

CONTESTANT NUMBER:

FOR GRADER USE ONLY

Score Test Below:

_____out of 75. Initials_____

_____out of 75. Initials_____

Papers contending to place:

_____out of 75. Initials_____



**University Interscholastic League
A+ Listening Contest • Answer Sheet**

Write your contestant number in the upper right corner, and circle your grade below.

Circle Grade Level : **5 6 7 8**

1. A B C D

2. A B C D

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14. A B C D

15. A B C D

16. A B C D

17. A B C D

18. A B C D

19. T F

20. T F

21. T F

22. T F

23. T F

24. T F

25. T F

UIL LISTENING CONTEST - GRADES 5/6
INVITATIONAL MEET 2024-2025

"White-Tailed Deer"

While driving down country roads in Texas, it's not unusual to see white-tailed deer in the distance grazing in fields of green grass and flowers. White-tailed deer (*Odocoileus virginianus*) are among the most iconic and widely distributed large mammals in Texas and North America. While virtually everyone in the central and eastern United States has seen a white-tailed deer, most people know very little about them. There are a number of interesting tidbits about whitetail deer.

White-tailed deer belong to the family Cervidae, which originated in the Miocene epoch around 20 million years ago. The genus *Odocoileus* emerged in the Pliocene epoch, with white-tailed deer being one of the most widespread and successful members of this genus. The Pliocene epoch extended from 5.333 million to 2.58 million years ago. It is the second and most recent epoch of the Neogene Period in the Cenozoic Era. The Pliocene follows the Miocene Epoch and is followed by the Pleistocene Epoch.

One reason white-tailed deer were able to survive through the ages is their ability to adapt to their surroundings. One of the most unique ways they adapt is their diverse diet. They are primarily browsers. A browser is a type of herbivorous animal that specializes in eating leaves, fruits of high-growing woody plants, soft shoots and shrubs. A browser generally does not feed on grass or other low growing vegetation. They can also be defined as animals that mainly eat non-grasses.

Whitetail deer can feed on twigs, bark, leaves, shrubs, the nuts and fruits of most vegetation, lichens, and other fungi. Plants such as yucca, huajillo brush, prickly pear cactus, ratama, comal, and a range of tough shrubs can be eaten if they live in a desert area. This is due to the fact that their digestive system is highly efficient in extracting nutrients from fibrous plant material. They are even able to switch to grazing depending on food availability. This enables them to thrive in different habitats from forests to

1:00

deserts to grasslands. Perfect for life in Texas. Though almost white-tails are entirely herbivorous, they have even been known to feed on nesting songbirds, field mice, and birds trapped in mist nets due to lack of other food.

Another adaptation is their coat. The coat of the white-tailed deer has coloration that serves as camouflage as well as protection from heat and cold. In summer, their reddish-brown coat blends with the forest floor, while in winter, it turns grayish brown to match snow-covered landscapes. This seasonal color change, known as molting, helps them evade predators and regulate body temperature. An indication of a deer's age is the length of the snout and the color of the coat, with older deer tending to have longer snouts and grayer coats.

2:00

Two more remarkable adaptations are their keen sense of smell and hearing. These senses are essential for detecting predators and communicating with other deer through vocalizations and scent marking. The most well-known scent gland in deer is the tarsal gland, located on the inside of their hind legs. When a deer rubs the gland against trees or other objects, it leaves behind a scent mark. This scent is used to warn other deer of their presence as well as to attract mates during the breeding season.

During the breeding season, or rut, male deer, known as bucks, compete for access to females, or does, through vocalizations, displays, and sometimes physical combat. This period is characterized by increased activity and aggression among males as they seek to establish dominance and mate with receptive females. Females, on the other hand, exhibit more subtle behaviors during the rut, including mate selection and avoidance of aggressive males. Once mated, females experience a gestation period of around 200 days, after which they give birth to one to three fawns in the spring or early summer.

3:00

Unlike humans, fawns are born precocial. This means that they are born in an advanced state and can feed themselves and move independently almost immediately. Their newborn coats are spotted which provides camouflage against predators. As mammals they do rely on their mother's milk for nourishment during the first few months, but

they soon transition to a diet of vegetation as they move toward adulthood. When seeking food, mothers leave their offspring hidden in forest vegetation. A fawn starts to follow its mother as she goes off to forage when it is about 4 weeks old. At 8 - 10 months old, they are weaned.

At one-year-old, young males leave their mothers but young females will often stay with them for two years. Males regrow their antlers every year. Males without branching antlers are often termed "spikehorn", "spiked bucks", or simply "spikers". The spikes can be quite long or very short. The length and branching of antlers are determined by nutrition, age, and genetics. Spiked bucks are different from "button bucks" or "nubbin' bucks", which are male fawns and are generally about 6 to 9 months of age during their first winter. They have skin-covered nobs on their heads. Males shed their antlers when all females have been bred, from late December to February.

4:00

White-tailed deer are crepuscular, which means that they are most active during dawn and dusk hours of the day. By being active during the hours of limited light, they are able to avoid predators more easily while still having sufficient light to see to forage for food. During the day, deer often rest in secluded areas, such as thickets or dense vegetation, to conserve energy and avoid detection.

White-tailed deer are usually considered solitary, particularly in summer. Their basic social unit is mother and fawns, although sometimes they do graze together in herds that can number hundreds of individuals. Bucks and does remain separate from each other except during the mating season. Bucks usually live alone or within small groups alongside other bucks. They use a number of forms of communication, such as sound, odor, body language, and marking with scratches. One trait of white-tails that sets them apart from other deer is the characteristic white underside to its tail. When alarmed, a white-tailed deer will raise its tail to warn other deer.

A very interesting fact about white-tailed deer is that they have dichromatic vision. This means that they see colors in the spectrum of two of the primary colors - in this case

blue and yellow. They cannot easily differentiate different shades of colors like red or orange. This is why hunters often wear bright orange. It is easily spotted by people (who have trichromatic vision and can see all three primary colors easily) but not by deer.

5:00 Because white-tailed deer live in many of the same areas as humans, it is important to note the interactions and effects that both species have on each other. Historically, Native American tribes considered deer to be symbols of strength, agility and abundance. They were major elements in their mythology, art, and ceremonies. European settlers relied on deer as a source of food, clothing, and tools. Today, white-tailed deer are also considered beautiful and are often hunted for food.

However, there are problems. One significant problem that poses risks to both human safety and deer populations is the continuing issue with deer-vehicle collisions. As humans continue to clear forests to build roads, deer habitats have shrunk. As a result, the frequency of auto/deer accidents has risen significantly. One way that engineers have tried to reduce accidents is by installing roadside fencing and wildlife crossings. Another problem with the close interaction of humans and deer is that deer tend to damage crops. Farmers and gardeners often have to build fences, use deer repellents, and frighten the deer to protect their crops.

6:00 Environmental scientists and game management specialists work to manage deer populations at levels that are sustainable and healthy for the ecosystem. Many years ago, over-hunting decreased the white tail deer population so much that they became scarce. Hunting regulations allowed the deer to repopulate. But even repopulation must be managed carefully. Too many deer can have a negative impact on vegetation, biodiversity, and the ecosystem as a whole.

Another concern is the spread of diseases among deer populations, including chronic wasting disease (CWD), which poses risks to both deer and other wildlife species. Chronic wasting disease is a fatal, neurological illness occurring in North American

members of the deer family including white-tailed deer, mule deer, elk, and moose. Since its discovery in 1967, CWD has spread geographically and increased in number. CWD is contagious and can be transmitted through animal-to-animal contact as well as contact with objects or environments contaminated with infectious material including saliva, urine, feces and carcasses.

Deer also carry Lyme disease which is dangerous to humans. Efforts to monitor and control disease transmission require collaboration among wildlife agencies, researchers, and stakeholders to implement effective management strategies.

7:00 White-tailed deer are symbols of North America's natural heritage. By implementing science-based management strategies and working together, we can ensure that white-tailed deer are alive and well for generations to come.

INVITATIONAL 2024-2025

A+ ACADEMICS



University Interscholastic League



Listening
grades 5 & 6

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**

UIL LISTENING CONTEST - GRADES 5/6
INVITATIONAL MEET 2024-2025

TEST

"White-Tailed Deer"

1. What is meant by the term "molting" and what is its purpose?
 - A. Molting is when a fawn loses its spots which allows it to hide on the forest floor more effectively.
 - B. Molting is when male deer loses its antlers at the end of the mating season which allows it to move more freely through the forest.
 - C. Molting is when a deer's coat changes from brown to gray in the winter helping them to camouflage more easily.
 - D. Molting is when fawns transition to a diet of vegetation which allows them to leave their mother and begin life as an adult.
2. What is dichromatic vision?
 - A. the ability to see only 2 colors of the primary color spectrum
 - B. the inability to differentiate between all colors of the primary color spectrum
 - C. the ability to see only 3 colors of the primary color spectrum
 - D. the inability to see colors clearly when looking at the primary color spectrum
3. Native Americans considered white-tailed deer to be a symbol of all of the following except
 - A. Strength
 - B. Cunning
 - C. Agility
 - D. Abundance
4. What is one disease carried by white-tailed deer that is dangerous to deer and wildlife?
 - A. Chronic wasting disease
 - B. Lyme disease
 - C. Distemper
 - D. Lymphomatic cancer
5. What does the term "precocial" mean?
 - A. Dependent on an adult of the species for survival for one to two years
 - B. The ability to be camouflaged until old enough to evade predators
 - C. A tendency to remain alone until old enough to socialize with others safely
 - D. Born in an advanced state with the ability to move and feed independently

6. Approximately how many years ago did the white-tailed deer family originate?
- A. 2 million
 - B. 5 million
 - C. 10 million
 - D. 20 million
7. Which of the following does a browser usually not eat?
- A. leaves
 - B. grass
 - C. fruit
 - D. shrubs
8. A typical gestation period for a female deer is _____ days.
- A. 100
 - B. 300
 - C. 200
 - D. 400
9. What is one advantage to white-tailed deer of being crepuscular?
- A. It allows them to see in dim light.
 - B. They are able to rest at night.
 - C. They are able to avoid predators more easily.
 - D. They are able to digest various forms of plants.
10. All of the following are ways that white-tailed deer communicate except
- A. Sound
 - B. Color
 - C. Scratches
 - D. Body Language
11. How do you tell the age of a white-tailed deer?
- A. A younger deer will have a shorter tail.
 - B. An older deer will have a broader stance.
 - C. A younger deer will have sharper hooves.
 - D. An older deer will have a longer snout.
12. At what age are most deer weaned?
- A. 8-10 months
 - B. 10-12 months
 - C. 4-6 months
 - D. 1-2 months
13. The length and branching of males' antlers are determined by all of the following except
- A. Nutrition
 - B. Habitat
 - C. Age
 - D. Genetics
14. What is meant by the term "rut"?
- A. The time when deer breed
 - B. The time males grow antlers
 - C. A disease fawns can carry
 - D. The area females hide their fawns

15. Where is the tarsal gland located?
- A. Behind the left ear
 - B. Between the eyes
 - C. Inside the hind legs
 - D. Underneath the tongue
16. Which of the following is a characteristic of females (does) during mating season?
- A. Vocalizations
 - B. Displays of affection
 - C. Physical combat
 - D. avoidance of aggression
17. Male fawns that are generally about 6-9 months of age during their first winter are sometimes called
- A. Spiked bucks
 - B. spikers
 - C. Nubbin' bucks
 - D. button heads
18. What is a white-tail deer saying if it raises it's tail to show the white side?
- A. I am happy.
 - B. Danger is near.
 - C. It's time for dinner.
 - D. Stay away from me.

True/False

19. Although almost all white-tail deer are herbivores, they have been known to eat birds and mice when they are unable to find food.
20. The Pliocene epoch extended from 7.5 million to 5.3 million years ago and is the most recent of the Miocene Period in the Pleistocene Era.
21. At about one year old, young female white-tailed deer will leave their mothers and strike out on their own.
22. During the breeding season, bucks show dominance over does by using acts of physical aggression and showing off their strength.
23. The coat of a newborn white-tail deer is spotted which provides camouflage against predators.
24. Male white-tail deer regrow their antlers every year.
25. The scent from the tarsal gland is used to warn other deer of their presence as well as to attract mates during the breeding season.

**UNIVERSITY INTERSCHOLASTIC LEAGUE
2024-25 A+ LISTENING
INVITATIONAL TEST– GRADES 5 & 6**

Answer Key

“White-Tailed Deer”

- | | |
|-------|-------|
| 1. C | 14. A |
| 2. A | 15. C |
| 3. B | 16. D |
| 4. A | 17. C |
| 5. D | 18. B |
| 6. D | 19. T |
| 7. B | 20. F |
| 8. C | 21. F |
| 9. C | 22. F |
| 10. B | 23. T |
| 11. D | 24. T |
| 12. A | 25. T |
| 13. B | |

UIL LISTENING CONTEST - GRADES 7/8
INVITATIONAL MEET 2024-2025

“Longhorn Caverns State Park”

Texas is known for many things: longhorn cattle, bluebonnets, the lone star, and wide-open spaces among other things. What it's not so well known for is its caves and caverns. However, there is one state park dedicated to exactly that. Longhorn Cavern State Park is in Burnet County, Texas, and has been operated by the Texas Parks and Wildlife Department since 1938. Let's find out more about it.

Longhorn Cavern is a cave with a lot of history. Around 500 million years ago, a shallow tropical sea covered the area where it is located. The sea floor became covered with sediments and the remains of sea creatures and eventually turned into what is called Ellenberger Limestone. Ellenberger limestone consists of white to gray limestone and dolomite that contains white and yellow chert. Dolomite is a common mineral, but it is not generally found in sedimentary rock that has recently been formed. It is most typical of rocks formed millions of years ago.

1:00

It was in this area of Texas, between 280 and 300 million years ago, great underground forces created an event called the Llano Uplift. The Llano Uplift is a geologically ancient, low geologic dome that is about 90 miles in diameter and located mostly in Llano, Mason, San Saba, Gillespie, and Blanco counties in Texas. The granite rocks of the Llano Uplift come from the Precambrian era, which predates even the oldest dinosaurs. This layer of granite was revealed as the younger, surrounding sediment and limestone was eroded away. Along with the rest of the Texas Hill Country, the Llano Uplift also rose in elevation during the Cenozoic when the Balcones Fault shifted, lifting the area to the west.

During this geologic upheaval, faults and fractures formed in the flat limestone, and an underground river system dissolved and eroded the rock. These very slow-moving

underground currents created what would be known as the Longhorn cavern when they worked their way through cracks and other openings in the Ellenberger Limestone. The result of the water's work is a wondrous world of odd-shaped formations, domed ceilings, gaping sinkholes, tight crawl ways, fascinating rock carvings, rooms of sparkling crystals and alabaster halls of dolomite that look like exquisite Italian marble.

Because few caverns in the United States were formed this way, Longhorn Cavern is unique. Many minerals abound under the surface of this area. These unusual rocks found in this region come from the older rocks exposed at the surface. For instance, rockhounds have found amethyst, quartz, galena, garnet, and even bits of gold.

2:00 Some of the earliest visitors to the cavern were the region's prehistoric humans who used the caves for shelter. Legend holds that the Comanche held council meetings in the cavern's largest room, which today is known as the Indian Council Room. One interesting piece of trivia told during the cavern tour is that the Comanche were very fierce warriors, but they did not like the dark. They were very superstitious. They had council meetings during the day, and they made arrowheads and spearheads out of the flint they found in the area. They were in the cavern in the daytime, but when it got dark at night, they left.

The Comanche also used the caverns to trap horses. Early Texas frontier settlers, Confederate soldiers, and Wild West outlaws followed over the years. In the mid-1800s, Anglo settlers found the cavern and began mining bat guano from Mexican Freetail bats for use in manufacturing gunpowder during the Civil War. Tourists began visiting the cave in the 1870s. Throughout Prohibition in the 1920s, the cavern was a subterranean speakeasy. For just \$1.10, guests could enjoy the Queen's Throne room, which was a section of the cavern with a bootleg whisky bar, a dance floor, and a bandstand. This

3:00 underground nightclub also conducted live radio broadcasts.

The colorful allure of the place attracted many famous guests, including Al Capone and Mae West. During the Cold War and President Lyndon B. Johnson's administration, the cavern was to be used as a bunker. In the event of a national emergency, Johnson would have been brought down and set up with a radio table and enough food to last at least three years.

Legend even tells that infamous Texas outlaw Sam Bass hid \$2 million inside the cave. The money has yet to be discovered. Sam Bass was a 19th Century American bad guy. He was known as a train robber and outlaw. It is said that he was a member of a gang that robbed a Union Pacific train in Nebraska of \$60,000 in newly minted gold. To date, that is the biggest train robbery to have been committed in the United States. In 1932, the State of Texas purchased the land that Longhorn Cavern State Park occupies from rancher D.G. Sherrard.

In 1934, a group of Civilian Conservation Corps (CCC) workers began working on the cavern and the surrounding acreage. The CCC was a depression era program created by Franklin Roosevelt that created jobs for men around the country. With the onset of the Great Depression in the 1930s, the entire nation suffered from massive

4:00 unemployment. More than half of all men under the age of 25 were out of work. The CCC put young men to work developing state and national parks as well as rehabilitating forests and controlling soil erosion.

Although they had just finished working at Blanco State Park, between 1934 and 1942, the men of CCC Company 854 worked to create two additional state parks in the same area. At Longhorn Cavern, men used wheelbarrows, pickaxes, and shovels to manually excavate over 3,000 dump trucks worth of debris. While working on the 639-acre park, they laid the first pathways and built an administration building, an observation tower, and a lighting system that was over 2 miles long. They hauled some 2.5 tons of silt, debris and guano (bat poop) out of the underground cavern, mapped passageways, and made improvements that would allow public access.

5:00

Under the direction of noted architects Samuel C.P. Vosper and George Walling, the CCC used cut limestone quarried in the park and crystal formations to add Gothic arches and colorful decorations to the administration building and a compound stairway to be used as the entrance to the cavern. Longhorn Cavern State Park was opened to the public in 1938. The need for men in the military during World War II cut short plans for the 2nd State Park the CCC was slated to build in this area - Inks Lake State Park. Despite this, they were able to construct a boathouse and road system for it with dozens of stone culverts. Inks Lake State Park still exists and is frequently visited by tourists. It is located within the Llano Uplift as well and contains rocks which are dated at 1,232 million years old. These rocks are a granitic gneiss and are named Inks Lake Gneiss.

Longhorn Cavern itself is approximately 135 feet deep. The limestone cave is filled with minerals, including smooth dolomite and glittering calcite crystals. Thanks to the lighting system, colorful striations and dripping stalactites can also be enjoyed. The temperature inside the cavern is 68 degrees year-round, so whether you are escaping the summer heat or the winter cold, the cavern is always pleasant. Entrance to the cavern is through a natural sinkhole at the cave's entrance.

6:00

Visitors enter the cavern by stepping down a 52-step staircase. As mentioned earlier, the cavern was formed by erosion as a result of a moving, underground river. This is different from other well-known caverns. For example, Carlsbad Caverns are called solution caves, or drip caves, meaning that the water sank through the earth and dissolved out big caves and formations. Longhorn Cavern is much more sculpted, and it's a very long, fairly level cave. Guided tours allow visitors to learn all about the geologic features as well as some of the history and folklore.

Longhorn Cavern State Park has hiking trails that showcase the plant life in the area. The woodland is typical of the Hill Country with a mix of oaks and junipers. There are many large Plateau live oaks, Texas oaks and other hardwoods as well. Texas oaks only

grow in limestone derived soils, so they flourish in the park. The limestone of the cavern on the ridge is in sharp contrast to the gneiss and granite bedrock that is also present thanks to the Llano Uplift. Although the caverns were once home to a colony of Mexican free-tailed bats, now they are only inhabited by tri-colored bats. Nature trails in the park are over a mile long and are home to a wide variety of birds, including the endangered golden-cheeked warbler and black-capped vireo.

In 1971, the park was designated a Registered National Natural Landmark. The National Landmarks program recognizes and encourages the conservation of sites that contain outstanding biological and geological resources. This honor is determined by the Secretary of the Interior based on the site's condition, rarity, and value to science education. The park's administration building was listed as a Recorded Texas Historic Landmark in 1989.

7:00

In recent years, there have been several exciting events. In 2006, Steven Kurtz, the curator of Longhorn Cavern State Park, re-introduced chamber music to the cave with the creation of the Simple Sounds concert series. Two years later, on February 14, 2008, as the Burnet County band Redneck Jedi performed, dancing was finally allowed back on the cave floor. On April 4, 2008, Redneck Jedi became the first band to record an album inside the cave. The album was aptly entitled *Unplugged and Underground*.

INVITATIONAL 2024-2025

A+ ACADEMICS



University Interscholastic League



Listening
grades 7 & 8

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**

UIL LISTENING CONTEST - GRADES 7/8
INVITATIONAL MEET 2024-2025

TEST

"Longhorn Caverns State Park"

1. In which county is Longhorn Cavern State Park located?
A. Llano
B. Burnet
C. Gillespie
D. Blanco
2. What was the purpose of the Civilian Conservation Corps?
A. to build state and national parks out of local, natural resources
B. to prevent natural resources from erosion and waste
C. to provide jobs to young men during the Great Depression era
D. to rehabilitate men who had lost their jobs due to a nationwide drought
3. Why was Inks Lake State Park not completed by the CCC?
A. Work on Longhorn Cavern State Park took too long and they ran out of time.
B. There was not enough money to pay the workers to finish the park.
C. A nationwide drought caused the Lake to be unsafe for workers.
D. World War II caused the workers to be needed in the military
4. All of the following rocks and minerals have been found in Longhorn cavern except
A. amethyst
B. copper
C. garnet
D. quartz
5. How did Steven Kurtz re-introduce chamber music to the cavern in 2006?
A. a concert series called the Simple Sounds
B. a dance hosted by the Redneck Jedi
C. a movie with music from the album Unplugged Underground
D. a fundraiser playing original music from the 1920s
6. Which mineral is usually found in Ellenberger limestone?
A. dolomite
B. galena
C. granite
D. flint
7. Approximately how deep is Longhorn Cavern? _____ feet.
A. 125
B. 145
C. 135
D. 155

8. From which era do the granite rocks of the Llano Uplift come?
- A. Cenozoic
 - B. Precambrian
 - C. Devonian
 - D. Permian
9. In what year did the Texas Parks and Wildlife Department open Longhorn Cavern State Park?
- A. 1934
 - B. 1932
 - C. 1938
 - D. 1945
10. What type of bats can currently be found living in the park?
- A. Mexican free tail
 - B. Velvety Free Tail
 - C. Spotted
 - D. Tri-colored
11. About how many million years ago was the area where Longhorn Cavern is located covered with a shallow sea whose floor was littered with sediments and remains of sea creatures?
- A. 200
 - B. 300
 - C. 400
 - D. 500
12. In the 1800s, what did miners sell that was abundant in the cavern?
- A. flint for making arrowheads
 - B. bat poop for making gunpowder
 - C. quartz for making jewelry
 - D. shells for making grout
13. Which United States President planned to use Longhorn Cavern as a bunker in case of a national emergency?
- A. Franklin Roosevelt
 - B. Lyndon B. Johnson
 - C. Dwight Eisenhower
 - D. John F. Kennedy
14. The Longhorn Cavern State Park consists of _____ acres.
- A. 639
 - B. 832
 - C. 725
 - D. 934
15. Noted architects Samuel C.P. Vosper and _____ designed the Gothic arches and colorful decorations of the administration building.
- A. Sam Bass
 - B. D.G. Sherrod
 - C. George Walling
 - D. Steve Kurtz

16. What is the purpose of designating a property a Registered National Natural Landmark?
- A. to protect the property that has historical value from being sold and commercialized
 - B. to encourage people to visit the area and appreciate its beauty
 - C. to point out the significance of the types of animals that live there and protect their natural habitats
 - D. to encourage the conservation of sites containing outstanding biological and geographical resources
17. What was the name of the first album ever recorded inside the cavern?
- A. *Redneck Jedi*
 - B. *Unplugged and Underground*
 - C. *Simple Sounds*
 - D. *Echoes of the Ancients*
18. Which of the following types of trees is not commonly found in the park?
- A. pines
 - B. live oaks
 - C. juniper
 - D. hardwoods

True/False

19. When designating a property to be a Registered National Natural Landmark, the Secretary of the Interior considers the sites' condition, rarity, and value to science education.
20. Texas oaks only grow in limestone derived soils, so they flourish in the granite and gneiss bedrock that is present in the area.
21. The Llano Uplift is relatively new geologic dome that is about 90 miles in diameter located mostly in Llano, Mason, San Saba, Gillespie, and Blanco counties.
22. Comanche held council meetings in the cavern during the day, but were very superstitious and did not like the dark, so they vacated the caverns during the nighttime hours.
23. During the 1920s, for just \$1.50, guests could enjoy music and dancing in the Queen's Throne room, but it wasn't until Prohibition ended that they were allowed to drink alcoholic beverages in the cavern.
24. During the Great Depression in the 1930s, the entire nation suffered from massive unemployment resulting in more than half of all men under the age of 25 being out of work.
25. After stepping into the cavern via a natural sinkhole with a 52 step staircase, visitors can enjoy the pleasant temperature of 68 degrees all year-round.

**UNIVERSITY INTERSCHOLASTIC LEAGUE
2024-25 A+ LISTENING
INVITATIONAL TEST– GRADES 7 & 8**

Answer Key

“Longhorn Caverns State Park”

- | | |
|-------|-------|
| 1. B | 14. A |
| 2. C | 15. B |
| 3. D | 16. D |
| 4. B | 17. B |
| 5. A | 18. A |
| 6. A | 19. T |
| 7. C | 20. F |
| 8. B | 21. F |
| 9. C | 22. T |
| 10. D | 23. F |
| 11. D | 24. T |
| 12. B | 25. T |
| 13. B | |

UIL LISTENING CONTEST - GRADES 5/6
FALL/WINTER DISTRICT 2024-2025

"Lemons - A Sour Favorite"

Lemons are perhaps one of the most versatile and well-known fruits throughout the world. They are famous for their tartness and are used to enhance the flavors of foods and beverages. Their use in culinary applications, cleaning products, and medicinal properties have left their mark on both our history and our culture. Let's find out the origin of lemons and some of their many uses.

Lemons, scientifically known as *Citrus limon* (lie'-mon), are believed to have originated in India, specifically in the southeast foothills of the Himalayan mountains, about eight million years ago. When the climate changed bringing weaker monsoons and drier weather, the plants were able to spread out of the Himalayas into southeast Asia and later into the rest of the world. In fact, a fossilized citrus leaf was found in southwestern China which dated to at least seven million years ago. From Asia, they spread to the rest of the world, including to Australia, about four million years ago.

1:00 Limons were originally a hybrid between two wild citrus species - the bitter orange and the citron. The citron was the first citrus fruit to reach the Mediterranean and began spreading west. The remains of a citron tree were found in a 2,500-year-old Persian garden near Jerusalem. The limon tree was introduced into southern Italy in 200 AD. Citrons and limons were not widely cultivated in the early Roman empire and were not used in cooking. However, wealthy Romans prized limon trees because they were decorative, had a pleasant odor, and were used as medicine. Around 700 AD, limon trees were being cultivated in Persia, Iraq and Egypt. Like the Roman limon trees, these were also used as an ornamental plant in early Islamic gardens. Believe it or not, tomatoes were also ornamental, not food, plants during this time as well. Between 1000 and 1150 AD, Arab traders distributed the limon around the Mediterranean region.

The first substantial cultivation of lemons in Europe began in Genoa, Italy, in the middle of the 15th century. The name lemon first appeared around 1350-1400 from the middle English word limon. Limon is an Old French word, so it is believed that the lemon entered England from France. The lemon was introduced to the Americas in 1493 when Christopher Columbus carried lemon seeds to Hispaniola.

2:00 In 1747, James Lind's experiments on seamen suffering from scurvy involved adding lemon juice to their diets, though vitamin C was not yet known as an important dietary ingredient. Scurvy is a disease resulting from a lack of vitamin C (ascorbic acid). Early symptoms of deficiency include weakness, fatigue, and sore arms and legs. Without treatment, decreased red blood cells, gum disease, changes to hair, and bleeding from the skin may occur. As scurvy worsens, there can be poor wound healing, personality changes, and finally death from infection or bleeding. Up to that time, scurvy killed more British sailors than wartime enemy action and, as a result, exploration was severely affected. It was mainly by scurvy that George Anson, in his celebrated voyage of 1740–1744, lost nearly two-thirds of his crew (1,300 out of 2,000) within the first 10 months of the voyage. The Royal Navy enlisted 184,899 sailors during the Seven Years' War; 133,708 of these were "missing" or died from disease, and scurvy was the leading cause.

The first major long distance expedition that experienced virtually no scurvy was that of the Spanish naval officer Alessandro Malaspina, 1789–1794. Malaspina's medical officer, Pedro González, was convinced that fresh oranges and lemons were essential for preventing scurvy. Only one outbreak occurred, during a 56-day trip across the open sea. Five sailors came down with symptoms, one seriously. After three days at Guam eating fresh fruit, all five were healthy again.

3:00 Eventually, as colonization spread, lemons made their way to California. During the years 1751-1768, lemon groves were planted in both California and by the 1800s in Florida due to the long growing season. Lemons need a minimum temperature of

around 7 °C (45 °F). However, in the winter of 1894-1895, a killer freeze killed the lemon groves in Florida. The groves were completely wiped out. Because the market was strong in California, planting in Florida did not resume until 1953. At this time, people began to purchase frozen lemon concentrate, frozen orange concentrate, and natural cold-press lemon oil which created a higher demand. Farmers in Florida began to take advantage of the strong demand and once again planted citrus groves.

There are approximately 200 varieties of lemon that can be found in the United States today. Some are best for lemon oil while others are better for juice. Some are more disease resistant, and others bear more fruit or have less seeds. Some grow better in humid climates like Florida, and others thrive in arid climates such as Arizona or Texas. One of the most common lemon varieties is the Eureka lemon, which is characterized

4:00 by its oblong shape, bright yellow skin, and acidic juice. Meyer lemons, on the other hand, are sweeter and rounder with thin orange-yellow skin. These two varieties represent just a fraction of the lemon family.

Lemons are handpicked. They can't be machine harvested and must be picked dry. They are then sorted according to their color, washed, coated with a fungicide to prevent stem-end rot, coated with a thin layer of wax and then stored for shipping. While waiting to be shipped, the lemon cures. During curing, which can take several days, the peel of the picked fruit, which is green, turns yellow and grows thinner. The pulp of the lemon gets juicier as well.

Once you have purchased lemons, how should you store them? Lemons will be juiciest when stored at room temperature. If they need to last longer than a few days, they should be refrigerated. They can last up to a month in the refrigerator, but they should be allowed to warm up to room temperature before using them. Lemon juice can be frozen, but not the whole lemon. Another way to store lemons is to preserve them by combining sliced lemons with salt and sugar in a jar. They will last for at least six months in the refrigerator this way. In Morocco, lemons are preserved in jars or barrels

of salt. The salt penetrates the peel and rind, softening them, and curing them so that they last almost indefinitely.

5:00 Lemons are a rich source of essential nutrients. Their nutritional value includes Vitamin C. Lemons are famous for their high vitamin C content. Vitamin C acts as an antioxidant which protects cells from damage, boosts the immune system and promotes healthy skin. One lemon provides about 31 mg of vitamin C, which is 51% of the recommended daily intake. Research shows that eating fruits and vegetables rich in vitamin C reduces your risk of heart disease and stroke. However, it's not just the vitamin C that makes lemons good for your heart. Lemons also provide fiber and plant compounds that could also significantly lower some risk factors for heart disease. For instance, one study revealed that eating 24 grams of citrus fiber extract daily for a month reduced total blood cholesterol levels.

Lemons also contain citric acid which causes tartness. Citric acid is said to help prevent kidney stones by increasing urine volume and increasing urine pH creating a less favorable environment for kidney stone formation. Some nutritionists believe that just ½ cup of lemon juice per day may provide enough citric acid to help prevent stone formation in people who have already had them. Other vitamins and minerals such as

6:00 vitamin B6, vitamin A, and minerals like potassium and magnesium are found in lemons and contribute to a person's overall health and wellbeing. One other positive benefit of lemons is that they are a low-calorie fruit, making them a healthy choice for those who are looking to maintain or lose weight. Lemons contain only 10% carbs and 90% water. The carbs consist of a few simple sugars and soluble fibers. The soluble fiber is mainly made of pectin which has the added value of lowering the blood sugar. Good news for people with diabetes.

Besides nutritional value, lemon products are used as cleaners. The acidic properties in lemons cause lemon juice to be a great degreaser. The fresh aroma of lemon oil is also used in cleaners to give the impression of a clean, fresh environment. However,

lemons have some unexpected uses as well. One educational science experiment involves attaching electrodes to a lemon and using it as a battery to produce electricity. Although it produces very little power, several lemon batteries linked together could power a small watch. Children have also been known to use lemon juice as invisible ink. They simply dip their paint brush into lemon juice and paint their message on paper. The message can magically be revealed by heating the paper. Lemon juice can also be used to increase the blond color of hair when it is exposed to sunlight. This is due to the citric acid acting as a bleach.

7:00

Whatever your motive for using lemons, it is obvious that lemons, no matter how sour, are a favorite among citrus fruits. Pucker up and enjoy!

FALL/WINTER DISTRICT 2024-2025

A+ ACADEMICS



University Interscholastic League



Listening
grades 5 & 6

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**

9. How many lemons must be consumed each day to total 100% of the recommended daily vitamin C intake? _____
 - A. 1
 - B. 3
 - C. 2
 - D. 4
10. What property of a lemon causes it to be a great kitchen degreaser?
 - A. the tartness
 - B. the acidity
 - C. the large amount of fiber
 - D. the strong lemony scent
11. In what country was a fossilized citrus leaf found which dated back to at least seven million years ago?
 - A. Persia
 - B. Italy
 - C. China
 - D. Egypt
12. Where were the first lemons grown in Europe during the 15th Century?
 - A. England
 - B. France
 - C. Spain
 - D. Italy
13. What is scurvy?
 - A. A condition that results from unsanitary conditions on ships in wartime.
 - B. A disease that causes an increase in red blood cell production.
 - C. An infection that causes bleeding from the skin and gum disease.
 - D. An illness caused by a lack of Vitamin C that can result in death.
14. Lemon plants need a minimum temperature of _____ degrees Fahrenheit to grow.
 - A. 32
 - B. 45
 - C. 40
 - D. 52
15. What two factors contributed to the decline of lemon groves in Florida during the late 1800s?
 - A. a killer freeze and a strong lemon market in California
 - B. a shorter growing season and the invention of natural pressed lemon oil
 - C. lower demand and a long hurricane season that destroyed groves
 - D. a stronger market in California and a lack of migrant grove workers
16. While curing, the peel of the lemon turns yellow and
 - A. thickens up
 - B. becomes tough
 - C. gets thinner
 - D. begins to become fragrant

17. In Morocco, lemons are preserved in jars or barrels containing _____ which softens the peel and rind.
- | | |
|----------|------------|
| A. sugar | B. vinegar |
| C. water | D. salt |
18. All of the following are nutrients found in lemons except
- | | |
|--------------|--------------|
| A. Potassium | B. Calcium |
| C. Vitamin A | D. Magnesium |

True/False

19. Lemons can be used to produce enough electricity to power a small watch by attaching electrodes to several lemons and linking them together.
20. The lemon was the first citrus fruit to reach the Mediterranean and was introduced into southern Italy in 100 AD.
21. Around 700 AD, tomato bushes were cultivated in Persia and used as decorations as well as food.
22. George Anson lost nearly two thirds of his crew (1300 out of 2000) within the first months of his voyage of 1740-1744 due to scurvy.
23. During the years 1745-1786, lemon groves were planted in both California and Florida due to a drought that had occurred over the rest of the United States.
24. Meyer lemons are sweeter and rounder than the Eureka lemon and have thin orange-yellow skin.
25. Lemons can be frozen and then thawed to use their juice to make concentrate for lemonade and lemon flavoring in baking.

**UNIVERSITY INTERSCHOLASTIC LEAGUE
2024-25 A+ LISTENING
FALL/WINTER DISTRICT TEST – GRADES 5 & 6**

Answer Key

“Lemons - A Sour Favorite”

- | | |
|-------|-------|
| 1. B | 14. B |
| 2. C | 15. A |
| 3. A | 16. C |
| 4. B | 17. D |
| 5. D | 18. B |
| 6. B | 19. T |
| 7. A | 20. F |
| 8. D | 21. F |
| 9. C | 22. T |
| 10. B | 23. F |
| 11. C | 24. T |
| 12. D | 25. F |
| 13. D | |

UIL LISTENING CONTEST - GRADES 7/8
FALL/WINTER DISTRICT 2024-2025

"Mrs. Baird's Bread: A Texas Tradition"

If you go into a grocery store in any town in Texas, it's fairly certain that you will find Mrs. Baird's bread in the bread aisle. For decades, this brand has been sold successfully throughout the United States satisfying the nation's hunger for delicious, fresh bread. The story of Mrs. Baird's bread is not just a Texas tale of good eating, however. It is an example of the entrepreneurial spirit that fills our state and the nation. Let's find out where it all began.

Ninnie Baird was born on May 23, 1869, in Gibson County, Tennessee. Her parents were Elisha and Amanda Elizabeth Harrison. Her mother died when Ninnie was five years old. Her father remarried, and she lived with her father and stepmother until her father died in 1882. After her father's death, she was raised by an aunt who taught her to bake. She lived with her aunt for the next three years until she met William Allen Baird, who was also an orphan. They were married in 1886 when Ninnie was seventeen years old. William was nineteen.

The couple settled near Trenton, Tennessee where William built a house on family land and worked as a wood cutter. In 1898, they moved to Obion, Tennessee, where William entered the restaurant and bakery business. William Allen Baird ran a restaurant and bakery in Trenton and a small bakery in Covington. Soon, Ninnie Baird began baking and selling bread out of her kitchen.

1:00 In 1901, Ninnie and William moved from Tennessee to Fort Worth, Texas. William opened a restaurant and became very successful. While looking for another business venture, William decided he wanted to introduce the first steam popcorn machine to Fort Worth. This machine was red with brass fillings and had a whistle on top. William later sold the machine and focused on running a series of restaurants. Unfortunately,

his health began to fail. William was diagnosed with diabetes, an untreatable disease in those days. Ninnie knew that she would need a way to help support her family.

At this point, they had eight children. The three oldest children began working in the bakery to learn the business. All of the baking was done with a four-loaf, wood-burning oven that required split wood and stoking to keep a constant temperature. Realizing that she could make a living baking bread, Ninnie sold their restaurant in 1908 and opened her first bakery in Fort Worth - Mrs. Baird's Bread. Who would have imagined that this small bakery would be the birthplace of the Mrs. Baird's Bread company that we know today?

2:00 During these early years, Mrs. Baird's bakery was a very small business which provided fresh bread to local community members. Her children would help her bake and then deliver the bread on foot and by bicycle. After William passed away in 1911, she went into the bread business with great determination.

In 1915, Mrs. Baird's Bread purchased a used commercial oven from the Metropolitan Hotel for \$75. She paid \$25 in cash and the balance in bread and rolls. This oven had the capacity to bake 40 loaves at a time. In 1917, the bakery bought a horse and wagon. A new bakery was built in Fort Worth in 1918. By 1928, the bakery had been expanded nine times and was one of the largest bakeries in Texas. Each of her sons was running a bread factory in different cities in Texas including Dallas and Houston. At one point there were as many as 3,200 factory workers in their employ.

As the business grew, they continued to expand and improve. They built a brick building for their factory in Fort Worth and equipped it with a Peterson Peel gas-fired oven, with capacity for 400 one-pound loaves. Eventually, the family traded the horse and buggy for a Ford car, retrofitted to serve as a delivery truck and painted with the company's first slogan, "Eat More Mrs. Baird's Bread." A second Ford truck was

3:00 purchased and sent on a sales route to keep up with demand. For 24 years, Mrs. Baird's

operated a bakery at Bryan and North Carroll streets in Dallas. In 1953, to keep up with growth in the Dallas area, the company opened what was then the largest bread plant in the United States at Central Expressway and Mockingbird Lane. According to the Sept. 8, 1957, issue of *The Southwestern Miller*, the plant housed two separate bakeries in its 140,000 square feet of floor space. This facility could produce 2,000,000 pounds of bread per week.

One of the main reasons the bread became so popular was that Ninnie was committed to producing quality products using simple ingredients which ensured that the bread was consistently delicious. While other bread companies adopted the continuous-mixing process where chemicals are introduced into the bread causing it to rise, the Bairds continued to let their dough rise naturally with yeast. In the early days, all production was done by hand. Ninnie used a wooden trough, 6 feet long, 24 wide, and 24 inches deep. It held about 300 pounds of dough. She mixed flour and other ingredients in the trough and left it to rise, punched it down, let it rise, and repeated this process until the dough was ready to be formed into loaves weighing 18 ounces.

4:00 During the Great Depression which lasted from 1929 to 1939, Mrs. Baird's Bread Company was able to continue to thrive while many other businesses folded. The Great Depression was a worldwide economic downturn that was the longest and most severe depression ever experienced by the Western world. Although it originated in the United States, it caused drastic severe unemployment and acute deflation (the lowering of prices of goods due to the public's inability to purchase them). Because Mrs. Baird's Bread had always been priced affordably, the depression had less effect on her company.

The 1940s was a significant time for Mrs. Baird's Bread Company. During these years of growth, changes were also taking place in the bread industry. In the early 1920s, wrapping machines were introduced. Bread slicing machines made their debut in 1927. In 1936, Mrs. Baird's began hand-twisting bread, an innovative baking technique that

intertwined two pieces of dough into one loaf. In 1947, Mrs. Baird's Bakery began selling sliced bread. Up until this point, the bread had to be sliced by hand after purchase. This pre-sliced bread appealed to busy families and quickly gained popularity causing a rise in sales. By the 1950s, Mrs. Baird's bread was available in grocery stores and supermarkets across Texas.

5:00 Mrs. Baird died at the age of 92 on June 3, 1961. She had eight surviving children. The Texas State Senate passed Senate Resolution No. 13 in her memory. By the time of her death, the business she started in her home kitchen had grown to 12 plants with over 2,500 employees and was the largest family-owned bakery in the country. Mrs. Baird's Bakeries continued to be the largest U.S. family-owned baking company until 1998 when Grupo Bimbo, the largest baking company in the world based in Mexico City, bought it. Annual sales volume was about \$300 million at that time.

Even now, Ninnie Baird's legacy in the baking industry continues as Mrs. Baird's market reach expands. Mrs. Baird's bread entered several Missouri markets, including Kansas City, in 2005. In 2005, Mrs. Baird's Bread also could be found in Texas, Oklahoma, portions of Louisiana, northwestern Arkansas and northeastern Kansas.

Because she felt that giving back to the community was vitally important, Ninnie's legacy lives on in the Ninnie L. Baird Foundation. Today the Ninnie L. Baird Foundation continues her legacy of improving the life for children and families through family preservation, education, and nutrition. The foundation also provides scholarships and grants to worthwhile causes.

6:00 In one of their 1973 issues, Bakery Production and Marketing magazine featured Mrs. Baird's success story. Mrs. Baird was also inducted into the Baking Hall of fame. Individuals who are inducted into the Baking Hall of Fame are honored for their positive impact on the commercial baking industry. In 1992, the Bairds became the first family to be inducted into the Texas Business Hall of Fame.

Throughout the years, Mrs. Baird's bread has stood the test of time. It serves as a reminder of the power of tradition, innovation, and the importance of maintaining a personal touch in a world of mass production. It continues to be more than just bread. It is a slice of history and a testament to the Texan entrepreneurial spirit.

FALL/WINTER DISTRICT 2024-2025

A+ ACADEMICS



University Interscholastic League



Listening
grades 7 & 8

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**

9. What was one benefit from purchasing a commercial oven in 1915?
- A. It could bake up to 40 loaves at a time.
 - B. It was easier to keep clean and up to health code.
 - C. It was gas-fired not electric making it cheaper to use.
 - D. It had a special warming area to allow the bread to rise.
10. In 1992, The Bairds became the first family to be inducted into the
- A. Baking Hall of Fame
 - B. Bakery Production Foundation
 - C. Bakers Magazine Alumni
 - D. Texas Business Hall of Fame
11. Ninnie Baird was born on May 23 in the year _____.
- A. 1869
 - B. 1879
 - C. 1889
 - D. 1899
12. Immediately after marrying, William Baird worked as a
- A. restaurant owner
 - B. baker
 - C. wood cutter
 - D. railroad worker
13. Mrs. Baird's original bakery had a four-loaf oven that was heated by
- A. electric current
 - B. a wood fire
 - C. gas flames
 - D. battery power
14. What is one main procedure that made Mrs. Baird's bread different from other companies?
- A. The Bairds allowed their bread to rise with yeast not chemicals.
 - B. The bread was baked in an electric oven with consistent temperature.
 - C. Flour was ground at a local mill and was used when it was fresh.
 - D. All loaves were hand wrapped and delivered fresh by horse and buggy.
15. By 1928, the Bairds had factories in all of the following cities except
- A. Fort Worth
 - B. Dallas
 - C. Houston
 - D. Austin
16. In the early days, Ninnie's wooden trough held about _____ pounds of dough.
- A. 100
 - B. 200
 - C. 300
 - D. 400

17. In what decade were bread wrapping machines introduced to the bread industry?
- | | |
|---------|---------|
| A. 1910 | B. 1920 |
| C. 1930 | D. 1940 |
18. What innovation in 1947 caused Mrs. Baird's bread to show a rise in sales?
- | | |
|--------------------------|-----------------------|
| A. plastic wrapped bread | B. hand twisted bread |
| C. pre-sliced bread | D. oven risen bread |

True/False

19. Because Mrs. Baird's Bread had always been priced lower than most other breads, they struggled to make a profit during the Great Depression.
20. Mrs. Baird's Bread can be purchased in Missouri, Texas, Oklahoma, Louisiana, Mississippi, Arkansas, and Kansas.
21. The company's first slogan painted on its delivery truck was "Eat More Mrs. Baird's Bread."
22. By the time of her death, the business she started in her home kitchen had grown to 12 plants with over 2,500 employees and was the largest family-owned bakery in the country.
23. In 1998, Grupo Bimbo, the largest baking company in the world based in Mexico City, bought Mrs. Baird's company which at that point had an annual sales volume of \$300 million.
24. The Great Depression was an economic downturn that created huge inflation causing the prices of goods to rise to a point that the general public was unable to purchase them.
25. In one of their 1973 issues, the Texas Business and Marketing magazine featured Mrs. Baird's biography and road to success.

**UNIVERSITY INTERSCHOLASTIC LEAGUE
2024-25 A+ LISTENING
FALL/WINTER DISTRICT TEST – GRADES 7 & 8**

Answer Key

“Mrs. Baird’s Bread: A Texas Tradition”

- | | |
|-------|-------|
| 1. C | 14. A |
| 2. D | 15. D |
| 3. A | 16. C |
| 4. C | 17. B |
| 5. B | 18. C |
| 6. B | 19. F |
| 7. B | 20. F |
| 8. C | 21. T |
| 9. A | 22. T |
| 10. D | 23. T |
| 11. A | 24. F |
| 12. C | 25. F |
| 13. B | |

UIL LISTENING CONTEST - GRADES 5/6
SPRING MEET 2024-2025

"Microwave Ovens"

Have you ever had a craving for popcorn? Not a problem, right? Just pop a bag in the microwave, and in no time you've got a big bowl of hot fresh popcorn ready to eat. Most young people couldn't even imagine a home without a microwave. However, it has not always been this way. Actually, the microwave oven has only recently become an essential fixture in modern households. But who was behind its invention, and how did it evolve to revolutionize our daily lives?

Percy Spencer, an American engineer, is often credited as being the inventor of the microwave. Spencer was born in Howland, Maine, in 1894. When he was only eighteen months old, his father died, and his mother left him in the care of his aunt and uncle. His uncle then died when Spencer was only seven years old. At this point, young Percy had no choice but to leave school and find work to support himself and his aunt. From the ages of twelve to sixteen he worked at a spool mill. Later he discovered that a local paper mill was hoping to begin using electricity. No one in his area knew much about electricity, so he began learning as much as possible about it. When he applied to work at the paper mill, he was hired to install electricity in the plant even though he had no formal training in electrical engineering and had not even finished school. At the age of 18, Spencer decided to join the United States Navy. He had become interested in radio communications after hearing about them when the Titanic sank.

1:00

While in the Navy, he made himself an expert on radio technology. He read textbooks on the subject as well as trigonometry, calculus, chemistry, physics, and metallurgy. Radar technology, which utilized microwave frequencies, played a critical role in the war effort. Scientists and engineers explored the properties of microwaves for communication and detection purposes.

After leaving the Navy, Spencer continued to work in the field of radar technology. By 1939, he had become one of the world's leading experts in radar tube design. He was hired to work for Raytheon Company as the chief of the power tube division. It was while he was working for Raytheon that he developed a more efficient way to manufacture magnetrons.

A magnetron is a device that generates high power electromagnetic waves within a vacuum tube. Another name for magnetrons is cavity magnetron because they have empty spaces, or cavities, within the vacuum device. These cavity magnetrons were initially developed for radar systems during the war in 1940. However, building them took time. Using the method developed by Percy Spencer, production of magnetrons increased from 100 to 2600 magnetrons per day.

2:00 In 1945, while conducting an experiment using magnetrons, Spencer noticed that a chocolate bar in his pocket had melted. This was determined to be due to exposure to microwave radiation. He became curious about the cause and then deliberately tested popcorn and an egg, both of which cooked rapidly using the same type of radiation. Recognizing the importance of this accidental discovery, he began to experiment with other food items. He designed a metal box with an opening where microwaves could enter. He placed various food items in the box and was amazed that the microwaves efficiently cooked the food from the inside out.

Microwave cooking operates on a unique scientific principle: the interaction of microwaves with water molecules. Microwaves are electromagnetic waves with a specific frequency that causes water molecules to vibrate rapidly. This vibration generates heat within the food, cooking it from the inside out. That's why when you microwave something like popcorn, it heats quickly from the inside. Popcorn actually pops due to the water content deep inside the kernel. As the water heats, it turns to steam and pops the corn when the pressure inside becomes more than the kernel can contain. Unlike conventional ovens that rely on conduction and convection to transfer

3:00

heat to food, microwaves cook food directly and quickly. This results in faster cooking times and often more even heating, as there's less reliance on external heat sources.

After further testing and building a working prototype, on October 8, 1945, Spencer filed the patent for the first microwave oven.

Despite these events, there is some discussion about whether Spencer actually discovered microwave cooking. At that time it was well known that radio waves would heat dielectric materials. Dielectric materials are insulating materials or materials that are poor conductors of electricity. The use of radio waves to heat these dielectric materials for industrial or medical use was common at that time. The idea of heating food with radio waves was not a new concept either. Bell Labs, General Electric and RCA had all been working on variations of technology to do this for years. In fact, at the 1933 World's Fair in Chicago, Westinghouse demonstrated a 10-kilowatt shortwave radio transmitter that cooked steak and potatoes between two metal plates. In 1947, Grand Central Terminal had a Speedy Weeny vending machine that sold freshly cooked hot dogs using the same concept. However, no patents were filed, and no one really sat up and took notice.

4:00 Because Spencer was working for Raytheon at the time, Raytheon used his research to develop the first commercial microwave oven in 1946. It was called the Radar Range and was designed for use in restaurants and to reheat meals on airplanes. They were huge and expensive appliances that had to be continuously water cooled. The original Radarange was approximately 5 foot 11 inches tall, weighed 750 pounds and cost about \$5,000 each. Compared to today's dollars, that about \$66,000! It consumed 3 kilowatts of energy which is about three times as much as microwaves today.

Raytheon licensed its technology to the Sappan Stove company of Mansfield, Ohio in 1952. They produced a home-use microwave in 1955. Although it was much smaller, it was still too large and expensive to be used at home. Japan's Sharp Corporation began

manufacturing microwave ovens in 1961 and introduced the first microwave oven with a turntable in 1965. This was an effort to promote a more even heating of the food. In 1967, Raytheon acquired Amana Refrigeration, and began to sell Amana Radaranges for \$495. Unlike the Sharp models, a motor driven stirrer in the top of the oven cavity rotated allowing the food to remain stationary. These microwaves were small enough for kitchens and affordable enough for most Americans. After microwave ovens became affordable for residential use, they began to be used in residential and commercial kitchens around the world. Prices fell rapidly during the 1980s. By 1986 roughly one in four American homes owned a microwave oven. By 1997, the U.S. Bureau of Labor Statistics reported that nine out of ten homes had one.

5:00

Because of its increased usage, many people began to wonder about the safety of using microwaves in homes. Safety measures were put in place to protect us from the radio waves. According to the World Health Organization, microwave ovens are safe as long as they are used properly, are maintained, and remain in good condition. While huge amounts of microwave radiation is harmful, microwave ovens are designed to keep the radiation inside. The radiation is only present when the oven is turned on and the door is shut. The microwave oven box is specifically constructed to keep the waves from coming out of the oven. It's like a Faraday cage. A Faraday cage is a box that is built out of materials that prevent electromagnetic waves from passing through. The doors have special seals that prevent leakage. The oven door usually has a window that allows you to see the food, however, it also has a layer of conductive mesh that maintains the shielding. As long as the door is closed, the oven is safe. Many microwave ovens today contain sensors that stop themselves when the food has finished cooking. This allows for cooking with less waste.

6:00

Many restaurants use microwave ovens to heat and reheat food. However, there are other uses besides reheating precooked food or popping popcorn. There are also microwaves that can fry and bake. Some even have a fermentation cycle that can be

used in making fresh dough and yogurt. Microwave ovens are used to dry cork, ceramics, paper, leather, textiles and many other items.

Despite its multiple uses and convenience, the microwave has dealt with its share of controversy. Some concerns have been raised regarding the impact of radio waves on the nutritional value of food and the potential health risks associated with it. Critics argue that food that is exposed to microwave radiation might have less nutritional content. According to most studies, however, this is not the case. While every cooking method can destroy vitamins and nutrients in food, the factors that determine the damage are actually how long the food is cooked, how much liquid is used, and the temperature used to cook.

7:00 Since microwave ovens often use less heat than conventional methods and have shorter cooking times, they are generally less destructive. The most heat-sensitive nutrients are water-soluble vitamins, like folic acid and vitamins B and C, which are most commonly found in vegetables. In studies at Cornell University, scientists discovered that spinach retained nearly all of its nutrients when cooked in a microwave, but it lost about 77 percent when cooked on a stove. Adding water to vegetables when cooking can greatly accelerate the loss of nutrients. Broccoli cooked in a microwave without water retained most of its nutrients.

While the microwave oven has faced criticism and concerns, its influence on our lives today is clear. With continued advancements in technology and environmental responsibility, the future of the microwave oven is sure to be promising.

SPRING DISTRICT 2024-2025

A+ ACADEMICS



University Interscholastic League



Listening
grades 5 & 6

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**

UIL LISTENING CONTEST - GRADES 5/6
SPRING DISTRICT 2024-2025

TEST

"Microwave Ovens"

1. What caused Percy Spencer to study radio communications while in the Navy?
 - A. He read textbooks about it while doing his basic training.
 - B. He became interested in it when he heard about the sinking of the Titanic.
 - C. He was hired by Raytheon Company and needed training.
 - D. He became interested while taking physics classes in high school.

2. At what age did Percy finish school?
 - A. 7
 - B. 12
 - C. 16
 - D. 20

3. Using the method developed by Percy Spencer, production of magnetrons increased from 100 to _____ magnetrons per day.
 - A. 500
 - B. 1800
 - C. 2100
 - D. 2600

4. Microwaves are electromagnetic waves with a specific frequency that
 - A. causes food to spontaneously combust
 - B. creates a radioactive reaction inside a metal chamber
 - C. causes water to vibrate at a high speed
 - D. sound like a high pitched squeal to the naked ear

5. What is one property of dielectric materials?
 - A. They do not conduct electricity well.
 - B. An electrical short may occur when dielectric materials are exposed to water.
 - C. They need heat to create a convection transfer.
 - D. Radio waves cannot cause them to heat up.

6. In what year did Raytheon develop the first commercial microwave oven?
 - A. 1933
 - B. 1946
 - C. 1952
 - D. 1967

7. The original Radarange weighed _____ pounds.
 - A. 500
 - B. 1000
 - C. 750
 - D. 1250

8. By 1986, approximately _____ of homes had a residential microwave.
A. 20% B. 25%
C. 30% C. 50%
9. In what state was Percy Spencer born?
A. Pennsylvania B. Texas
C. Virginia D. Maine
10. What is a Faraday cage?
A. A cage made of materials that allow radio communication to enter
B. A metal grid that creates a magnetic field using an electric charge
C. A box that does not allow electromagnetic waves to pass through
D. A cage that holds in heat while allowing radio waves to pass through
11. In what division did Spencer work for Raytheon when he was hired after leaving the Navy?
A. microwave design B. communication
C. radar technology D. power tubes
12. What does a magnetron generate?
A. electromagnetic waves B. a clean vacuum
C. sonic vibrations D. radioactive steam
13. Before the age of 18, Percy was hired by a factory to
A. run a paper press B. install electricity
C. use radio communication devices D. design electric light fixtures
14. While in the Navy, Percy educated himself by reading textbooks on all of the following topics except
A. Trigonometry B. Calculus
C. Chemistry D. Geology
15. What makes popcorn pop?
A. Water turns to steam and causes pressure inside the kernel.
B. Microwaves cause vibration inside the pulp of the corn.
C. Heat causes the outside of the kernel to crack allowing the pulp to pop.
D. Convection of heat from the outside to the inside releases gaseous pressure.
16. When did Spencer file the patent for the first microwave oven?
A. November 1947 B. April 1939
C. October 1945 D. May 1955

17. Which company produced the first microwave small enough to be used in a home?
- A. Amana Refrigeration
 - B. Sappan Stove Company
 - C. Sharp Corporation
 - D. Raytheon
18. Why do some scientists believe that cooking vegetables in the microwave is better than boiling them in water?
- A. Microwaves cook from the inside out which allows the cook to tell more easily when they are done.
 - B. Cooking in microwaves without water allows less nutrients to cook out.
 - C. Vitamins like folic acid and vitamins B and C become more potent due to the microwaves.
 - D. Studies at Cornell University show that cooking vegetables in water destroys the nutrients.

True/False

19. The first Radarange was approximately 5 foot 11 inches tall and cost about \$5,000 each which would be approximately \$66,000 in today's economy.
20. Scientists and engineers discovered that microwaves were good for cooking food and then realized that the properties of microwaves could be used for communication and detection purposes during the war.
21. Another name for magnetrons is cavity magnetron because they have empty spaces, or cavities, within the vacuum device.
22. Unlike conventional ovens that rely on conduction and convection to transfer heat to food, microwaves cook food directly and quickly and often have more even heating.
23. Although there was some use of dielectric materials for heating, no one considered using microwaves for cooking food until Percy Spencer filed his patent.
24. Japan's Sharp Corporation began manufacturing microwave ovens in 1961 and introduced the first microwave oven with a turn table in 1965.
25. According to the World Health Organization, microwave ovens are only considered safe when the door is closed which keeps any residual radiation from leaking out whether the oven is turned on or not.

**UNIVERSITY INTERSCHOLASTIC LEAGUE
2024-25 A+ LISTENING
SPRING DISTRICT TEST – GRADES 5 & 6**

Answer Key

“Microwave Ovens”

- | | |
|-------|-------|
| 1. B | 14. D |
| 2. A | 15. A |
| 3. D | 16. B |
| 4. C | 17. A |
| 5. A | 18. B |
| 6. B | 19. T |
| 7. C | 20. F |
| 8. B | 21. T |
| 9. D | 22. T |
| 10. C | 23. F |
| 11. D | 24. T |
| 12. A | 25. F |
| 13. B | |

UIL LISTENING CONTEST - GRADES 7/8
SPRING DISTRICT 2024-2025

"Vanilla"

Have you ever stopped for ice cream and couldn't decide on a flavor? Chocolate? Rocky Road? Strawberry? And of course there is the ever-present plain vanilla. While there are definitely fancier, more interesting flavors, vanilla is always a reliable choice. Vanilla is also a flavor that is used in coffee creamers, cookie and cake batter, and many other confections. What is vanilla, and where did it originate? Let's find out.

Vanilla is a substance that is derived from vanilla beans which come from the vanilla plant. These aren't beans like green beans that grow in vegetable gardens, however. Vanilla is a member of the orchid family. Vanilla is a native of South and Central America and the Caribbean. The first people that cultivated, or purposely grew, vanilla, are the Totonacs of Mexico along the Mexican east coast. In the 15th Century when the Aztecs conquered the Totonacs, they acquired it. The Spaniards, then, received vanilla from the Aztecs when they conquered them. There are even those who claim that vanilla was introduced to western Europe by Hernan Cortes.

1:00 Hernan Cortes was a conquistador who conquered the Aztecs and claimed Mexico for Spain in 1521. However, although the Tontonac people are given credit for being the earliest cultivators of vanilla, the oldest reports of people using vanilla come from the Maya. The Maya used vanilla in a beverage made with cacao and other spices. The Aztecs conquered the Mayans as well as the Totonacans. Soon they began adding vanilla to a beverage consumed by nobility known as chocolatl. The Aztecs drank their chocolatl with vanilla, and Europeans continued the method.

Vanilla was considered as nothing more than an additive for chocolate until the early 17th Century when Hugh Morgan, an apothecary employed by Queen Elizabeth I, invented vanilla flavored sweetmeats. The Queen adored them. By the next century,

the French were using vanilla to flavor ice cream. In fact, Thomas Jefferson brought a recipe to America from France in the 1780s when he lived in Paris as the American minister to France.

After the Spanish conquest of the Aztecs, Europeans wanted to grow the vanilla plant for themselves. It was expensive to bring vanilla beans all the way from Mexico. The vanilla orchid plant was grown in botanical gardens in both France and England, but the plants never grew the elusive vanilla bean. Growers couldn't understand why until centuries later.

2:00 In 1836, Belgian horticulturist Charles Morren discovered that vanilla's natural pollinator was the *Melipona* bee, an insect that didn't live in Europe. Five years later, on the island of Reunion, everything changed. In 1841, an enslaved boy on the island named Edmond Albius developed a method for hand-pollination of vanilla which involves exposing and mating the flower's male and female parts. His method, although painstakingly slow, was successful and spread from Reunion to Madagascar and other neighboring islands.

Eventually his method made its way to Mexico and then to Europe as a way to increase the availability of the vanilla bean. This new availability led to vanilla finding its way into cakes, ice cream, perfumes and medicines. Farmers were not able to keep up with a growing demand for vanilla due to the time and energy that went into cultivation and processing and prices soared. That problem continues even today as pure vanilla is still made from hand pollinated plants.

Madagascar and Reunion islands are still the world leader in vanilla production with 75 percent of the world's vanilla being produced from those two islands. Other smaller plantations exist in India, Tahiti, and Indonesia. Every American consumes about 5.4 grams of vanilla annually. This amounts to a little over 2 vanilla beans every year. It **3:00** doesn't seem like much per person, but it adds up to over 638 million beans consumed

in the United States each year. And we are just one country. Imagine the amount of vanilla beans needed to supply the needs of the entire world!

Vanilla takes a lot of skill to grow. As learned through history, you can't just put the seed into the ground and expect it to produce a crop. Hand pollination is a learned skill. Many vanilla farmers have been growing vanilla for three to four generations and have passed down their knowledge. Vanilla grows as a clinging vine, reaching lengths of up to 300 feet, from which sprout pale greenish-yellow flowers, about four inches in diameter.

If pollination is successful, a fruit develops in the form of a 6- to 10-inch-long pod filled with thousands of minuscule black seeds. These pods are called beans. Timing is everything. All flavor in the vanilla bean is developed in its last 3-4 months on the vine. The vanilla bean may be at full weight and size at 5 months, but the last 4 months are the most critical because the bean is ripening and developing its flavor components. Vanilla growers need to know exactly when to pick the pods. After the pods are picked, they must be cured and dried.

4:00 After harvesting, the vanilla pods are sorted and graded. They are then blanched in hot water to prevent them from fermenting and placed in large containers to sweat for 36 to 48 hours. This is when the beans start to change from green to brown and start to develop that amazing aroma. From there, the beans undergo alternating periods of sun drying during the day and sweating at night. This last between 5 to 15 days and ends with a period of very slow drying. The beans are placed on racks located in a well-ventilated room. It can take up to 30 days depending on the grade of the bean. The entire process - from growing, pollinating, drying, curing and finally preparing for export - takes around one year. About 5 to 7 pounds of green vanilla beans are needed to produce only one pound of processed vanilla. This is another reason real, pure vanilla is one of the most expensive spices in the world, second only to saffron.

There are several other factors that affect the processing of vanilla. One major factor is environmental. Drought and storms on the Madagascar island chain can create major shortages of natural vanilla extract. In fact, On March 7, 2017, Cyclone Enawo struck Madagascar, the country where the majority of the world's vanilla is grown. The devastating storm was the third-biggest cyclone on record and hit a country already

5:00 grappling with years of drought. The result was a dramatic rise in prices and a change in the taste and aroma of an entire crop. This caused an even larger shortage.

On a normal year, total worldwide production each year is only about 2000 metric tons, which doesn't come close to meeting demand. In fact, because of the high demand and critical shortages, about 99% of vanilla-flavored products on the market don't actually contain real vanilla.

So, if they don't contain real vanilla, what do they contain? In the late 19th Century, scientists figured out how to derive vanillin from less expensive sources than the vanilla bean. Vanillin is the compound that gives vanilla its signature scent. These sources included eugenol (a chemical compound found in clove oil), lignin (which is found in plants), wood pulp, and even cow poop.

Today things have changed a bit. About 85 percent of vanillin used today comes from guaiacol (gwuy -a- col) which is made from petrochemicals. Most of us don't know enough about chemistry to understand it, but basically, vanilla is the plant. Vanillin is one of up to 250 chemical compounds that make up the flavor that we know as vanilla.

6:00 How do we know if a flavor is natural or artificial? The Food and Drug Administration (FDA) defines natural flavors as having come from a spice, fruit, vegetable, edible yeast, herb, bark, bud, root, leaf or similar plant material that is used for flavoring not nutrition. In short, things that naturally grow on the earth that are used to flavor other things, not to get specific nutrients. Artificial flavoring is, on the other hand, substances that do not grow naturally on the earth but instead are chemical compositions. Natural

vanilla comes from the vanilla orchid. Artificial vanilla contains between 250 to 500 different flavor and fragrance components. Most people can't tell the difference. But real vanilla extract is thicker and darker in color, and it is speckled with seed fragments. If you are looking at ice cream made with real vanilla extract as opposed to artificial vanilla, you can see the tiny dark seed fragments mixed in with the cream.

Also, real vanilla extract is made from real vanilla beans that grow naturally in soil. Depending on the nutrients in the soil, the vanilla flavor varies a bit. Artificial vanilla will always be exactly the same because it is made with a recipe of chemicals that doesn't change. Although real vanilla is naturally better, artificial vanilla is at least 20 times less expensive. So, chances are, if you are eating factory made vanilla flavored treats or

7:00 sniffing a vanilla scented candle, it was made with artificial, not natural, vanilla.

If most people can't tell the difference between natural vanilla and artificial, why should it matter to us? Mostly because the demand for less expensive artificial vanilla flavoring comes with a cost to our environment. According to the journal *Industrial & Engineering Chemical Research*, when these compounds are produced, it creates a toxic stream of wastewater. This water must be treated before it can be released back into the environment. Some of the components can only be used one time, which creates tremendous waste. Scientists are working to find more environmentally friendly ways to manufacture it.

So, the next time you check out the ice cream section of your local grocery store or browsing the vanilla scented candles at the candle store, remember the time and effort it takes to extract or create that wonderful vanilla flavor and aroma. There's nothing plain vanilla about it.

SPRING DISTRICT 2024-2025

A+ ACADEMICS



University Interscholastic League



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grades 7 & 8

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SPRING DISTRICT 2024-2025

TEST

"Vanilla"

1. Who were the first people to cultivate vanilla?
A. Aztecs
B. Totonacs
C. Spaniards
D. Europeans
2. Why weren't the Europeans initially successful in growing vanilla beans?
A. The climate was not warm enough.
B. They did not have both male and female plants.
C. They were unable to pollinate the plants.
D. The plants needed a special water to produce a vanilla bean.
3. What type of plant grows the vanilla bean?
A. rose
B. tuber
C. orchid
D. bulb
4. What color is the vanilla flower?
A. greenish yellow
B. pinkish red
C. orangey brown
D. black and ivory
5. Approximately how many vanilla beans are consumed in the United States alone each year?
A. 559 million
B. 638 million
C. 742 million
D. 841 million
6. What catastrophic event hit Madagascar in 2017 affecting an entire crop of vanilla?
A. a major earthquake
B. a severe drought
C. a ferocious wildfire
D. a devastating cyclone
7. If you are looking for ice cream made from real vanilla extract, what should you look for?
A. an ivory color
B. tiny black seeds
C. the signature scent
D. a significantly higher price

8. About what percent of vanilla-flavored products on the market don't actually contain real vanilla? _____
A. 97% B. 98%
C. 99% D. 100%
9. What is one problem scientists have found with creating artificial vanilla?
A. It produces toxic wastewater when it is being produced.
B. The chemical composition can never be exactly replicated.
C. The petrochemicals used can cause cancer.
D. It takes up to 250 chemicals to make the scent.
10. Vanilla is native to all the following except
A. South America B. North America
C. Central America D. the Caribbean
11. Who brought a recipe for ice cream from France to America in the 1780s?
A. Thomas Jefferson B. Hernan Cortes
C. Edmund Albius D. Charles Morren
12. What did a Belgian horticulturist discover about the vanilla plant in 1836?
A. The vanilla plant grows best in tropical climates with lots of rain.
B. Its only natural pollinator is the Melipona bee which is not found in Europe.
C. The vanilla bean requires 3-4 months of sunlight while it is on the vine.
D. Droughts and storms can create variations on the flavor and fragrance.
13. The oldest reports of people using vanilla come from the
A. Spanish B. Aztecs
C. Maya D. French
14. Why are the last 4 months the most critical for a vanilla plant?
A. If pollination is successful, that is when the bean begins to form.
B. This is when the pods begin to sweat and then dry.
C. The vanilla bean is ripening and developing its flavor components.
D. Vanillin starts to form within the pods during this time.
15. Before the early 17th Century, what was vanilla mainly used for?
A. to flavor chocolate drinks B. as a fragrance for candles
C. a substitute for coffee beans D. an additive to sweet meats

16. What is vanillin?
- A. a chemical that causes the vanilla bean to ripen
 - B. the type of pollen that is formed in the male part of a vanilla plant
 - C. the thick syrup that contains the vanilla flavor
 - D. a compound that gives vanilla its fragrance
17. How many vanilla beans does an individual American consume over the course of 1 year?
- A. 1
 - B. 2
 - C. 3
 - D. 4
18. Madagascar and Reunion islands are the world leader in vanilla production with a combined amount that is _____ of the world's vanilla production annually.
- A. 60%
 - B. 75%
 - C. 80%
 - D. 95%

True/False

19. About 5 to 7 pounds of green vanilla beans are needed to produce only one pound of processed vanilla.
20. Vanilla grows as a tall stem reaching about 7-8 feet tall and grows one flower that is approximately four inches in diameter.
21. After harvesting, the vanilla pods are placed in ovens to dehydrate for 36 to 48 hours before being sorted and graded.
22. The FDA defines natural flavors as having come from things that naturally grow on the earth that are used to flavor other things as well as provide specific nutrients needed for health and well-being.
23. Although real vanilla is naturally better, artificial vanilla is at least 20 times less expensive than natural vanilla and is most likely produced from many chemical compounds including those from petrochemicals.
24. Although it is less expensive to manufacture, some of the components of artificial vanilla can only be used one time.
25. Hernan Cortes was a conquistador who conquered the Aztecs and claimed Mexico for Spain in 1521.

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2024-25 A+ LISTENING
SPRING DISTRICT TEST – GRADES 7 & 8**

Answer Key

"Vanilla"

- | | |
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| 11. A | 24. T |
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| 13. C | |