Country Cousin/City Cousin
by Clarke Foley

Part One: Rosa Visits the City

1 In July I was really excited about visiting my cousin Ernesto and his family in New York City—the Big Apple! I pictured us riding a limousine along Park Avenue, sitting in box seats at a New York Yankees baseball game, shopping on Fifth Avenue, admiring art masterpieces in the Guggenheim Museum, and eating at fancy restaurants. When I arrived, things were not exactly the way I imagined.

2 First off, my cousins don’t live in Manhattan, which is the New York I’ve seen on television. They live in Brooklyn, which is a borough, kind of like a suburb, of the city. My cousin Ernesto did not seem interested in leaving Brooklyn.

3 “Ernesto!” His mom, my tía Maria, shook her head at him. “Be a good host and tour guide! Rosa didn’t come all the way from Pennsylvania to sit around at the pool with your friends.”

4 “Whaddya wanna do there?” he asked.

5 My eyes lit up. “I want to do everything!” I told him. “I want to go to the Guggenheim, and shop on Fifth Avenue, and eat at a fancy restaurant, maybe go to a Yankees game…” At that point I stopped because Ernesto was laughing.

6 Tía Maria smiled and said, “Well, Rosa, there is a lot to do in the city. It can be a bit…strenuous.”

7 I thought they were both crazy; I couldn’t wait to get started. The next morning, we set out right after breakfast.

8 By that evening I could understand why Ernesto might have had mixed feelings about a day filled with activities in Manhattan. Walking across the Brooklyn Bridge was the best part of the adventure because it was free and the structure was magnificent. Everything went downhill quickly after that. The streets were jammed with noisy traffic spewing exhaust fumes, people were shoving and bumping into us on the sidewalks, and there was trash everywhere. It was so different from my home in the Pennsylvania countryside.

9 We did make it to the Guggenheim Museum, which is way uptown. It took us nearly an hour to find the right subway, catch our train, and make the trip. The subway was loud and grimy. At the museum I spent two hours admiring the art, but then I was hungry, and the price of a meal in an uptown restaurant cost way more than I had imagined. We ended up enjoying a slice of that delicious New York pizza.

10 For the rest of the week we mainly played video games in the basement, where it was cool but musty, and hung out with Ernesto’s neighborhood friends at the city pool, which stunk of chlorine and burned my eyes. It was OK, but I was glad when my visit ended and I got back home. It is rough living in the city!
Part Two: Ernesto Visits the Country

11 In August I visited my cousin Rosa and her family way out in the country. I was happy because I thought the country would be restful and relaxing. When I arrived, though, Rosa had planned out my entire week.

12 “I want to show you a secret cave in the mountains. It’s only a two-mile hike up Mount Pine,” she said.

13 “Two miles? Up a mountain?” I wasn’t so sure. I like taking long walks in the city, but the ground is flat there and we have sidewalks.

14 “We can go swimming, too,” Rosa added.

15 “I love to swim,” I said. “Is there a pool around here?”

16 “A pool? Oh, no. We swim up at the old quarry. You’ll love it—there’s a rope swing and it’s so deep that some people say it doesn’t have a bottom at all!” Rosa said excitedly. I wasn’t sure about swimming in an old quarry. Especially one with no bottom.

17 Rosa was also super excited to take me horseback riding at their community stables. “My favorite horse to ride there is Lightning. I’ll make sure you get a turn with him,” she offered. But I wasn’t quite as excited as Rosa. I could tell she was being generous, but I had to shake my head seriously while I thought of an excuse.

18 “I’m allergic to most animals,” I said. It sounded ridiculous even as the words left my mouth, but it was actually true. My brother tried to keep a pet hamster in our room once and I ended up sneezing and itching until we took it back to the pet shop. I didn’t even want to think about what a horse might do to me.

19 I managed to talk Rosa out of the horseback riding, but I wasn’t as lucky with the rest of her plans. The cave Rosa was so excited about turned out to be damp and depressing. I tried to act like I was having a good time, but I didn’t win any Oscar awards for my acting performance. I swam in the quarry, but I felt creeped out the whole time.

20 When we got back to the house, I told Rosa to go riding without me. I think she would have done so, but her dad said, “Rosa, you can ride next week. Cousin Ernesto is your guest. You need to find things to do with him while he is here.” Rosa and I looked at each other. Hadn’t we done it all—except the horseback riding—already?

21 I’m pretty sure Rosa felt relieved when it was time for me to go back to Brooklyn. I know I did. I never realized what a rough life people live in the country.
1 Part One introduces the central idea that people are comfortable with the things they know and uncomfortable with things that are unfamiliar to them. Which paragraph from Part Two best develops this central idea?

A paragraph 11  
B paragraph 12  
C paragraph 13  
D paragraph 14

2 What does paragraph 1 reveal about Rosa?

A Rosa is an anxious person who does not like change.  
B Rosa is full of energy and enjoys trying many different things.  
C Rosa is upset about having to visit her cousin in the city.  
D Rosa plans to move away from the country and live in the city.

3 Read this sentence from the story.

Tia Maria smiled and said, “Well, Rosa, there is a lot to do in the city. It can be a bit . . . strenuous.”

The word “strenuous” most closely means

A exhausting  
B frightening  
C overwhelming  
D unfamiliar

Go On
4  The description of the quarry serves to illustrate that it is
   A  too dangerous for the cousins to swim in
   B  different from the pool Ernesto is used to
   C  not as deep as Rosa thinks it is
   D  surrounded by beautiful scenery

5  Which sentence from the story best supports the idea that Rosa was disappointed by her
   time in the city?
   A  “When I arrived, things were not exactly the way I imagined.”
   B  “At that point I stopped because Ernesto was laughing.”
   C  “It was so different from my home in the Pennsylvania countryside.”
   D  “We did make it to the Guggenheim Museum, which is way uptown.”

6  Why does the author use two narrators to tell the story?
   A  The cousins provide conflicting details so that readers are surprised by the ending.
   B  The cousins take turns telling what happened so that readers get both sides of the story.
   C  Each cousin tells the other’s story so that readers get an honest view of what happened to
      each of them.
   D  Each cousin narrates his or her own story so that readers can see how their points of view
      are different.
What is the theme of this story?
A  There's no place like home.
B  The city and the country are both unpleasant.
C  Family is the most important thing.
D  People always want what they can't have.

Which is the best summary of this passage?
A  Rosa visited Ernesto in New York. She was excited about spending time in the big city. She had less fun than she expected she would. Ernesto thought a visit to see Rosa in the country would be relaxing, but Rosa kept him busy with activities he didn't enjoy.
B  When Rosa visited Ernesto, his mother forced him to take Rosa sightseeing even though he did not want to go. When Ernesto visited Rosa, her father would not let her go horseback riding without Ernesto.
C  Ernesto is a city boy and Rosa is a country girl. Ernesto thought they would have a lot in common, but came to understand that their worlds were different. Rosa wanted Ernesto to join her as she hiked up a mountain, swam in a lake, and went horseback riding.
D  Rosa came to stay with Ernesto in July. She was surprised to learn he lived in a part of New York called Brooklyn and not in Manhattan. She was also disappointed because all he wanted to do was hang out in his neighborhood.

Go On
Read the passage. Then answer the questions that follow.

Hog Wild Over Video Games

by Moesha Harper

1. Do you like playing video games? If so, then you have something in common with a certain four-legged barnyard animal. Pigs are some of the smartest animals on earth. They are smarter than dogs and as intelligent as a three-year-old human child. They are so smart, in fact, they can even learn how to play simple video games.

2. Dr. Stanley Curtis, an animal sciences researcher at Penn State University, ran an experiment in which he trained pigs to play video games by controlling a joystick with their snouts and teeth. First, over a period of several weeks, Curtis taught the pigs to use the joystick and then to mentally connect the movement of the joystick to the motion of the cursor on screen. Once they understood how to move the cursor, teaching them to play games was easy. Curtis said the pigs got the point within minutes, learning at a rate as fast as chimpanzees.

3. One of the games the pigs played was a matching game. The pigs' job was to move a single shape across the monitor so that it touched the matching shape on the other side of the screen. They also learned to play an identification game. The pigs were first shown one shape. Then they were shown that same shape along with a new shape. In just a handful of tries, they were able to use the cursor to tell apart the new shape from the shape they had already seen.

4. Curtis and his research team used candy to reward the pigs for playing the games correctly. When the pigs were successful, a bell rang to alert the pig that a treat was on its way. The treat would then fall through a tube for the pig to gobble up.

5. Not only did the pigs take to the games quickly, they actually seemed to enjoy them. Or at the very least, they looked forward to their sugary reward for playing. When the experiment was underway, Curtis said that the pigs actually begged to play the games, pushing to be first out of their pens so they could hurry up the ramp and start playing.

6. But why teach pigs how to play video games in the first place? Curtis believes that by finding out more about how pigs' minds work, people will be able to take better care of them. Eventually, Curtis hopes to help pigs learn a simple language by teaching them to recognize symbols that stand for objects. That way, humans and pigs could communicate with each other directly.

7. As of now, researchers have shown pigs how to turn on the heat if their barn gets too cold and to turn it back off if they get too hot. Perhaps someday, people will be able to ask pigs about what kinds of living quarters make them most content—or even about what kinds of video games they like playing best.
9 What can the reader infer from the information in paragraph 2?
A The pigs only wanted to play the games to earn candy.
B Animal researchers worked with the pigs for several years.
C The shapes used in the matching game were all the same shape.
D Chimpanzees have also been taught how to play video games.

10 Read this sentence from the passage.

They also learned to play an identification game.

What does the Latin root "ident" most likely mean?
A together
B same
C trust
D speed

11 How does the information in paragraph 4 help to develop the passage?
A It identifies the types of foods the pigs enjoyed as treats.
B It demonstrates how smart pigs are compared to other animals.
C It describes the laboratory in which the scientists worked.
D It explains how the scientists rewarded the pigs for playing the game.

Go On
The author claims that the pigs enjoyed playing the video games. Which sentence best supports this claim?

A “First, over a period of several weeks, Curtis taught the pigs to use the joystick and then to mentally connect the movement of the joystick to the motion of the cursor on screen.”

B “In just a handful of tries, they were able to use the cursor to tell apart the new shape from the shape they had already seen.”

C “When the experiment was underway, Curtis said that the pigs actually begged to play the games, pushing to be first out of their pens so they could hurry up the ramp and start playing.”

D “Curtis believes that by finding out more about how pigs’ minds work, people will be able to take better care of them.”

How did learning to use a joystick help the pigs in the experiment?

A The pigs developed eye-snout coordination when they used the joystick.

B By using the joystick, the pigs found hidden treasures.

C The pigs increased their learning rate when they used the joystick.

D By using the joystick, the pigs were able to play the game.

Which statement is best supported by information in the passage?

A Pigs prefer joysticks to regular game pads.

B Pigs are smarter than dogs and chimpanzees.

C Pigs can recognize and match simple shapes.

D Pigs can play video games as well as human children.
15 A central idea of the text is that pigs can learn to play video games. Which best restates a second central idea?

A Someday this research may lead to direct communication between humans and pigs.
B Pigs can be taught a variety of games, which can increase their intelligence.
C Researchers have not yet found a practical use for this discovery.
D Pigs can learn how to recognize symbols that most children cannot recognize.

16 Which best describes the author's purpose for writing "Hog Wild Over Video Games"?

A to prove that pigs are smarter than dogs and small children
B to entertain readers with descriptions of pigs playing video games
C to inform readers about interesting research in animal behavior
D to argue that scientific research on animals should be stopped

Go On
Read the story. Then answer the questions that follow.

P. G. Wodehouse’s novels follow the adventures of Bertram “Bertie” Wooster, an English gentleman, and Jeeves, his butler. In this excerpt, Bertie receives several urgent telegrams from his aunt Dahlia Travers and seeks Jeeves’s help to know how to respond.

from Right Ho, Jeeves

Excerpts from Right Ho, Jeeves by P. G. Wodehouse, published by Herbert Jenkins Ltd. (1922).

1 The first of the telegram arrived shortly after noon, and Jeeves brought it in. . . . It was from my Aunt Dahlia, operating from Market Snodsbury, a small town of sorts a mile or two along the main road as you leave her country seat.

2 It ran as follows:

3 Come at once. Travers.

4 And when I say it puzzled me like the dickens, I am understating it; if anything. As mysterious a communication, I considered, as was ever flashed over the wires . . . I read it backwards. I read it forwards. As a matter of fact, I have a sort of recollection of even smelling it. But it still baffled me.

5 Consider the facts, I mean. It was only a few hours since this aunt and I had parted, after being in constant association for nearly two months. And yet here she was . . . pleading for another reunion. Bertram Wooster is not accustomed to this gluttonous appetite for his society. Ask anyone who knows me, and they will tell you that after two months of my company, what the normal person feels is that that will about do for the present. Indeed, I have known people who couldn’t stick it out for more than a few days.

6 Before sitting down to the well-cooked, therefore, I sent this reply:


8 To this I received an answer during the after-luncheon sleep:

9 What on earth is there to be perplexed about? . . .? Come at once. Travers.

10 . . . [A] couple of turns about the room, and I had my response ready:


12 I append the comeback:

13 I mean come at once . . . What did you think I meant? Come at once or expect an aunt’s curse first post tomorrow. Love. Travers.

14 I then dispatched the following message, wishing to get everything quite clear:

15 When you say “Come” do you mean “Come to Brinkley Court”? And when you say “At once” do you mean “At once”? Fogged. At a loss. All the best. Bertie.

1 telegram: a form of written long-distance communication, most popular before the invention of the telephone

2 gluttonous: hungry for more
I sent this one off on my way to the Drones, where I spent a restful afternoon throwing cards into a top-hat with some of the better element. Returning in the evening hush, I found the answer waiting for me:

Yes, yes, yes, yes, yes, yes, yes, yes. It doesn't matter whether you understand or not. You just come at once, as I tell you, and for heaven's sake stop this back-chat. Do you think I am made of money that I can afford to send you telegrams every ten minutes. Stop being a fathead and come immediately. Love. Travers.

It was at this point that I felt the need of getting a second opinion. I pressed the bell.

"Jeeves, . . . Read these," I said, handing him the papers in the case.

He scanned them.

"What do you make of it, Jeeves?"

"I think Mrs. Travers wishes you to come at once, sir."

"You gather that too, do you?"

"Yes, sir."

"I put the same construction on the thing. But why, Jeeves? Dash it all, she's just had nearly two months of me."

"Yes, sir."

"And many people consider the medium dose for an adult two days."

"Yes, sir. I appreciate the point you raise. Nevertheless, Mrs. Travers appears very insistent. I think it would be well to acquiesce\(^1\) in her wishes."

"Pop down, you mean?"

"Yes, sir."

"Well, I certainly can't go at once. I've an important conference on at the Drones tonight. Pongo Twistleton's birthday party, you remember."

"Yes, sir. . . ."

"Well, anyway, returning to the agenda\(^2\), I can't go down to Brinkley Court or anywhere else yet awhile. That's final. I'll tell you what, Jeeves. Give me form and pencil, and I'll wire her that I'll be with her some time next week or the week after. Dash it all, she ought to be able to hold out without me for a few days. It only requires will power."

"Yes, sir."

"Right ho, then. I'll wire 'Expect me tomorrow fortnight' or words to some such effect. That ought to meet the case. Then if you will toddle round the corner and send it off, that will be that."

"Very good, sir."

And so the long day wore on till it was time for me to dress for Pongo's party.

\(^1\) **acquiesce**: agree

\(^2\) **agenda**: plan, task at hand

\(^3\) **fortnight**: two weeks. In this case, Bertie Wooster plans to tell Aunt Dahlia that he will come to Brinkley Court two weeks from tomorrow.

©Curriculum Associates, LLC

Go On
It was well after four when I got home, and by that time I was about ready to turn in. I can just remember groping for the bed and crawling into it, and it seemed to me that the lemon had scarcely touched the pillow before I was aroused by the sound of the door opening.

I was barely ticking over, but I contrived to raise an eyelid.

"Is that my tea, Jeeves?"

"No, sir. It is Mrs. Travers."

And a moment later there was a sound like a mighty rushing wind, and the relative had crossed the threshold at fifty m.p.h. under her own steam.

17 What does Bertie mean by “conference” in paragraph 31?
A social gathering
B business meeting
C political meeting
D trade gathering

18 How might the story be different if Mrs. Travers were the narrator?
A Readers would know what both she and Bertie are thinking.
B Readers would see exactly what she wrote in her telegrams.
C Readers would see why Bertie is unwilling to go to her.
D Readers would know why she wants to see Bertie so badly.

19 Which theme is expressed in the story?
A Family relationships can be challenging.
B Work is more important than play.
C Friendship is worth more than money.
D Time is valuable and should not be wasted.
20 One central idea of the story is that some people who feel very important do very little work. Which event from the story develops this idea?

A Mrs. Travers wants to see Bertie right away though she’s just left him.
B Bertie and Mrs. Travers exchange several telegrams in one day.
C Bertie throws cards into a top-hat instead of going to Mrs. Travers.
D Bertie and Jeeves discuss the meaning of Mrs. Travers’s telegrams.

21 Which words in a telegram from the story suggest that Bertie really does know what his aunt wants but doesn’t want to do it?

A “Come at once.”
B “What on earth is there to be perplexed about . . . ?”
C “How do you mean come at once?”
D “And when you say ‘At once’ do you mean ‘At once’?”

22 Which of the following character’s actions contributes the most to the way the story progresses?

A Mrs. Travers has recently returned home after visiting Bertie only a few days before the story begins.
B Bertie repeatedly responds to Mrs. Travers’s telegrams acting as if he doesn’t understand what she wants.
C Bertie asks Jeeves whether he is correct in assuming that Mrs. Travers wants him to visit her immediately.
D Jeeves comes into the room and wakes Bertie a short time after Bertie returns from the Drones.

Go On
Read the speech. Then answer the questions that follow.

On June 6, 1984, President Ronald Reagan stood by a cliff at Pointe Du Hoc in Normandy, France—the same cliff that forty years earlier had been the site of one of the most important battles of World War II. His audience included many of the men who had fought in the battle. At the time the speech was delivered, the United States and the Soviet Union were engaged in a different kind of battle: the Cold War. The following selection contains highlights from President Reagan’s speech.

from “Remarks on the 40th Anniversary of D-Day”


1. We’re here to mark that day in history when the Allied armies joined in battle to reclaim this continent to liberty. For four long years, much of Europe had been under a terrible shadow. Free nations had fallen, Jews cried out in the camps, millions cried out for liberation. Europe was enslaved and the world prayed for its rescue. Here, in Normandy, the rescue began. Here, the Allies stood and fought against tyranny, in a giant undertaking unparalleled in human history.

2. We stand on a lonely, windswept point on the northern shore of France. The air is soft, but forty years ago at this moment, the air was dense with smoke and the cries of men, and the air was filled with the crack of rifle fire and the roar of cannon. At dawn, on the morning of the 6th of June, 1944, two hundred and twenty-five Rangers jumped off the British landing craft and ran to the bottom of these cliffs.

3. Their mission was one of the most difficult and daring of the invasion: to climb these sheer and desolate cliffs and take out the enemy guns. The Allies had been told that some of the mightiest of these guns were here, and they would be trained on the beaches to stop the Allied advance.

4. The Rangers looked up and saw the enemy soldiers at the edge of the cliffs, shooting down at them with machine guns and throwing grenades. And the American Rangers began to climb. They shot rope ladders over the face of these cliffs and began to pull themselves up. When one Ranger fell, another would take his place. When one rope was cut, a Ranger would grab another and begin his climb again. They climbed, shot back, and held their footing. Soon, one by one, the Rangers pulled themselves over the top, and in seizing the firm land at the top of these cliffs, they began to seize back the continent of Europe. Two hundred and twenty-five came here. After two days of fighting, only ninety could still bear arms. . .

5. It’s fitting to remember here the great losses also suffered by the Russian people during World War II. Twenty million perished, a terrible price that testifies to all the world the necessity of ending war. I tell you from my heart that we in the United States do not want war. We want to wipe from the face of the earth the terrible weapons that man now has in his hands. And I tell you, we are ready to seize that beachhead. We look for some sign from the Soviet Union that they are willing to move forward, that they share our desire and love for peace, and that they will give up the ways of conquest. There must be a changing there that will allow us to turn our hope into action.

6. We will pray forever that someday that changing will come. But for now, particularly today, it is good and fitting to renew our commitment to each other, to our freedom, and to the alliance that protects it.
We're bound today by what bound us 40 years ago, the same loyalties, traditions, and beliefs.
We're bound by reality. The strength of America's allies is vital to the United States, and the American
security guarantee is essential to the continued freedom of Europe's democracies. We were with you then;
we're with you now. Your hopes are our hopes, and your destiny is our destiny.

Here, in this place where the West held together, let us make a vow to our dead. Let us show them by
our actions that we understand what they died for . . . . Strengthened by their courage and heartened by their
valor and borne by their memory, let us continue to stand for the ideals for which they lived and died.

One central idea of paragraphs 1–4 of the speech is that the invasion of Normandy was one of
the most dangerous missions of the war. Which of the following most clearly restates another
central idea of these paragraphs?

23 A The invasion of Normandy began at dawn and only ended when the war was over.
B The American Rangers used expert skills to climb the cliffs at Normandy.
C The war had been raging for four years when the Allied armies joined the battle.
D The invasion of Normandy was a turning point that helped the Allies reclaim Europe.

Read this sentence from paragraph 5 of the speech.
And I tell you, we are ready to seize that beachhead.

President Reagan uses language such as "seize that beachhead" to emphasize

24 A America's willingness to fight for peace
B America's recognition of the necessity of war
C America's resistance to the reality of war
D America's prediction of a return to Normandy

Despite strong opposition, the American Rangers were willing to climb the cliff at
Normandy because

25 A they could hear the crack of rifle fire
B they were fighting for freedom in Europe
C they were fighting for an alliance with Russia
D they could see the terrible shadow above them

Go On
26. How does President Reagan distinguish his position as leader of the United States from positions that may be held by the leaders of the Soviet Union?

A. through a contrast between American people and Russian people, making clear that the people of the Soviet Union have not suffered as much as the American people

B. by the use of proper nouns such as “Normandy,” “France,” and “Europe”

C. by the use of the pronouns “I,” “we,” and “us” to refer to the United States, and the pronoun “they” to refer to the Soviet Union

D. through a description of the problem of tyranny and various solutions

27. Which statement is most strongly supported by evidence in the speech?

A. Many nations in Europe had fallen quickly to enemy soldiers.

B. American Rangers suffered great losses during the invasion of Normandy.

C. Alliance with the United States is essential for continued freedom in Europe.

D. Remembering events from the past helps guarantee that they will not be repeated.

28. Which statement best expresses the most important ideas in President Reagan’s speech?

A. People are always willing to fight for liberty, and people in Europe were no exception during World War II.

B. It is time to recognize that the Russian people suffered great losses in World War II and to appeal to them to commit to peace.

C. It is time to honor those who fought for freedom at Normandy and to acknowledge that ongoing freedom requires commitment.

D. Countries always suffer losses in wartime, and the losses to both America and Britain at Normandy were considerable.
3D Printing? Make Mine a Mollusc

by Russell Garwood, The Conversation

1 When you think 3D you probably imagine the cinema and popcorn. . . . What you probably don't think—unless you're a particular breed of palaeontologist—is molluscs. And certainly not printing them out in 3D.

2 But this practice, strange as it seems, is becoming increasingly common, with some startling applications.

3 A recent study by University of Texas researcher Jakob Vinther and colleagues is a wonderful example of the high-tech tools many modern palaeontologists use to understand fossils.

4 This study, on a primitive group of molluscs, employs a number of different techniques—traditional observation, high resolution CT scanning, computer reconstruction and DNA-based dating methods—to better understand the evolutionary relationships and biology of this fossil group. And, yes, some 3D printing.

The animals

5 Vinther and colleagues describe a new species in an extinct group called the multiplacophorans. These are molluscs (a larger group that includes mussels, squid and snails) which had a shell on their back, split into 17 plates.

6 These plates sat on the soft parts of the animal—a thick, leathery mantle, which had many smaller hard plates or spines embedded around the edge. The fossil used by Vinther and team is a 390 million year-old specimen from Ohio.

7 The researchers used the anatomy of the creature, combined with DNA-based dating, to suggest the fossil—and the group to which it belongs—is most closely related to a living group called the chitons (or polyplacophorans) but is not a true member of that group.

8 From this they surmise some of the similarities between the groups must have evolved separately—they are an example of convergent evolution, when similar selective pressures result in animals independently evolving similar traits.

9 One of the tools the authors used to understand these creatures—and reach these results—is X-ray micro-tomography (µCT)—a high resolution form of CT scanning.

The technique

10 µCT is a powerful and increasingly mainstream tool employed by palaeontologists to study 3D fossils. While the majority of fossils aren't preserved in 3D, those that are can often prove difficult to study—bits of the animal can remain buried in the rock.

11 µCT is a non-destructive, X-ray based technique that helps overcome such limitations. By taking a large number of X-rays (or projections) of a specimen as it rotates, µCT can create a series of slices, or a 3D volume, which maps the interactions between different materials and X-rays.

12 This allows a digital 3D model to be created.

1 µCT: the Greek symbol µ, pronounced “mu,” is often used as an abbreviation for “micro” in scientific writing.
The mollusc fossil studied by Vinther and colleagues wasn't perfectly formed. When the creature died and rotted its plates separated, leaving a disjointed fossil. After creating a 3D digital model (including portions of the plates which were buried in rock) they used software to reassemble the disarticulated fossil.

And that’s not all...  

**The reconstruction**

Vinther and colleagues made further moves to understand the long-dead creature by creating a physical reconstruction. First they used a 3D printer to create a physical representation of the digital model.

This piece of kit is a machine that takes the digital files that record the fossil’s 3D anatomy and uses them to build a solid model of the organism.

This technique comes in many flavours, but the type palaeontologists use usually involves plastics or resins, either liquid or powder in form. The material is then fused to create a solid object in the correct shape, most commonly using lasers.

The end product is a physical 3D model—in this case a reassembled multiplacophoran, twelve-times larger than the original. The final stage of this process was to create a realistic recreation of the animal in life, which was done by hand, with clay, plastic and lots of paint.

**The future**

In the last decade palaeontologists have been applying X-ray techniques, and the other methods mentioned above, to a wide range of creatures, from the tiny earliest preserved living animals to more recent, and far larger, dinosaurs.

Clearly, using such techniques can help us better understand fossils. Through resolving their anatomy in full, helping us recover body parts from the rock and sometimes even allowing us to see their internal organs, the methods now being mastered are giving us a clearer picture of extinct animals' biology.

As the study by Vinther and colleagues admirably shows, we can also gain a clearer picture of those creatures’ evolutionary relationships, and we can see long-dead organisms in almost as much detail as if they were alive today.

Now, surely that beats a trip to the cinema...
Read the following sentence from the passage.

Through resolving their anatomy in full, helping us recover body parts from the rock and sometimes even allowing us to see their internal organs, the methods now being mastered are giving us a clearer picture of extinct animals' biology.

The word "resolving" in this sentence most closely means
A drawing on  
B concluding  
C promising  
D making clear

Which sentence from the text reveals that the advanced technologies described in the passage were not the only methods the scientists used to study the animals?
A "A recent study by University of Texas researcher Jakob Vinther and colleagues is a wonderful example of the high-tech tools many modern palaeontologists use to understand fossils."
B "After creating a 3D digital model (including portions of the plates which were buried in rock) they used software to reassemble the disarticulated fossil."
C "The final stage of this process was to create a realistic recreation of the animal in life, which was done by hand, with clay, plastic and lots of paint."
D "In the last decade palaeontologists have been applying X-ray techniques, and the other methods mentioned above, to a wide range of creatures, from the tiny earliest preserved living animals to more recent, and far larger, dinosaurs."

How has the technology described in the passage influenced the work of palaeontologists?
A The techniques have allowed them to make movies about the fossils they discover.
B The techniques have allowed them to turn every fossil that has ever been discovered into a 3D model.
C The techniques have allowed them to see the bodies of extinct animals more clearly than ever before.
D The techniques have allowed them to scan fossils without having to dig them up.

Go On
32  The passage states that the extinct creatures being studied are similar to a group of living creatures, but they are not a part of that group. Which of the author’s claims is supported by this statement?

A  The extinct creatures and the living creatures are molluscs, a group that includes mussels, squid, and snails.

B  The scientists studying the extinct creatures used a fossil from Ohio that is over 390 million years old.

C  The fossils of the extinct creatures are difficult to study because they are buried in rock and cannot be removed without tearing the fossil apart.

D  The extinct creatures developed some of the same features as the living creatures because both groups were exposed to the same kinds of conditions.

33  Based on information in the passage, with which of the following statements would the author most likely agree?

A  Though people think of 3D as the technology that makes movies come to life, the concept also has important scientific applications.

B  Studying living creatures is the best way to learn about the physical features of creatures that have been extinct for millions of years.

C  X-ray micro-tomography will soon be replaced by more advanced forms of technology.

D  Looking at fossils is enough to learn everything there is to know about extinct creatures.

34  Which statement best summarizes the information the author gives about the extinct animals being studied?

A  The animals had a thick, leathery mantle surrounding their soft parts. The leathery mantle had many smaller hard plates or spines embedded around the edge.

B  The animals were molluscs from an extinct group called multiplacophorans, related to a living group called chitons. They had multi-part shells on their backs surrounding the soft parts of their bodies.

C  The animals were called multiplacophorans or polyplacophorans. Today, the group of animals called multiplacophorans is part of a larger group of animals including mussels, squids, and snails.

D  The animals are related to living molluscs called polyplacophorans. The extinct animals are not a true member of the group.
Read the poem. Then answer the questions that follow.

On the Grasshopper and Cricket

by John Keats


The poetry of earth is never dead:
When all the birds are faint with the hot sun,
And hide in cooling trees, a voice will run
From hedge to hedge about the new-mown mead;
That is the Grasshopper's—he takes the lead
In summer luxury,—he has never done
With his delights; for when tired out with fun
He rests at ease beneath some pleasant weed.

The poetry of earth is ceasing never:
On a lone winter evening, when the frost
Has wrought a silence, from the stove there shrills
The Cricket's song, in warmth increasing ever,
And seems to one in drowsiness half lost,
The Grasshopper's among some grassy hills.

35 Read this line from "On the Grasshopper and Cricket."

When all the birds are faint with the hot sun,

The speaker means that the birds are

A ill
B weak
C afraid
D fallen

Go On
36 Which excerpt from the poem states the theme of “On the Grasshopper and Cricket”?

A “... a voice will run
From hedge to hedge about the new-mown mead;”

B “He rests at ease beneath some pleasant weed.”

C “The poetry of earth is ceasing never:”

D “And seems to one in drowsiness half lost,
The Grasshopper’s among some grassy hills.”

37 What is the impact of the repetition of the word “hedge” in line 4 of the poem?

A It illustrates how the Grasshopper moves from one place to another while singing his song.

B It tells the reader how the Grasshopper always hides from the hot sun, staying in trees with the birds.

C It shows how the Grasshopper moves as he is resting beneath a weed, tired out from singing.

D It helps the reader imagine all the different places the Grasshopper might be hiding as he sings.

38 In lines 9 through 14, how does the speaker link the Cricket to the Grasshopper?

A He says that the Cricket’s sound makes him think of the Grasshopper’s sound.

B He refers to frost when talking about both the Cricket and the Grasshopper.

C He says that both the Cricket and the Grasshopper rest beneath weeds in the summer.

D He says that the Cricket is having fun in winter, just as the Grasshopper did in summer.
39. Which line signals a major change in the focus of the poem?
   A. “From hedge to hedge about the new-mown mead;”
   B. “That is the Grasshopper’s—he takes the lead”
   C. “On a lone winter evening, when the frost”
   D. “The Cricket’s song, in warmth increasing ever,“

40. According to the poem, the Grasshopper is most like
   A. a hard worker
   B. a carefree entertainer
   C. a talented poet
   D. a lazy bird

41. Who does the poem describe as “one in drowsiness half lost“?
   A. the Grasshopper
   B. the Cricket
   C. the frost
   D. the speaker

42. Which of the following statements best summarizes “On the Grasshopper and Cricket“?
   A. In summer, the Grasshopper makes life pleasant, and in winter, the Cricket takes his place.
   B. In summer, the Grasshopper never stops enjoying the beautiful warm weather.
   C. Poetry never ends because somebody is always writing about the Cricket or the Grasshopper.
   D. In winter and summer, even the tiniest creatures want to be either warm or cool.
Read the play. Then answer the questions that follow.

from the play You Never Can Tell
by George Bernard Shaw
from Plays: Pleasant and Unpleasant, published by Herbert S. Stone, 1898.

CAST OF CHARACTERS

DENTIST.............................. A young man with a dental practice
YOUNG LADY ......................... A dental patient

1 [Scene: In a dentist’s operating room on a fine August morning in 1896. Not the usual tiny London den, but the best sitting room of a furnished lodging in a terrace on the sea front at a fashionable watering place... A] very pretty Young Lady in miniature, her tiny figure dressed with the daintiest gaiety, is of a later generation, being hardly eighteen yet. This darling little creature clearly does not belong to the room, or even to the country; for her complexion, though very delicate, has been burnt biscuit color by some warmer sun than England’s; and yet there is, for a very subtle observer, a link between them... The Dentist, contemplating her with the self-satisfaction of a successful operator, is a young man of thirty or thereabouts. . . .]

2 YOUNG LADY: [handing him the glass] Thank you. [In spite of the biscuit complexion she has not the slightest foreign accent.]

3 DENTIST: [putting it down on the ledge of his cabinet of instruments] That was my first tooth.

4 YOUNG LADY: [aghast] Your first! Do you mean to say that you began practicing on me?

5 DENTIST: Every dentist has to begin on somebody.

6 YOUNG LADY: Yes: Somebody in a hospital, not people who pay.

7 DENTIST: [laughing] Oh, the hospital doesn’t count. I only meant my first tooth in private practice. Why didn’t you let me give you gas?

8 YOUNG LADY: Because you said it would be five shillings extra.

9 DENTIST: [shocked] Oh, don’t say that. It makes me feel as if I had hurt you for the sake of five shillings.

10 YOUNG LADY: [with cool insolence] Well, so you have! [She gets up.] Why shouldn’t you? It’s your business to hurt people. [It amuses him to be treated in this fashion: he chuckles secretly as he proceeds to clean and replace his instruments. She shakes her dress into order; looks inquisitively about her; and goes to the window.] You have a good view of the sea from these rooms! Are they expensive?

11 DENTIST: Yes.

12 YOUNG LADY: You don’t own the whole house, do you?

13 DENTIST: No.

1 glass: a hand-held mirror
2 gas: a numbing agent that, when inhaled, relieves pain
3 shillings: English coins
YOUNG LADY: [taking the chair which stands at the writing-table and looking critically at it as she spins it round on one leg] Your furniture isn’t quite the latest thing, is it?

DENTIST: It’s my landlord’s.

YOUNG LADY: Does he own that nice comfortable Bath chair? [pointing to the operating chair]

DENTIST: No. I have that on the hire-purchase system.

YOUNG LADY: [disparagingly] I thought so. [looking about her again in search of further conclusions] I suppose you haven’t been here long?

DENTIST: Six weeks. Is there anything else you would like to know?

YOUNG LADY: [the hint quite lost on her] Any family?

DENTIST: I am not married.

YOUNG LADY: Of course not: Anybody can see that. I meant sisters and mother and that sort of thing.

DENTIST: Not on the premises.

YOUNG LADY: Hm! If you’ve been here six weeks, and mine was your first tooth, the practice can’t be very large, can it?

DENTIST: Not as yet. [He shuts the cabinet, having tidied up everything.]

YOUNG LADY: Well, good luck! [She takes out her purse.] Five shillings, you said it would be?

DENTIST: Five shillings.

YOUNG LADY: [producing a crown piece] Do you charge five shillings for everything?

DENTIST: Yes.

YOUNG LADY: Why?

DENTIST: It’s my system. I’m what’s called a five-shilling dentist.

YOUNG LADY: How nice! Well, here! [holding up the crown piece] A nice new five-shilling piece! Your first fee! Make a hole in it with the thing you drill people’s teeth with and wear it on your watch-chain.

DENTIST: Thank you.

---

43 Read these words from line 9 from the play.

DENTIST: [shocked] Oh, don’t say that.

The word “shocked” in this stage direction most closely means

A amazed

B terrified

C dismayed

D outraged

Go On
44 What do lines 12–24 of the play reveal about the young woman?

A As she learns more about the dentist's practice and surroundings, she begins to think less of him.

B As she learns more about the dentist's practice and background, she comes to admire his struggle.

C She begins to wonder why the dentist did not choose a hospital setting for his private practice.

D She begins to doubt whether the dentist followed the proper procedures when removing her tooth.

45 Read the following line from the play.

YOUNG LADY: [taking the chair which stands at the writing-table and looking critically at it as she spins it round on one leg] Your furniture isn't quite the latest thing, is it?

What central idea of the excerpt does this line support?

A Dentists at the turn of the 20th century may have never removed a tooth when they opened their own practices.

B The dentist in the play believes that the young lady is asking him for too much information.

C The dentist and the young lady come from different social classes.

D The young lady believes that the dentist is lying about how long he has been practicing.

46 Which pair of lines from different parts of the play reveal that the characters are slightly annoyed with each other?

A YOUNG LADY: “Thank you.”
   DENTIST: “It's my system. I'm what's called a five-shilling dentist.”

B YOUNG LADY: “You have a good view of the sea from these rooms!”
   DENTIST: “Five shillings.”

C DENTIST: “It's my landlord's.”
   YOUNG LADY: “Five shillings, you said it would be?”

D DENTIST: “Is there anything else you would like to know?”
   YOUNG LADY: “Of course not: Anybody can see that.”
47 How does the description of the setting at the beginning of the play contribute to the play's meaning?

A It explains to the reader why the young lady needed to visit a dentist.
B It helps the reader more fully picture the scene taking place.
C It gives the reader information about the politics of the time and place.
D It tells the reader about the major events in the author's life.

48 The author **most clearly** reveals the two characters' differing points of view through

A descriptions in the Cast of Characters
B long lines of dialogue
C the detailed opening description
D the stage directions

49 Which statement **best** summarizes what happens in the play?

A A young but experienced dentist removes the tooth of a mysterious young woman. The young woman seems to be from another country.
B A young dentist, just starting out in private practice, treats a young woman. The two have a conversation after the dentist removes her tooth.
C A dentist opens an office by the sea. His office furniture belongs to his landlord, but he owns the chair his patients sit in during treatment.
D A dentist removes the tooth of a young woman. The young woman refuses to let him give her gas for the pain because the gas would cost extra.