

GRADE 5
Reading

Administered March 2017

RELEASED

READING

Read the selection and choose the best answer to each question.
Then fill in the answer on your answer document.

Science Time

December 2013

In this issue: Robot travels to space

R2, Robot Astronaut

- 1 Since the first person walked on the moon in 1969, technology has aided space exploration. In recent years scientists have built a special robot to accompany astronauts on space missions.
- 2 The astronauts orbiting Earth aboard the International Space Station are currently putting the robot through a series of tests. The robot is designed to handle mundane tasks that are part of the daily routine, such as tracking inventory, cleaning equipment, and taking atmospheric readings. This will give astronauts more time to focus on more complex and interesting aspects of science and exploration.
- 3 Because this robot looks and moves like a person, scientists call it a humanoid robot. The latest model of the humanoid robot is known as R2, short for Robonaut 2.

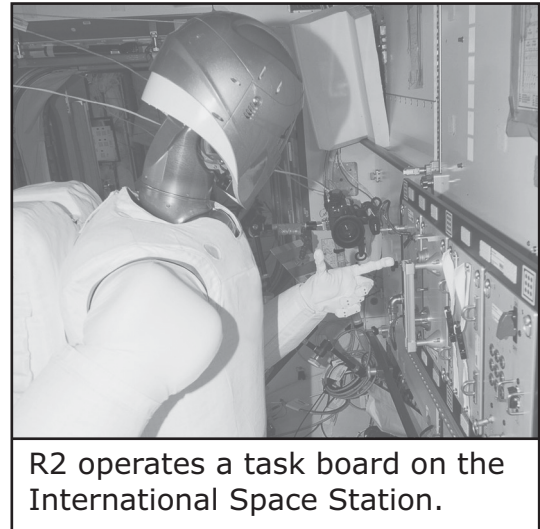


The Humanoid Robot

Courtesy of NASA

History and Characteristics of R2

- 4 R2 was first launched into space on February 24, 2011. It was built by the National Aeronautics and Space Administration (NASA) and the car manufacturer General Motors (GM). GM worked with NASA to create the robot because the company was interested in developing robots that could work in factories doing jobs that are too repetitive for humans.
- 5 R2 weighs 330 pounds and cost \$2.5 million to build. It has arms and a head—filled with vision equipment—but no legs. Its “brain,” or computer, is in its stomach. R2’s arms can hold 20 pounds. Each bendable finger has 5 pounds of grasping force. R2’s hands are also skillful. Since its hands are shaped like human hands, R2 can use human tools to complete tasks traditionally performed by astronauts. Nic Radford, the deputy project manager of R2, says that astronauts “absolutely have their day packed from the minute they wake up until they go to bed. If Robonaut can provide just an hour’s worth of relief to the crew doing something they don’t want to do, that would make it worth it right there.”
- 6 One advantage of working with R2 will be that it can’t complain about its work! Astronauts will also appreciate the fact that the robot can perform its duties without constant supervision. R2 can be assigned a task and then checked on periodically. If R2 does not complete a task correctly, astronauts will be able to make minor adjustments to adapt the robot’s behavior so that the task gets done right.



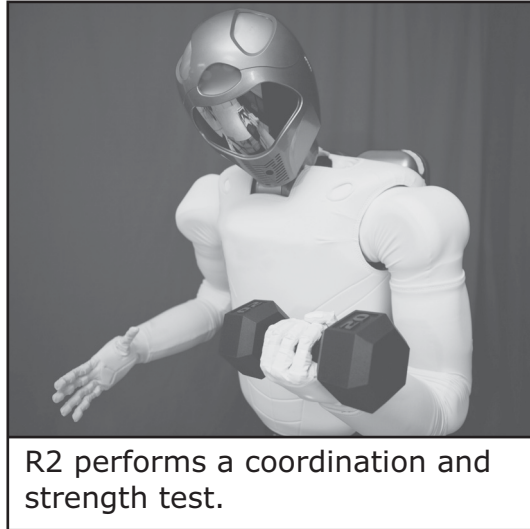
R2 operates a task board on the International Space Station.

Courtesy of NASA

The Future of Humanoid Robots

- 7 R2 is still in the design stage of development, which means that scientists are frequently testing it and looking for ways to improve it. Right now, humanoid robots do not have the protective gear or equipment needed to work outside the space station. As technology advances, humanoid robots will be able to help astronauts with dangerous tasks as well as routine ones.
- 8 In the future humanoid robots will be astronauts’ eyes in space, going places considered too difficult or unsafe for astronauts to explore. Some of them will be mounted on wheels to explore the surface of planets or asteroids. The robots will be able to send back videos and help astronauts gather information about the atmospheres of these places.

- 9 One outcome of using these humanoid robots will be a greater understanding of the interaction between humans and robots. NASA engineers believe that when humans and robots combine forces and work together, the results will be better than what either could achieve alone. John Olson, a director at NASA headquarters in Washington, D.C., says that the project “will allow us to go farther and achieve more than we can probably even imagine today.”



R2 performs a coordination and strength test.

Courtesy of NASA

- 10 So what’s the next step for the humanoid robot? Legs! NASA engineers are developing legs for R2. The legs will be more like a monkey’s legs than a human’s. They will grasp and hold onto handrails as the robot moves through the space station. And what a sight that will be!

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- 1** The author wrote this article most likely to —
- A** share the history of the International Space Station
 - B** persuade people to learn about the International Space Station
 - C** provide information about a new tool used on the International Space Station
 - D** describe some of the dangers on the International Space Station
-

- 2** The details in paragraph 5 support the main idea that R2's design —
- F** helps it accomplish certain kinds of tasks
 - G** took years for scientists to plan
 - H** causes it to be too heavy to complete certain tasks
 - J** works better in space than in a factory

3 Read this quotation from paragraph 9 of the article.

John Olson, a director at NASA headquarters in Washington, D.C., says that the project "will allow us to go farther and achieve more than we can probably even imagine today."

Which detail from the article supports this idea?

- A *Since its hands are shaped like human hands, R2 can use human tools to complete tasks traditionally performed by astronauts.*
- B *Astronauts will also appreciate the fact that the robot can perform its duties without constant supervision.*
- C *In the future humanoid robots will be astronauts' eyes in space, going places considered too difficult or unsafe for astronauts to explore.*
- D *They will grasp and hold onto handrails as the robot moves through the space station.*

4 Which text feature provides information about R2's abilities?

- F The subheadings
- G The title of the article
- H The caption of the first photograph
- J The caption of the second photograph

5 What is the best summary of paragraphs 4 through 6?

- A** R2 is a new humanoid robot that will help astronauts on the space station. Its arms can hold 20 pounds, and its fingers apply 5 pounds of force to pick things up.
 - B** Scientists have built a special humanoid robot called R2 that looks and moves like a human. GM and NASA worked together to create a robot that could complete simple jobs.
 - C** Scientists at NASA and GM have developed a humanoid robot called R2 for space missions. R2's body has features that help it move like a human and complete tasks independently.
 - D** R2 is a humanoid robot built to help astronauts on the space station. It weighs 330 pounds and cost \$2.5 million to build, but astronauts like the fact that it will give them more time to rest.
-

6 What is the most likely reason the author included the information in paragraph 10?

- F** To explain what robots of the future will be required to do
- G** To highlight the effectiveness of using humanoid robots in space
- H** To support the idea that businesses should work together on inventions
- J** To describe the next stage for the humanoid robot

Read the next two selections. Then choose the best answer to each question.

July 5, 2013

South Bend Tribune

Pucker-up Time in Eau Claire

by Lou Mumford

- 1 EAU CLAIRE—Apparently, spitting tart cherry pits, an activity that began at Eau Claire’s Tree-Mendus Fruit Farm as a neighborhood get-together and evolved into an international competition, is a difficult habit to break.
- 2 Don’t believe it? The orchard at 9351 E. Eureka Road on Saturday will host its 40th annual pit spit.
- 3 With every such event, it seems, there has been suspense and even shock as contestants let the pits fly across the 100-foot asphalt court. Usually, it’s Rick “Pellet Gun” Krause, a 15-time tournament champion, or members of his pit-spitting family who are responsible for the shock and awe.
- 4 Take, for example, Brian “Young Gun” Krause’s spit in 2003 that traveled, with the roll—yes, rolls count—an incredible 93 feet, 6 1/2 inches. Spits like that are the reason a Krause usually walks off as tournament champion.
- 5 But the consecutive 10-year-plus Krause family reign came to a screeching halt in 2012 when unemployed Chicago truck driver Ronn Matt, 46, blew away the competition with a 69-foot spit. Surprisingly, he said he had never before spat a cherry pit, although he admitted spitting larger peach pits at the Glad Peach Festival in Coloma where he’s a two-time champion.
- 6 Asked about his technique, Matt said he doesn’t have one.
- 7 “I just wing it,” he said.
- 8 Teichman¹ said he’s expecting Rick Krause, who lives in Arizona, to return Saturday for another shot at the title. Expected, too, are Brian Krause and another Krause offspring, Matt, who finished third last year with a spit that traveled just shy of 54 feet. Rick Krause was the runner-up with a spit of 61 feet, 2 inches.

¹Herb Teichman is the contest founder and the owner of the Tree-Mendus Fruit Farm.

- 9 Teichman said that while last year's frosts resulted in relatively few cherries for the competitors, the harvest this season has been such that cherries are abundant. Given the event's 40th anniversary, there will be more activities Saturday as well, including prizes for all qualifying children contestants and several surprise award presentations.
- 10 Qualifying rounds run from 10 A.M. to noon. At 1 P.M., a dignitaries' competition is on tap, followed at 1:30 P.M. by youth competitions for age groups 5 and younger, 6 to 8, and 9 to 12. Women will compete at 1:45 P.M. and the championship spit-off is set for 2 P.M.
- 11 Teichman, a self-described "pitiful pit spitter" whose best spit covered a little more than 27 feet, said competition could be intense with the expected appearance of a competitor from California who won a similar tournament in that state.
- 12 As for Rick Krause, he no doubt will be ready to roll.
- 13 "He's probably behind a tree right now, practicing," Teichman said.

South Bend Tribune

Cherry Very

by Heidi Mordhorst

Be sneaky, be cheeky
Pinch from the kitchen
The reddest, the roundest there are

A bowl full of cherries
5 A bowl of the very
Most cherriest bombs by far

Backbone straight
Step up to the plate
Puff up your chest and lungs

10 Swallow the fruit
Ready to shoot
Put the pit in the groove of your tongue

One more tip:
Round your lips
15 To launch it without a hitch

Don't get tense
Aim for the fence
Wind up like you're fixing to pitch

Now blast it hard
20 Across the yard
Kissing that missile good-bye

It's over the fence!
It's out of the park!
It's a letloose cherryjuice
25 noschool slobberdrool
spitwhistle summerfun home run!

From *Pumpkin Butterfly: Poems from the Other Side of Nature* by Heidi Mordhorst. Copyright © 2009 by Heidi Mordhorst.
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Use “Pucker-up Time in Eau Claire” (pp. 8–9) to answer questions 7–10.
Then fill in the answers on your answer document.

- 7 According to the article, the annual event began when —
- A a local family wanted to prove they could win an award
 - B neighbors gathered at a local fruit farm
 - C a frost ruined a crop of cherries at a local fruit farm
 - D people came to the town to seek employment

- 8 Look at the dictionary entry.

shot \ˈshät\ *noun*
1. a throw in an effort to score points in a game 2. a small amount applied at once 3. a try or attempt 4. an effective remark

Which definition best matches the way the word shot is used in paragraph 8?

- F Definition 1
- G Definition 2
- H Definition 3
- J Definition 4

- 9** Which sentence best states the main idea of the article?
- A** A truck driver from Chicago was the champion of the pit spit in Eau Claire in 2012.
 - B** The pit spit, which features many eager participants, will be taking place again at the Tree-Mendus Fruit Farm in Eau Claire.
 - C** Although last year’s cold weather kept the cherry harvest small, this year the harvest will be ideal for the pit spit.
 - D** Many members of the Krause family will be participating again this year at the pit spit.
-

- 10** Based on the information in the article, what can the reader infer about the contest?
- F** Some people travel from places outside the city to participate in the event.
 - G** The contestants are required to grow the cherries that are used in the event.
 - H** The contestants need to have participated in a similar event in the past.
 - J** People from the town enjoyed the event only when it was a small neighborhood gathering.

Use "Cherry Very" (p. 10) to answer questions 11–14. Then fill in the answers on your answer document.

- 11** The reader can tell that the speaker is experienced at spitting cherry pits because she —
- A** provides several suggestions about the best way to prepare for the activity
 - B** identifies the number of times she has practiced over the summer
 - C** reveals that there is a bowl of cherries in her kitchen
 - D** states that she has spit a pit in her yard
-
- 12** What is one important effect of the rhyme scheme of the poem?
- F** It focuses the reader on the most important words in the poem.
 - G** It helps the reader visualize the problem the speaker experiences.
 - H** It creates a rhythm that emphasizes the quick actions in the poem.
 - J** It helps explain what spitting a cherry pit sounds like.

13 Which line from the poem best helps the reader understand the meaning of launch?

- A** Backbone straight
 - B** One more tip:
 - C** Round your lips
 - D** Aim for the fence
-

14 What is most likely the reason the poet compares spitting cherry pits to playing baseball?

- F** To show that spitting cherry pits is just as much a team sport as baseball
- G** To help the reader relate a well-known activity to an activity that might be unfamiliar
- H** To explain that less time is required for spitting cherry pits than for playing baseball
- J** To show the reader that some activities are more interesting than others

Use “Pucker-up Time in Eau Claire” and “Cherry Very” to answer questions 15–18. Then fill in the answers on your answer document.

- 15 Which message is expressed by **both** the article and the poem?
- A Some activities can be appreciated simply for the fun of them.
 - B Even if you do not succeed right away, you must keep on trying.
 - C A great talent is often shared by family members.
 - D It is important to be a polite and kindhearted winner.
-
- 16 What is one main **difference** between the event the author describes in the article and the event the speaker describes in the poem?
- F The type of cherry pit that is used
 - G The setting
 - H The excitement people feel
 - J The rules that are followed

- 17** Which of the following describes a **difference** between the article and the poem?
- A** The article provides details of an event related to spitting cherry pits, while the poem describes the process of spitting cherry pits.
 - B** The article provides information about activities that occur before a contest, while the poem describes the results of a contest.
 - C** The article focuses mainly on the people who spit cherry pits, while the poem features those who observe the activity.
 - D** The article explains how to organize a local competition, while the poem highlights how to get involved in one.
-

- 18** Which idea is expressed in **both** the article and the poem?
- F** Spitting cherry pits is a difficult activity to plan and organize.
 - G** Spitting a cherry pit as far as possible can be fun.
 - H** The process of spitting a cherry pit is exciting to describe.
 - J** Recording the distance a cherry pit traveled is difficult.

**Read the selection and choose the best answer to each question.
Then fill in the answer on your answer document.**

An All-Star Inspiration

- 1 For most of her school years, Tamika Catchings kept a secret from her classmates and teachers. Catchings always sat up front and stayed after class to ask questions about the lessons. She prepared for each class by reading ahead. No one would have guessed that Catchings, an excellent student, was at a disadvantage. Her secret? Catchings was born with moderately severe hearing loss in both ears. If someone spoke too quietly or with their back to her, she was unable to know what they were saying. To compensate, she taught herself to read lips. To keep up with her schoolwork, she relied on textbooks for instruction.

The Will to Work

- 2 Though Catchings had hearing aids, she objected to wearing them. To her, the hearing aids were just awkward devices that attracted ugly remarks from her classmates and made her feel different. One day when she was in elementary school, she took them off and tossed them away in a field. The hearing aids were expensive, and her parents refused to replace them. Catchings began her new life. She worked hard in the classroom and at sports. Soon, even without her hearing aids, she surpassed her schoolmates and her teammates.
- 3 While attending high school in Illinois, Catchings led her basketball team to the state championship in 1995. That same year she and her mother moved to Duncanville, Texas. There, Catchings helped the basketball team win a Texas state title and earned herself national awards as player of the year. Many college basketball coaches noticed her talent. She chose to attend the University of Tennessee, partly because she admired the Lady Vols coach Pat Summitt. During her four years at the university, the Lady Vols had an overall record of 134 wins and only 10 losses, partly because of Catchings's outstanding play.

Embracing the Truth

- 4 In addition to helping her team at the university, Catchings made a big change in her life. Coach Summitt noticed that players sometimes had to repeat instructions to Catchings while on the court. Summitt convinced Catchings that wearing hearing aids would not only help her be a better player but also help others who were hearing-impaired by allowing her to serve as a role model. Catchings started wearing her hearing aids and eventually began to speak openly about her hearing loss. As Coach Summitt predicted, Catchings has been an inspiration to many children. She has proved that having a disability does not have to be a disadvantage.

- 5 Catchings has even written a book, *Dreams Are for Catching*, to share her story with others. Most importantly, she combines her love for basketball with her passion for helping children achieve their dreams. She strongly believes—and is living proof—that working hard and having confidence can help anyone succeed.

Giving Back

- 6 In 2004 Catchings founded the Catch the Stars Foundation, an organization that encourages children to set goals and dream big. Now a resident of Indianapolis, she plays for the Indiana Fever, a WNBA¹ team. She wants the young people in her town to be all that they can be. Spending time with them and listening to their stories give her great personal satisfaction. Through her foundation, children can enroll in programs such as fitness clinics, basketball camps, back-to-school celebrations, reading classes, and other programs that promote healthy lifestyles. Every year she hosts the annual Catch the Stars Scholar Athlete Reception, where a male and a female honoree are each awarded a \$2,500 college scholarship. Her work with the foundation has benefited many local youths.



Catchings Playing for the Indiana Fever in 2011

© AP Images/Pat Lovell

- 7 Ms. Basketball (a title Catchings earned in high school) is no longer worried about what others think of her. By 2010 Catchings had won the WNBA league's Most Valuable Player award and two gold medals with the U.S. Women's Olympic Basketball Team. But those achievements were just a stepping-stone to another important goal for Catchings. The little girl who once tried to hide her disability now motivates others and

¹WNBA stands for Women's National Basketball Association.

encourages those with a disability to appreciate how special they are. She wants all children, whether they have a disability or not, to believe that they can “catch their dreams one star at a time.”



Catchings, while on the U.S. Women's Olympic Basketball Team in 2012, autographs a basketball for President Barack Obama.

© AP Images/Pablo Martinez Monsivais

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- 19** Which sentence from the selection best shows that Catchings cares about other people?
- A** *Catchings always sat up front and stayed after class to ask questions about the lessons.*
 - B** *During her four years at the university, the Lady Vols had an overall record of 134 wins and only 10 losses, partly because of Catchings’s outstanding play.*
 - C** *Most importantly, she combines her love for basketball with her passion for helping children achieve their dreams.*
 - D** *She strongly believes—and is living proof—that working hard and having confidence can help anyone succeed.*
-

- 20** Read the following information.

Sur-: Anglo-French prefix meaning “above”

This information helps the reader understand that the word surpassed in paragraph 2 means —

- F** did better than
 - G** spoke kindly about
 - H** spent more time with
 - J** was admired by
-
- 21** What event in Catchings’s life has most influenced her charity work?
- A** She participated on the U.S. Women’s Olympic Basketball Team.
 - B** She moved to Duncanville, Texas.
 - C** She decided to stop hiding her disability while in college.
 - D** She led her high school teams to state championships.

22 Catchings's actions throughout her school years suggest that she —

- F** wanted to be noticed by her classmates and teammates
 - G** was determined to do her best in many areas of her life
 - H** thought her hearing would improve as she got older
 - J** knew she would play professional basketball one day
-

23 What is a theme in the selection?

- A** Every person has unique talents.
- B** People make difficult decisions every day.
- C** Young people need community support in order to succeed.
- D** People can often overcome obstacles through hard work.

24 The author organized the selection with subheadings most likely to —

- F** show how Catchings’s actions have affected others
 - G** provide information about each person who helped Catchings
 - H** focus on different phases of Catchings’s life
 - J** highlight the charities that Catchings is most involved with
-

25 What was an unexpected result of Catchings’s relationship with Pat Summitt?

- A** Catchings taught Summitt lessons on how to communicate better.
- B** Catchings helped Summitt become a better basketball coach.
- C** Summitt taught Catchings how to overcome her disability.
- D** Summitt encouraged Catchings to use her disability to set a good example.

**Read the selection and choose the best answer to each question.
Then fill in the answer on your answer document.**

In 1803, Meriwether Lewis and William Clark began their journey to explore lands west of the Mississippi River. Lewis's dog, the narrator in this story, traveled with them on their journey.

from
**Lewis and Clark and Me:
A Dog's Tale**

by Laurie Myers

- 1 Lewis and I had stopped by the river's edge to survey the flow of the water when the calf wandered up. I do not know what it was thinking. Probably nothing. I've never considered buffaloes to be smart. Anyway, this buffalo calf took one look at me and went straight to Lewis.
- 2 When Lewis walked on, the calf followed, right on his heels. That calf was acting as though Lewis were his mother.
- 3 Now, when Lewis and I walked, we sometimes split up. I'd hear an animal, or smell something that I needed to check out, and I would head in a different direction. Not this time. I stayed with Lewis and the calf, but I walked a few yards behind. The calf kept looking back at me. Maybe he was hoping I would disappear so that he could have Lewis all to himself, or something ridiculous like that.
- 4 Lewis stopped by the river again. The calf stayed by his side. I stared at the calf. Why was he attaching himself to Lewis? Did he think he was going to stay with Lewis permanently?
- 5 I needed to scare off the calf. That would put an end to this nonsense. I was sure Lewis didn't want him around any more than I did. I decided a growl would be enough. After all, this was just a calf. Of course, buffaloes are stubborn. If I needed to, I could throw my paws into the air and play the part of bear-dog. That would work.
- 6 I took a deep breath in and started a low growl. It was not my most vicious growl, just a low, constant rumble to let that calf know he wasn't welcome. The calf looked over his shoulder at me, then took a step closer to Lewis. That didn't make any sense. Lewis and I were a team; moving close to Lewis was like moving close to me.

- 7 Next, Lewis did something that surprised me. He reached out his hand and placed it on the calf's head, the same way he put his hand on my head sometimes. That was the last thing I expected. Could it be that Lewis wanted the calf to stay with us? What was Lewis thinking?
- 8 "Where's your mother?" Lewis said.
- 9 At that moment everything became clear, like the streams in the mountains. I looked at the calf's eyes. He didn't have those piercing black eyes that the adult buffaloes have when they're mad. His eyes were soft, tinted with fear.
- 10 The calf was afraid of me. How could I have missed that? The calf reeked of fear. He was twice my size, but he was frightened nonetheless. I backed away.
- 11 Lewis scratched the calf's ears. I was touched by the gentle way Lewis handled him.
- 12 Lewis turned and started back toward the boat, the buffalo calf close at his heels. I followed, keeping my distance so as not to scare the calf. When we arrived at the boat, Lewis and I got in. The calf watched us from the shore as we pulled away.
- 13 Suddenly it all seemed very funny to me. Imagine a buffalo calf thinking it could be a part of our lives. How in the world would he get in and out of the boat? I thought about the ridiculous sight. It's times like that when I wish I could laugh. I wagged my tail.
- 14 Now, when I think back on the whole situation, I guess I was jealous. I see that in young dogs. A new puppy comes along, all playful and cunning, and everyone pats it and plays with it. Then the big dogs jump all over themselves trying to get noticed. Well, I didn't jump all over myself, but I suppose that if it had gone much further, I might have. My feelings for Lewis have always run strong.

From LEWIS AND CLARK AND ME © 2002 by Laurie Myers. Reprinted by permission of Henry Holt & Company, LLC. All Rights Reserved.

26 Read this sentence from paragraph 12.

*I followed, keeping my distance
so as not to scare the calf.*

What can the reader conclude about the dog from this sentence?

- F** He is no longer interested in getting on the boat with Lewis.
 - G** He is not certain of where Lewis wants to explore next.
 - H** He has a new understanding of the calf's feelings.
 - J** He is no longer frightened by the calf.
-

27 Which idea is developed throughout the story?

- A** The dog's shock at Lewis's actions
 - B** The dog's belief that he is much smarter than the calf
 - C** The dog's concern that he and Lewis have explored the same area
 - D** The dog's determination to prevent anything from coming between him and Lewis
-

28 What do the dog's questions in paragraphs 4, 7, and 10 suggest?

- F** The dog is trying to make sense of the situation.
- G** The dog is not familiar with the surroundings.
- H** The dog is unsure about his feelings for Lewis.
- J** The dog is not paying attention to Lewis.

29 What is the best summary of paragraphs 1 through 5?

- A** Lewis and the dog enjoy walking together, and on this day, they are traveling near the banks of a river. A buffalo calf ignores the dog and follows Lewis.
 - B** The dog is taking his usual walk with Lewis when they meet a buffalo calf. The dog thinks the calf is behaving strangely around Lewis.
 - C** While Lewis and the dog are on a walk, a buffalo calf joins them. Because the calf follows Lewis closely, the dog thinks of a plan to scare it away.
 - D** The dog notices that a buffalo calf is following Lewis. The dog decides that he had better stay close to Lewis instead of exploring the area.
-

30 In paragraph 14, the dog wants to explain —

- F** why he reacted to the calf as he did
- G** that he is still as playful as he used to be
- H** how he has changed as he has gotten older
- J** that young dogs are more lovable than calves

- 31** In paragraph 9, the author uses a simile to help the reader understand that the dog suddenly —
- A** forgives Lewis for paying attention to the calf
 - B** realizes why the calf is following Lewis
 - C** notices a new place to explore on his walk with Lewis
 - D** remembers that he and Lewis need to return to the boat
-

- 32** Which sentence best reveals the dog’s view of his relationship with Lewis?
- F** *I stayed with Lewis and the calf, but I walked a few yards behind.*
 - G** *I was sure Lewis didn’t want him around any more than I did.*
 - H** *Lewis and I were a team; moving close to Lewis was like moving close to me.*
 - J** *Next, Lewis did something that surprised me.*

**Read the selection and choose the best answer to each question.
Then fill in the answer on your answer document.**

The Making of a Baseball Bat

- 1 For baseball fans, there's nothing quite like the crack of a wood baseball bat when it makes contact with a baseball. Although many schools and leagues use metal bats, players in the major leagues have always been required to use wood bats. These bats are made for each player, often with specific features requested by the players themselves.

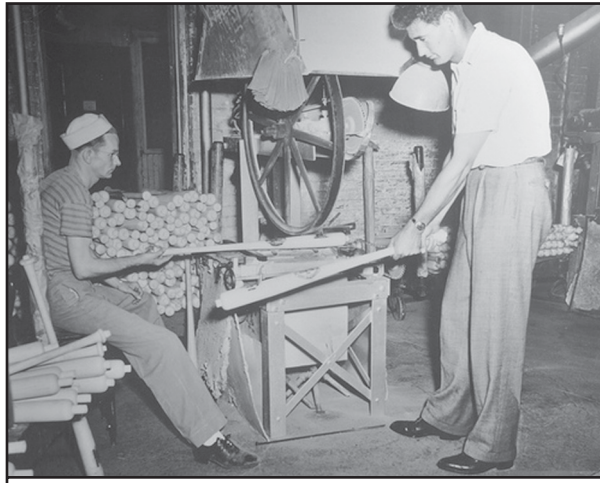
The Birth of a Legend

- 2 One of the most famous baseball-bat makers is Hillerich & Bradsby Company. The idea for the company's famous baseball bat, the Louisville Slugger, was born in 1884 when John "Bud" Hillerich took a break from working at his father's woodworking shop in Louisville, Kentucky, to watch a local baseball game. One of the players, Pete Browning, was so frustrated when he couldn't hit the ball that he broke his bat. Hillerich offered to make Browning a new bat. The two went to the woodworking shop, where Browning told Hillerich exactly what kind of bat he wanted. After Browning got three hits the first day he used his new bat, other baseball players began asking Hillerich to make bats for them, too.
- 3 There was just one problem. Hillerich's father was not interested in making bats. At first, he refused to make bats for baseball players, preferring to continue making products such as stair rails and butter churns. Hillerich finally convinced his father that making bats would be good for the shop, and a new business was born.

A Standard Slugger

- 4 Since 1884 more than 100 million Louisville Slugger bats have been made. The bats have remained popular with major league baseball players for more than 100 years.
- 5 In 1905, Honus Wagner, one of baseball's best hitters at that time, became the first professional athlete associated with a sports product. He signed a contract that allowed his signature to appear on Louisville Slugger bats. Once other baseball players saw how the Louisville Slugger affected Wagner's hitting, they, too, began using and promoting the bats.
- 6 Professional baseball became very popular in the United States during the 1920s. Louisville Slugger bats were favored by the game's biggest stars. Baseball legends such as Babe Ruth and Ted Williams went to the factory where Louisville Sluggers were made and talked with the workers. The talented workers then crafted the bats according to each player's description. The players knew exactly how they wanted their

bats designed. Williams once complained that the handles on his bats didn't feel right. When workers measured the bats, they found out he was correct. The handles were too narrow—by $\frac{5}{1000}$ of an inch!



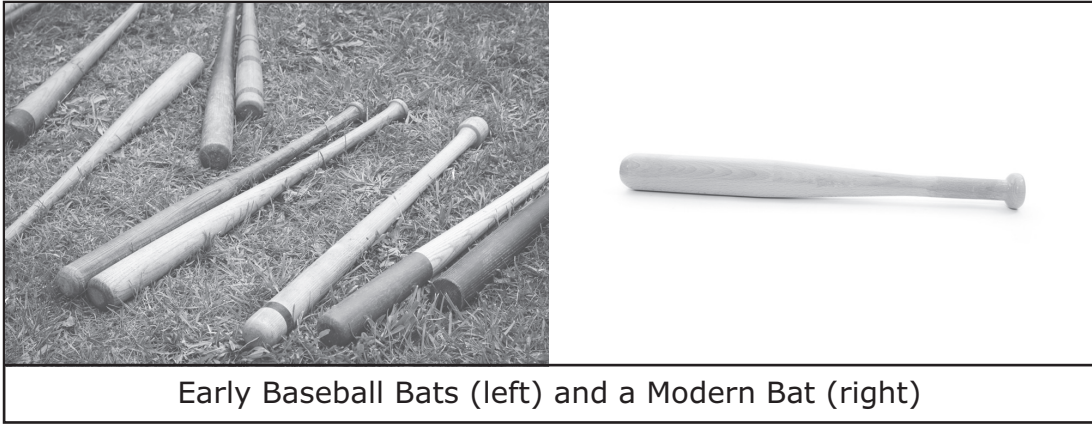
Ted Williams inspects a baseball bat.

© Courtesy Louisville Slugger Museum & Factory

- 7 Professional athletes have grown accustomed to using the same equipment in games and in practice. They know that even a slight change in the proportions of a baseball bat can hurt a player's performance in a game. Professional baseball players spend much time and effort to ensure they are using equipment that is the right size.

Old and New

- 8 In the early days of baseball, bats varied in size and shape. They were made with any kind of wood that was available. Most of today's bats are made from two kinds of wood: maple and ash. Maple is harder than ash, so a bat made from maple can strike the ball with more force than a bat made from ash. Ash is lighter than maple, so a bat made from ash can be swung faster. The shape of today's baseball bats is also more regular—narrow at the handle and wide at the end.
- 9 Although the basic design of today's professional bats is similar, it is up to each player to find the bat that works best. Several factors are important for a player to consider. Bats come in different lengths and weights. The barrel diameter, or the distance around the top of the bat, also varies. And then there are the different types of wood to choose from. The best way for baseball players to find the bat that will most enhance their game is to try several bats and see which one feels right.
- 10 Baseball bats have changed a great deal over the years. Players now have more choices when selecting a bat. But one thing remains constant: the opportunity for players to perform at their best, thanks to the great designs offered by Hillerich & Bradsby Company and its Louisville Slugger.



Early Baseball Bats (left) and a Modern Bat (right)

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- 33** The reader can conclude that when Hillerich first asked his father to make wood bats, Hillerich's father —
- A** planned to change his business by making only wood bats
 - B** believed metal bats would sell better than wood bats
 - C** wanted to sell his company rather than make wood bats
 - D** thought his company would not benefit from making wood bats
-

- 34** In paragraph 6, the details about Ted Williams's experience with Louisville Slugger bats support the idea that —
- F** professional athletes can notice slight differences in equipment
 - G** Louisville Sluggers are not the best bats available to professional baseball players
 - H** negative comments about a product can harm a company's business
 - J** Louisville Sluggers are better designed today than when they were first made
-

- 35** Which sentence best states the main idea of the section titled "Old and New"?
- A** *They were made with any kind of wood that was available.*
 - B** *The shape of today's baseball bats is also more regular—narrow at the handle and wide at the end.*
 - C** *Bats come in different lengths and weights.*
 - D** *Baseball bats have changed a great deal over the years.*

36 What is the meaning of accustomed in paragraph 7?

- F** Managed by
 - G** Different from
 - H** Changed by
 - J** In the habit of
-

37 The reader can infer that one of the main reasons the production of Louisville Sluggers began was because of Hillerich's —

- A** willingness to use his knowledge of woodworking to help someone
 - B** understanding of the game of baseball
 - C** ability to promote a product using a variety of advertising
 - D** experience playing baseball with a metal bat
-

38 Based on information in the selection, what is one similarity between Pete Browning and Honus Wagner?

- F** Their success encouraged other players to use Louisville Sluggers.
- G** They both ordered a wood bat that was not made correctly.
- H** Their friendship with Hillerich helped improve their batting skills.
- J** They both persuaded Hillerich's father to make Louisville Sluggers.



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