of gut. Now they are made of steel or steel-wrapped synthetic materials. The resonating box is made of wood and plucking or pulling the hair of the bow (which is horsehair) across the strings produces the sound. String instruments which are not used in the symphony orchestra, such as the banjo and the guitar, are always plucked or strummed, rather than played with a bow. Technology has let people continue to create new kinds of string instruments, such as the hyper-violin and the hyper-cello.

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Although the musical bow held in the player's mouth and the modern violin are very different, all string instruments are alike in three ways:

- They have strings made of something which will vibrate and produce sound.
- Something is used to hit, pluck, or pull across the string to make it vibrate.
- A hollow container of some kind (the player's mouth with the musical violin-the body of a modern day violin) is placed under the string to make the sound louder.

If string instruments continue to evolve, how might they look and sound in a thousand years from now?

1. Grotto = Contains pictures of old stringed instruments

Gut = Material used to make strings

Hyper-violin = A new type of stringed instrument

2. C (Since a saxophone has no strings, it can be inferred that it is not a stringed instrument.)

3. The correct order is as follows:

1. The bow and the arrow are invented. (People probably used the bow and arrow before stringed instruments were invented.)
2. The harp is invented. (It is considered one of the earliest instruments)
3. Violins are first made in Italy. (300 years ago)
4. Strings are made of steel or steel-wrapped synthetic materials. (Modern day)

4. B (Some of the earliest instruments we can read about in ancient writings like the Bible or Greek Literature used plucked strings like the harp.)

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24

5. A & C (String instruments are alike in three ways: They have strings made of something which will vibrate and produce sound. Something is used to hit, pluck, or pull across the string to make it vibrate. A hollow container of some kind (the player's mouth with the musical violin-the body of a modern day violin) is placed under the string to make the sound louder.)

Listening Practice Test 12

The day of April 14, 1912 was beautiful. The sea was calm and the sky was bright and clear, but the air was chilly. The night would be a clear but moonless one. First-class passengers gathered in the dining room for "Divine Services" in which a song ending with the words "Peril on the sea" was sung.

Harold Bride and John Phillips, the wireless room operators, were busy with receiving and transmitting telegrams from the first-class passengers. More ice warnings came in also, of which were directed to Capt. Smith for his review. As the day went on the temperature began to drop due to the growing ice fields surrounding the Titanic.

First-class passengers passed the day and early evening listening to the band play. Others played cards, while others walked the inner decks. Second-class passengers went about talking and dancing. In the second-class dining salon, second-class passengers gathered to participate in singing religious hymns lead by Rev. E. C. Carter. Third-class passengers played cards and danced. Everything seemed as perfect as the night could have possibly been.

After the dinners had been served and the necessary talking about had been done, many passengers settled in for the night. Thomas Andrews opted to spend this night alone in his cabin to study plans of the Titanic to see what changes he should make. About nine o'clock, Capt. Smith headed off to bed and told Officer Lightoller "If anything becomes doubtful, let me know at once." Titanic was now traveling at 22.5 knots. The sea was still calm and the temperature had dropped to a chilly thirty one degrees. Frederick Fleet and Reginald Lee stood in the crow's nest acting as lookouts. Their binoculars having been misplaced at Southampton made seeing anything difficult. With the Atlantic being so calm, icebergs would prove difficult to spot. Without the water breaking at the base, icebergs were virtually invisible.

More ice warnings came across the wireless room of which were ignored. About eleven o'clock, Phillips received a warning from the Californian stating that the ship was blocked by ice. Phillips signaled back for the Californian to "Shut up." From there, the Californian operator shut off his receiver and went to bed. The public rooms of the Titanic were in the process of being evacuated. Many had already retired for the evening. About eleven forty, Fleet became

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occupied by a hazy mass he saw in the near distance. He and Lee attempted to figure out what the haze was, but realized it was an iceberg when they were about to hit it.

Fleet immediately sounded the crow's nest bell saying, "Iceberg right ahead!" over the telephone. Sixth Officer Moody replied "Thank you" and hung up the phone. First Officer William Murdock ordered the engines to be stopped, reversed, and then sent "hard to port." The ship's water tight doors were immediately shut. The Titanic slowly moved to the port direction, but despite all efforts the starboard side hit the iceberg causing tiny rips in the Titanic's steel. Titanic was doomed.

1. Southampton = City

Knots = Used to measure a vessel's speed

Crow' nest = A type of lookout

2. A (It is learned that the Titanic is a ship.)

3. The correct order is as follows:

1. Ice warnings come by telegram.
2. Captain Smith goes to bed.
3. Iceberg is spotted, and the ship hits it on the side.
4. The ship is doomed.

4. C (An iceberg is a large piece of ice which floats in the ocean.)

5. C & D (Answer one is false since they spotted the iceberg right before the collision; answer two is false since it is learned that the captain went to bed at about 9:00 P.M. However, answers three and four are correct according to the lecture.)

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Listening Practice Test 13

Researching the use of asexual reproduction in industry, my interest lay mainly in its implications, its disadvantages and advantages, and scientific use. Micro propagation, the reproduction of large numbers of plants from small pieces of the stock plant, is used as an alternative to more conventional methods of plant propagation (fertilizers, plant hormones, etc.). One single cell of a leaf can regenerate whole plants. Depending on the species, the original tissue can be taken from the shoot tip, leaf, bud, stem or root tissue. The original tissue of the stock plant is not destroyed in the process. It is worth mentioning that still experts have problems micropropagating specific species, like wooden plants.

In micro propagation one uses the plant's protoplasts, a single cell that has been stripped of its cell wall by enzymatic treatment. A single leaf yields tens of millions of single cells. That protoplasts tend to fuse with each other leads to somatic hybridization. Taking two protoplasts of the same species of plants with different characteristics can, therefore, lead to a single plant with both characteristics.

The evidence for this theoretically possible procedure is lacking yet. In gene-splicing experiments, genetic material is incorporated into a cell. For example: Insulin has already been made by incorporating genetic material into bacteria. The bacterial cultures became synthesizers of insulin. Theoretically, it would also be possible to incorporate genetic characteristics for accumulating high sugar content in a sugar maple. In the European Union and elsewhere, genetically manipulated fruits are already unlabeled on the market. One of the advantages in micro propagation lies in the ability to improve plants through using tissue culture to plant propagation.

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Plant germ plasm is manipulated at the cellular level. Research has already been conducted and practiced on shrubs. Disease, insect or stress resistant plants and superior individuals of a specific species can be selected and propagated through tissue culture. The natural variability is exploited by inducing chemical and physical agents or radiation known to cause mutations. Pathogen-free plants have, for example, been obtained, maintained and mass-propagated.

After all, one of the main advantages is that one single plant can be multiplied into several new plants. Moreover, the parent plant is not destroyed by the process. But the deeper we do our research into micro propagation, the more we can observe lack of evidence and knowledge. Do we really think that we can control and manipulate life deep down into the genetic structure ? What if our experiments get out of control ? We don't know anything about the long term implications of genetic manipulations. Where are our limits ? When do we want to create the perfect human being by micro propagation and genetic manipulations ? Does it lead us to happiness to know more and more, to get more quantity and better quality ? The social, psychological and moral implications of genetic manipulation seem extremely important, too important to be postponed or forgotten because we are so fascinated by our new discoveries and power over nature.

1. Micro-propagation = Reproduction of large numbers of plants from small pieces of the stock plant.

Somatic hybridization = The result of protoplasts that fuse with each other.

Gene-splicing = Genetic material is incorporated into a cell.

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2. C (Micro-propagation is used as an alternative to more conventional methods of plant propagation i.e., fertilizers, plant hormones, etc.)

3. Plant germ plasm = Is manipulated at the cellular level.

Radiation = Known to cause plant mutations.

Enzymatic treatment= Stripping a single cell of its cell wall.

4. B

5.B & D (Experts have problems micropropagating specific species, like wooden plants; there is no mention of using micropagation to clone human beings.)

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Listening Practice Test 14

Although parrots are not often mentioned in discussions about nonhuman intelligence, much data exist to suggest that psittacids are among the more intelligent animal species. During the 1940's and 1950's, for example, laboratory researchers in Europe demonstrated that Grey parrots could learn the kinds of symbolic and conceptual tasks that are generally considered as pre- or co-requisites for complex cognitive and communicative skills. More recently, field studies have reported behaviors that, when observed in nonhuman primates, are considered as evidence for human-like intelligence. Such behaviors include cooperative alarm signaling ("sentinel behavior") in flocks of Indigo macaws and individual recognition in Bahamian Amazons.

Another sign of intelligence, thought to be absent in most nonhuman animals, is the ability to engage in complex, meaningful communication; only recently has the general perception of parrots as mindless mimics been shown to be incorrect. In the late 1960's, researchers lacked knowledge of psittacine communication in the wild, and assumed that natural behaviors would not differ greatly from what had been observed in captivity: the ability of parrots to reproduce, with great accuracy, sounds such as those of human speech, but little (if any) ability to use these vocalizations in a meaningful way. The few studies in the 1950's and 1960's to challenge these perceptions -- e.g., Mowrer's attempts to teach mimetic birds to engage in meaningful communication with humans -- used standard psychological laboratory training paradigms and were not successful. Since the 1970's however, researchers working both in the field and in aviary settings have provided data to indicate that natural psittacine vocalizations might indeed be meaningful: Vocalizations appear to mediate social interactions between mated pairs and among flock members, and not only the physical

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30

structure but also the appropriate use of these vocalizations seems to be learned. Such findings on sophisticated vocal behaviors, when taken in conjunction with the data on complex problem-solving abilities, suggested that the psychologists' failures to achieve meaningful communication with their birds might be due to inappropriate training techniques, rather than to any inherent lack of intelligence in the psittacine subjects.

My research has been a test of this premise. Starting in the late 1970's, I developed techniques that integrated the experimental rigor of the laboratory with what little was then known about psittacine communication in nature; I also borrowed ideas from projects designed to examine the bases for human social learning. I have used these techniques successfully to establish a form of interspecies communication with an African Grey parrot. The existence of such behavior demonstrates that at least one avian species is capable of interactive, referential communication. My students and I, moreover, use the ability to communicate to test the extent of this bird's intelligence. The following sections provide details of the procedures and a short summary of the results.

The experimental subject, an African Grey parrot named Alex, has been the focus of a study on interspecies communication and avian intelligence since June, 1977. At the start of the project he was approximately 13 months old and had received no prior formal vocal instruction. He has free access to the laboratory room while trainers are present (~ 8 hrs/day), but is confined at other times to a cage (~62x62x73 cm) and the desk upon which it rests. Water and a standard psittacine seed mix (sunflower seeds, dried corn, oats, etc.) are continuously available throughout the day; fresh fruits, vegetables, specialty nuts (cashews, pecans, almonds, walnuts), and toys are used in training and are provided at his vocal requests.

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1. Psittacids = A bird species

Alarm signaling = A human-like intelligent behavior

Symbolic and conceptual tasks = Prerequisites for cognitive and communicative skills

2. D (A parrot is a bird.)

3. The chronological order is as follows:

1. Laboratory researchers in Europe demonstrated that Grey parrots could learn the kinds of symbolic and conceptual tasks. (During the 1940's and 1950's)

2. Mowrer's attempts to teach mimetic birds to engage in meaningful communication with humans -- used standard psychological laboratory training paradigms and were not successful. (1950's and 1960's).

3. Researchers lacked knowledge of psittacine communication in the wild. (In the late 1960's)

4. An African Grey parrot named Alex becomes the focus of a study on interspecies communication and avian intelligence. (Since June, 1977).

4. D (He has free access to the laboratory room while trainers are present (~ 8 hrs/day), but is confined at other times to a cage (~62x62x73 cm) and the desk upon which it rests.)

5. A & C (Water and a standard psittacine seed mix (sunflower seeds, dried corn, oats, etc.) are continuously available throughout the day; fresh fruits, vegetables, specialty nuts (cashews, pecans, almonds, walnuts).

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Listening Practice Test 15

Vampire bats are very ordinary looking, weighing about one ounce and with a body the size of an adult's thumb. They are 2 3/4 inches in length and have an 8 inch wingspan. Their colonies are quite structured with strong social bonds, grooming each other and recognizing their fellows with voice and smell. The structure is imperative to their survival, as there are many nights when a bat may not find a host to feed on. At that point, the hungry bats are fed from others through a process of regurgitation. In the wild, vampire bats live to about 9 years old, but can reach 20 years in captivity. Vampire bats mate all year round and usually have only one offspring per year. Gestation is 6-8 months in length.

Bats are the only true flying mammals, with about 925 different species identified. Of all these species, only the common vampire bat is able to maneuver on the ground as well as in the air. Vampire bats can move side to side and backward, similar to a spider. Instead of taking off in flight from the ground, these bats actually launch themselves into the air with powerful pectoral muscles. The force comes from the bat extending its hind knees, leaning forward and using its forelimbs. The bat also invokes its triceps muscle and very long thumb. While the jump only takes about 30 milliseconds, the bat catapults itself about 4 feet into the air. Although a few other species of bats move readily on the ground and some take off from the ground, no other species possess the extreme terrestrial agility and jumping ability of *Desmodus*. Once in the air, the transition into flight is basically one fluid motion. Since the vampire bat feeds at ground level, their agility and fast take-off is an amazing advantage.

Feeding on the blood of animals like cows, pigs, and horses, the vampire bat requires about two tablespoons of blood each day. Locating their prey is a combination of smell, sound, echolocation, and possibly heat. While they do not actually suck blood from their host, they make a small incision and lap up the blood. Since they do not chew their food, they have fewer teeth of any other bat. They generally approach their prey from the ground.

They have heat sensors on their noseleaf for locating capillary-rich areas of the skin; modified canines for fur clipping; long, sharp incisors for painlessly opening a wound; anticoagulants to prevent clotting; and a grooved tongue to help move blood rapidly to the mouth. While the bat may consume up to 60% of its body weight in blood and it only needs the red blood cells, it will begin excreting plasma before its meal is over. With a specialized stomach and kidneys, the vampire rapidly removes the plasma as it may take up to twenty minutes to the bat to finish its meal. Due to length of time and the invasive nature of its feeding, it is clear the vampire bat needs its deftness and agility to be successful. Observations of *Desmodus*

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scrambling over the backs and necks of animals prior to feeding or to avoid movements of the host animal to brush them off, and running or hopping about on the ground while feeding, illustrate the adaptive value of this effective terrestrial locomotion.

1. Colonies = Structured and with strong social bonds

Pectoral muscles = Used to launch the bat into the air

Gestation = Six to eight months in length

2. C (Vampire bats can move side to side and backward, similar to a spider.)

3. The logical order is as follows:

1. Using smell, sound, echolocation, and possible heat, the bat locates its prey.
2. The bat generally approaches its prey from the ground.
3. The bat makes a small incision and laps up the blood.
4. It may take up to twenty minutes for the bat to finish its meal.

4. C (It is learned that in the wild, vampire bats live to about 9 years old, but can reach 20 years in captivity. Therefore, bats live longer when they are caged.)

5. B & D (It is learned that the bat has long, sharp incisors for painlessly opening a wound, the bat may consume up to 60% of its body weight in blood, it will begin excreting plasma before its meal is over and running or hopping about on the ground while feeding, illustrate the adaptive value of this effective terrestrial locomotion. Thus, answers two and four are correct.)

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