



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2008**

**Grade 11
Reading**

Reading

1 The root *pop* in the words popular and populate means

- A. growth.
- B. culture.
- C. people.
- D. order.

2 Which word **most** clearly shows that George was making fun of his brother?

I noticed George was _____ as his brother continued to talk.

- A. smiling
- B. beaming
- C. grinning
- D. smirking

Read this newspaper article to learn about a surprising twist in the campaign to control the spread of fire ants. Then answer the questions that follow.

In Texas, Everybody Hated Fire Ants—Until They Vamoosed Insect Experts Say Varmints Keep Other Pests in Line; An Explosion of Chiggers

Susan Warren

COLLEGE STATION, Texas—Entomology professor Burt Drees had just wrapped up his standard lecture to cattlemen on how to get rid of the much-despised fire ant when a rancher approached him with a question.

“What I really want to know is, ‘How do we bring ’em back?’”

A decade-long series of droughts haven’t just wreaked havoc on Texas agriculture, they have also suppressed populations of the moisture-loving fire ants that have become a scourge to homeowners, landscapers, farmers and ranchers across the South. That might sound like a good thing, and, on balance, it is. But there is something to be said for the bug-chomping fire ant. It can help control other pests, including cattle-plaguing ticks, and the drought is helping to drive that home.



Fire ants, which first traveled to the U.S. in shipping cargoes from Brazil in the 1930s, are indisputably nasty beasts. When a mound is disturbed, the ants swarm by the hundreds, covering feet and ankles in seconds and crawling up into

clothes. The quarter-inch-long reddish-brown insects latch on to skin with their jaws, arch their backs and plunge in their stinger to inject a potent venom. They then pull out, rotate and sting again. The wound site burns and swells, then forms a blister that can itch for days. People allergic to the venom can go into anaphylactic shock and die.

5 The marauding ants devour young bird and reptile hatchlings, destroy electrical systems by nesting in motors and wiring boxes, and can blind or maim calves unlucky enough to be born next to a mound. The fire ant, which has spread across the southeast U.S. and into California in recent decades, costs the nation nearly \$6 billion annually in damage, lost revenue, and insect control measures, economists say.

It is hard for most people to imagine that there could be anything good to say about such a pest. But entomologists have known for some time that the fire ant’s predatory habits can actually come in handy. The eggs and larvae of other harmful and annoying insects, including ticks, chiggers, fleas and cockroaches, make a tasty snack for ravenous fire ants. They benefit farmers by eating crop pests such as boll weevils and sugarcane borers. Where fire ants abound, populations of other pests can be reduced.

Montgomery, Texas, rancher Robert McGehee hates fire ants. The foot-high dirt ant-mounds often clog up his hay-cutting equipment, forcing him to climb down from his tractor and fight swarming ants to clean it out. Recently, he had to quickly strip off his ant-covered clothes in the middle of a cow pasture to keep from being eaten alive.

The dry spell plaguing Texas over the past four years has driven fire ants, which hate dry conditions, deeper underground. Dr. Drees, who works at Texas A&M University, surveyed Mr. McGehee’s property

last week. He saw a dramatic reduction in ant mounds while other bug populations were surging.

As Mr. McGehee walked through one of his pastures on Wednesday, grasshoppers leaped up like popcorn popping around his feet. Chiggers, tiny biting mites, have exploded. “I caught a calf the other day that had ear ticks,” he said. “I hadn’t seen ear ticks in 30 years.”

Don Goodman, a veterinarian in Navasota, Texas, said he has been fielding more calls about tick-infested pets and livestock in the past couple of years. Severe tick infestations once were a big problem for ranchers. Tick-covered cattle often get sick and waste away. Ear ticks can crawl deep into a cow’s ear canal and cause deadly brain infections.

Kerrville, Texas, rancher Elmer Ahrens remembers a time when he couldn’t use some pastures because the ticks were so thick “we couldn’t even get out of the truck without being covered.” But when the fire ants became a problem 20 years ago, the ticks began to disappear. “I actually dug some ants up and transplanted them in the tick area,” Mr. Ahrens said.

Entomologists can’t say for sure that the recent rise in other pesky insects results from the decline of the ants, but evidence is mounting as the drought and pesticide programs continue to reduce the ants’ numbers.

Paul Nester, a fire-ant control specialist for the agricultural extension office in Houston, said he was happy to see an ant-targeted pesticide program eliminate 90% of the fire ants at a rural Girl Scout facility last year. But several months later, rangers reported they were suddenly having more problems with ticks, he said.

Saying nice things about fire ants hasn’t been a very popular undertaking. When Mickey Eubanks, an entomologist at Auburn University in Alabama, wrote a 1999 exposition about fire ants titled, “Can bad bugs do good?” even his own father thought he was nuts, he said. The attitude has been: “Fire ants are bad. End of story,” says Dr. Eubanks.

Understanding fire ants’ full role in the environment—for good and bad—is becoming a more important job as global commerce spreads the easily transportable insect around the world. According to a recent study, the ants now have been spotted in Australia. Large parts of Europe, Asia and Africa are at risk. “They’re here to stay, so we might as well know what the heck they’re doing,” Dr. Eubanks argues.

University of Georgia entomologist John Ruberson is studying how the underground activity of fire ants affects the soil. The tunneling ants are so numerous, they can move more earth than earthworms, loosening soil and getting more water and oxygen to plant roots. One way Southerners can spot fire ants is by the longer, greener grass growing up around their mounds.

In central Texas, a standard part of the vineyard tour at Messina Hof Winery includes a testimonial to what winery owner Paul Bonarrigo calls, “My friend, the fire ant.” He has noticed that grapevines with a fire-ant mound at their base tend to be healthier than their neighbors. Since then, he has let the ants do their thing. Mr. Bonarrigo says he has had to use far less pesticide to combat other crop pests.

Another plus: “It’s increased worker productivity by 50%,” he said, “because nobody stands around anymore.”

3 The word havoc **most** nearly means

- A. confusion.
- B. migration.
- C. destruction.
- D. extinction.

4 What has caused fire ants to disappear in the South?

- A. the campaign to eliminate them
- B. the change in the climate
- C. the spread of their natural enemies
- D. the replacement of farms by suburbs

5 The word indisputably refers to something that

- A. cannot be argued.
- B. cannot be understood.
- C. cannot be prevented.
- D. cannot be mentioned.

6 What is the **main** idea of paragraph 5?

- A. Livestock are in danger from fire ants.
- B. Fire ants have continued to spread.
- C. Fire ants cause extensive damage.
- D. Control of fire ants is expensive.

7 Create an **organizer** (list, chart, web, etc.) to show how fire ants are both harmful **and** helpful. Use information from the article in your organizer.

8 Why did Elmer Ahrens transplant some fire ants on his ranch?

- A. to protect his most valuable crops
- B. to use them to control another pest
- C. to see if they would stop attacking livestock
- D. to test if they could survive in a new environment

9 Based on the article, fire ants do **not** attack

- A. fleas.
- B. cattle.
- C. people.
- D. grasses.

10 Which observation by Paul Bonarrigo was intended to be humorous?

- A. Grapevines with a fire-ant mound at their base are healthier.
- B. He has not attempted to control the fire ants in his vineyard.
- C. He has had to use far less pesticide to control other pests.
- D. The productivity of his workers has greatly increased.

11 What is the **main** idea of the article?

- A. Encouraging the spread of fire ants is a controversial idea.
- B. The disappearance of fire ants has had some unexpected consequences.
- C. Farmers and ranchers in Texas confront many problems with insects.
- D. Scientists have a renewed interest in the behavior of fire ants.

12 Evaluate whether the author presents a clear and accurate picture of changing attitudes toward fire ants. Use information from the article to support your answer.

Read this Internet article to learn what happens when a pitcher throws a fast pitch. Then answer the questions that follow.

FIREBALL Physics

Have Baseball Pitchers Reached the Limit of Human Endurance?

Chris Jozefowicz

They're called fireballers or flamethrowers—pitchers who can throw a baseball 160 kilometers (100 miles) per hour or more. A baseball moving that fast takes less than half a second to travel from the pitcher's hand to the catcher's mitt.

When fireballers throw heat like that, they put their arms through one of the fastest motions the human body is capable of. Such a pitch subjects the arm to forces that put it near the breaking point. A 100-mph pitch may psych out a batter, but might it also be the upper limit an athlete can handle?

Who's Fastest?

Experts and fans argue over who has thrown the fastest pitch. The *Guinness Book of World Records* says it was Nolan Ryan, then with the California Angels, who threw a fastball 100.9 mph in 1974. Atlanta Braves pitcher Mark Wohlers was clocked at 103 mph in 1995, and just last year, Randy Johnson threw a baseball 102 mph while he was playing for the Arizona Diamondbacks. (Major League Baseball doesn't officially track pitch speed.)

Whether it was 101, 102, or 103, the important point is that the top pitching speed hasn't budged much even as athletes have become stronger over the past 30 years. To understand why, you need to know where the forces of a pitch come from and what parts of the body they put stress on.

Hurling Heat

The overhand pitching movement is highly complex. Much more than an arm is involved. Muscles, tendons, ligaments, and joints—all the way from the toes to the fingers—work together. "It's a continuous, fluid motion," says Glenn Fleisig, who studies biomechanics at the American Sports Medicine Institute in Birmingham, Ala.

Biomechanics is the science of how animals, including people, move.

A baseball pitch begins with the windup, when the pitcher lifts his or her leg and balances atop the mound. Next comes the stride—the pitcher steps forward. Fleisig says the legs are important power generators for a pitch. That power is then transferred through the pelvis, up the trunk to the shoulders, and out through the arm.

The pitcher's arm adds even more power to the throw. As the body is striding forward, the arm itself is cocking back. Eventually, the arm reaches a point where it is fully cocked and a large amount of torque (a force that causes rotation) is placed on the elbow. "It looks kind of sick," Fleisig admits.

As the forearm, hand, and ball rocket forward, the elbow straightens while the upper arm rotates at the shoulder in a motion similar to the one made during arm wrestling. Fleisig says the fastest pitchers reach a peak arm speed of about 7,500 degrees per second, or fast enough to rotate the arm completely (360 degrees) 21 times in one second!

Weak Link

The force that is necessary to move an arm that fast pulls ligaments (the fibrous tissues that connect bones to each other) and tendons (the fibrous tissues that connect muscles to bones) in the arm until they almost tear. For example, one short ligament in the elbow, the ulnar collateral ligament (UCL), connects the humerus, the bone in the upper arm, to the ulna, one of the two bones in the forearm. Fleisig has found that the best pitchers put about as much force on their UCL as it can take.

"If a pitcher were to do everything he could to get superstrong, muscles will get much stronger,"

Fleisig says, “but ligaments and tendons will only get a little stronger.”

That limitation has led some commentators to suggest that pitchers who can throw 100 mph

will never be able to throw much faster. As Noam Scheiber recently wrote in Slate.com, “That 100-mph ceiling isn’t an illusion—it’s a basic property of human physiology.”

- 13 The phrase psych out means to
- A. intimidate.
 - B. impress.
 - C. analyze.
 - D. encourage.
- 14 What is the **main** idea of the section **Who's Fastest**?
- A. Experts and fans find it difficult to agree.
 - B. The speed of pitches cannot be measured.
 - C. Many pitchers are able to throw fast pitches.
 - D. The speed of pitches has barely increased since 1974.
- 15 Based on the information in the article, which statement is true?
- A. All baseball pitchers are in danger of injuring themselves.
 - B. Pitchers have learned more effective strategies in the past 30 years.
 - C. A successful pitch involves many parts of the body.
 - D. Rotating the upper arm stores the power needed for a fast pitch.
- 16 According to the article, what limits a pitcher's ability to throw faster?
- A. Pitchers cannot greatly increase the strength of ligaments and tendons.
 - B. The legs, pelvis, and shoulders cannot store a large amount of energy.
 - C. The elbow cannot endure more than a small amount of torque.
 - D. Pitchers do not understand how to increase their pitching strength.
- 17 Using information from the article, describe the process of throwing a fast pitch **and** the possible problems a pitcher may experience doing so.

Acknowledgments

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Grade 11 Reading Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12
Content Strand ¹	WV	WV	WV	II	WV	II	II	IA	IA	IA	IA	IA
GSE Code	10-2	10-2	10-3	10-7	10-3	10-7	10-7	10-8	10-8	10-8	10-8	10-8
Depth of Knowledge Code	1	2	1	2	1	2	2	2	2	2	2	3
Item Type ²	MC	MC	MC	MC	MC	MC	CR	MC	MC	MC	MC	CR
Answer Key	C	D	C	B	A	C		B	D	D	B	
Total Possible Points	1	1	1	1	1	1	4	1	1	1	1	4

Released Item Number	13	14	15	16	17
Content Strand ¹	WV	II	II	II	II
GSE Code	10-3	10-7	10-7	10-7	10-7
Depth of Knowledge Code	1	2	1	1	2
Item Type ²	MC	MC	MC	MC	CR
Answer Key	A	D	C	A	
Total Possible Points	1	1	1	1	4

¹Content Strand: WV = Word ID/Vocabulary, LI = Literary/Initial Understanding, LA = Literary/Analysis & Interpretation,
II = Informational/Initial Understanding, IA = Informational/Analysis & Interpretation

²Item Type: MC = Multiple Choice, CR = Constructed Response