

Session 1: Reading Passages

Questions #1–46

Read the passage. Then answer the questions that follow.

Work Smarter, Not Harder

by Trevor Jackson

- 1 Kari wiped sweat from her forehead and stuck the shovel back into the haystack-sized pile of peppermint snow. It wasn't really snow, since it was way too warm here for water to freeze into flakes, the way it did so beautifully in the world back home, the world she longed to return to. And while this massive snow-like mound definitely looked like peppermint, red stripes and all, the one time she curiously licked some that fell on her hand, she learned that it definitely didn't taste like it. More like blended asparagus. Whatever it was, the mountain of powdery mush was as heavy as wet snow, and Kari had to move it all off the wide green field and onto the surrounding dirt track. All under the withering gaze of two suns.
- 2 It was her third day attempting to move the mush. Each day she worked as fast as she could, but she could never quite finish the job before falling down exhausted. She figured that was why each morning the pile was reset, waiting for her to get to work, as if she'd done nothing the day before.
- 3 Kari just wanted to give up. But more than anything, she just wanted to go home. She wasn't sure exactly how long she'd been in this strange world, in Parival, if that's even where she was. Two weeks? A month? She wouldn't have even had any idea where she was if it hadn't been for the way older people back home liked to talk about Parival, as if it were real. Enough details shared by her uncle Otto matched what she had experienced since she fell down the well in the

Go On

freezing, snow-filled woods behind her grandparents' house: the feeling of rising and falling at the same time when she first slipped on the well's rock wall, the way she cast two shadows because of the twin suns in the sky, the birdsongs that sounded more like a baby's midnight cries for food. Kari had thought these things were just stories, though, even if Otto always protested that they were true. Now she knew.

4 Kari hadn't been in Parival more than an hour before she'd spotted the big board. It was strung between two branches of an enormous tree, its limbs heavy with a scary-looking red fruit, like giant cherries. The board read, CHORES FOR KARI. She looked around as if there might be someone to explain. The suns beat down on her neck as she stepped closer to examine the chart. Each row gave a title and a brief description followed by a box for a check mark to show Kari had finished.

5 So far each task had proved to be more complicated than it seemed at first. She had to make choices about how she was going to complete each task. A job of collecting and sorting eggs as big as an ostrich's forced her to use some math skills she didn't know would ever come in handy. Another job involved her singing a row of musical notes, but she had to sing them from right to left instead of left to right.

6 Exhausted, Kari stopped shoveling the mush and dropped the shovel on the ground. She stamped her foot and let out a loud groan. She thought again about the tasks she had already completed. Each job was a combination of physical activity and some creative thinking. She had been shoveling for days, but had she applied any original thought to the task?

7 That was it! Kari suddenly remembered a magic trick she had performed at her little brother's birthday party. It had been a sunny day just like this one—although of course there had been only one sun in that sky. Kari's family and friends had all gathered in the backyard around the small patio table, where plates, cups, forks, and spoons rested on top of a white tablecloth. Kari had grabbed the edges, counted to three, and yanked. Everything on top of the tablecloth stayed in one place, but the tablecloth was liberated. Kari's family applauded.

8 The grassy field had felt slippery under her feet while she had worked the last three days. Maybe it wasn't the peppermint snow that had to move, but the field underneath! Kari kicked the shovel aside and ran to the edge of the field. Sure enough, the edge of the field could be lifted. But the tablecloth had been much smaller and lighter than this grassy field. She would just have to try.

9 Kari gave the grass in her hands a shake and watched the pile of peppermint snow. The grass ripple she had shaken grew taller and taller as it moved toward the pile in the center. By the time the wave reached the center, it looked like a giant whale. The whale-shaped hump slid right underneath the pile, carrying it high up into the air. Kari saw her chance and pulled hard on the grass. The entire field came flying at her like it weighed no more than that tablecloth had last summer. She ducked as it flew over her head. Then she watched as the pile of snow came falling down to rest on the dirt that had been underneath the grass field. When it touched dirt, the pile vanished.

10 Kari dusted herself off and headed back to the big chores board. She would get home one way or another.



Why does the author use the phrase under the withering gaze of two suns in these sentences?

"Whatever it was, the mountain of powdery mush was as heavy as wet snow, and Kari had to move it all off the wide green field and onto the surrounding dirt track. All under the withering gaze of two suns." (paragraph 1)

- Ⓐ The two suns disapprove of Kari's efforts.
- Ⓑ Kari feels judged by unseen persons in Parival.
- Ⓒ Kari is angry at whoever brought her to Parival.
- Ⓓ The light from the suns is extremely hot and bright.

Go On



How does the flashback in paragraph 7 contribute to the development of the plot?

- Ⓐ It reveals a special talent that Kari has.
- Ⓑ It explains how Kari ended up in Parival in the first place.
- Ⓒ It shows how Kari reacts when she is under pressure.
- Ⓓ It helps Kari figure out how to resolve her problem.



The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Why does Kari work to carry out the tasks written on the board?

- Ⓐ She likes the challenge of creative problem-solving.
- Ⓑ She thinks completing them is her only way out of Parival.
- Ⓒ She is bored and doesn't have anything else to do.
- Ⓓ She is frightened of the red fruit hanging by the board.

Part B

Select one sentence from the passage that supports the answer in Part A.

- Ⓐ "It was strung between two branches of an enormous tree, its limbs heavy with a scary-looking red fruit, like giant cherries."
- Ⓑ "A job of collecting and sorting eggs as big as an ostrich's forced her to use some math skills she didn't know would ever come in handy."
- Ⓒ "Each job was a combination of physical activity and some creative thinking."
- Ⓓ "Kari dusted herself off and headed back to the big chores board; she would get home one way or another."



Kari checks to see if the edge of the field can be lifted because she realizes that each previous task required a creative solution. Which sentence from the passage supports this statement?

- Ⓐ "She had to make choices about how she was going to complete each task."
- Ⓑ "So far each task had proved to be more complicated than it seemed at first."
- Ⓒ "She had been shoveling for days, but had she applied any original thought to the task?"
- Ⓓ "Kari gave the grass in her hands a shake and watched the pile of peppermint snow."



Which sentence illustrates how little information the narrator shares with the reader?

- Ⓐ "Each day she worked as fast as she could, but she could never quite finish the job before falling down exhausted."
- Ⓑ "She wasn't sure exactly how long she'd been in this strange world, in Parival, if that's even where she was."
- Ⓒ "Each row gave a title and a brief description followed by a box for a check mark to show Kari had finished."
- Ⓓ "Then she watched as the pile of snow came falling down to rest on the dirt that had been underneath the grass field."

Go On



Which words in the passage tell the most about the meaning of liberated?

“Kari had grabbed the edges, counted to three, and yanked. Everything on top of the tablecloth stayed in one place, but the tablecloth was liberated. Kari’s family applauded.” (paragraph 7)

- Ⓐ grabbed, edges
- Ⓑ three, tablecloth
- Ⓒ was, applauded
- Ⓓ yanked, stayed



One theme of “Work Smarter, Not Harder” is that creative thinking can solve problems. The following folktale, “The Crow and the Pitcher,” also shares this theme. Read the folktale.

The Crow and the Pitcher

A crow, weak from thirst, was delighted when he spotted a pitcher up ahead. He flew to it as fast as he could, hoping it would be filled with water. To his great disappointment, the pitcher was more than half empty, and through its narrow mouth, he couldn’t reach a drop of the water it contained. He thought and thought about what to do and was about to give up. At last, he had an idea. He gathered a pile of stones and dropped them one at a time into the pitcher until the water rose within his reach.

Which describes how “Work Smarter, Not Harder” and “The Crow and the Pitcher” present the theme?

- Ⓐ The crow fills the pitcher with stones, and Kari pulls the field out from under the snow.
- Ⓑ The crow is challenged by the half-full pitcher, and Kari faces the board listing chores.
- Ⓒ Both the crow and Kari work slowly and steadily at their tasks.
- Ⓓ Both the crow and Kari must complete tasks in order to gain a reward.

Go On

Read the passage. Then answer the questions that follow.

His Wings and Tail

by Olive Thorne Miller

from *The Children's Book of Birds*, Houghton Mifflin Company, New York, 1901

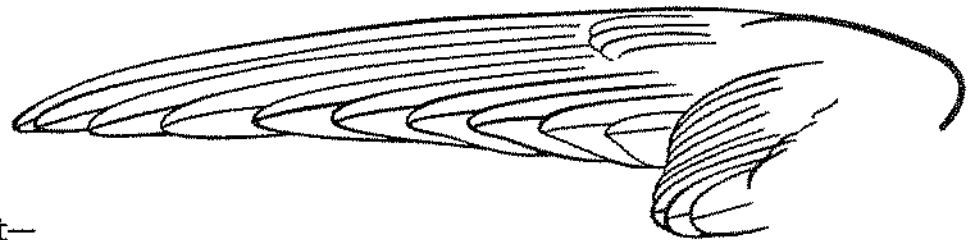
1 A bird's wing does not look much like our arm and hand, yet the bones show that they are the same. The bird has a shoulder, elbow, and wrist, as we have. He even has fingers, though they are so covered up by feathers that one would never know it. He has not so many fingers as we have, and they are not movable like ours.

2 A bird's wing is a wonderful flying-machine, which men have been trying to imitate these many years. It is made of long stiff feathers, which fold down smoothly over one another at his side when he is resting, but can spread in an instant into a broad fan, to beat the air and carry him away.

3 One would not think that feathers could have so much power; but when the wing is spread, the barbs of the feathers hook together with tiny hooks, so small a microscope is needed to see them; and that, together with the edges lapping over each other, makes them almost like one solid surface.

4 Wings are not alike in shape. The wing of a swallow is long and narrow, while that of a hen or grouse is short and round. We can tell by the shape of a wing how a bird flies.

5 A long, narrow, pointed wing shows that the bird has an easy, skimming flight—either he flies great distances, or spends hours at a time on wing.



Wing of a Swift

6 The short round wing shows that a bird has a strong flight for short distances. These wings are found mostly on rather heavy birds, like grouse.



Wing of a Sparrow

7 The longest wings are seen on water birds, such as the petrel and the frigate-bird. The shortest, also, are found among water birds, those who swim more than they fly, as the auks.

8 All the feathers of the wing are named, and it will be well to remember that the long stiff quills are called remiges or "rowers." These are firmly rooted in the flesh, and are the hardest to pull out. They are the most important to the safety of the bird.

9 Birds have also another use for their wings. They are a strong weapon to defend themselves, or to fight others. A large bird can give a severe blow with his wing, and when pigeons fight, it is said they hold up one wing to protect themselves while they strike at the enemy with the other.

10 Sometimes wings serve as musical instruments. Woodcocks make whistling sounds with their wings as they fly, and mourning doves softly murmuring ones. Ruffed grouse produce with theirs a rolling drum-like effect, and others rattle theirs like castanets.

11 If wings are not used, they slowly get to be smaller and weaker, each generation having them more and more useless, till after a while they are of no use whatever, and the birds cannot fly at all. This has happened, it is supposed, to the ostrich family and to some birds living in the sea.

12 The tail of a bird is formed of an equal number of feathers in pairs, most often twelve. When spread they are the shape of a fan, and when closed they lie over each other with the middle pair on top.

Go On

- 13 The tail feathers are not always of the same length, and that makes a difference in the shape of the end. Sometimes they are even, when the tail is said to be "square." Sometimes the middle feathers are a little longer than the outside ones, and then it is "rounded" or "pointed." If the outside feathers are longest, the tail is "forked."
- 14 The feathers of the tail are called rectrices, or "rudders," because they are supposed to be used to steer, or direct the bird's course in flying. But the tail is used also as a brake to check the speed in alighting.
- 15 The tail is used more than any other organ to express the emotions. Some birds, like the catbird and thrasher, keep it moving nearly all the time, jerking it this way and that, and tossing it upward.
- 16 In woodpeckers and swifts the tail feathers are not soft at the end like others, but the stems or shafts project beyond the feathery part, and are stiff like the tail of a sapsucker or sharp like that of the chimney swift. These birds use the tail as a prop to hold them against the tree trunk or chimney wall, and to help them in climbing.
- 17 Tail feathers are not so strongly rooted as wing feathers, and are easily pulled out. Sometimes, when a man or boy tries to catch a bird by the tail, the bird will escape, leaving the tail in his hand.



Why does the author include the following sentence in the passage?

“A bird’s wing is a wonderful flying-machine, which men have been trying to imitate these many years.” (paragraph 2)

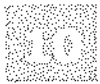
- Ⓐ to describe how birds are different from humans
- Ⓑ to explain how strong birds’ wing feathers can be
- Ⓒ to introduce how different birds fly in different ways
- Ⓓ to illustrate how exciting the study of birds’ wings can be



Based on the illustrations and the passage, which sentence tells how swifts and sparrows are different?

- Ⓐ Sparrows generally fly shorter distances than swifts do.
- Ⓑ Swifts are water birds, whereas sparrows are not.
- Ⓒ Sparrows have smooth, easy flights, whereas swifts do not.
- Ⓓ Swifts generally flap their wings more than sparrows do.

Go On



The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Why are a bird's tail feathers less strongly rooted than its wing feathers?

- Ⓐ A bird uses its wing feathers to fly, while it uses its tail feathers to make sounds.
- Ⓑ Even birds that cannot fly need their wing feathers to help them swim.
- Ⓒ Losing its tail feathers is less dangerous to a bird than losing its wing feathers.
- Ⓓ A bird's wing feathers serve a greater variety of purposes than its tail feathers.

Part B

Underline one sentence that supports the answer in Part A.

- 8 All the feathers of the wing are named, and it will be well to remember that the long stiff quills are called remiges or "rowers." These are firmly rooted in the flesh, and are the hardest to pull out. They are the most important to the safety of the bird.



Which two details support the idea that a bird's wing can be used as a weapon of defense?

- Ⓐ "The bird has a shoulder, elbow, and wrist, as we have."
- Ⓑ "One would not think that feathers could have so much power; but when the wing is spread, the barbs of the feathers hook together with tiny hooks. . . ."
- Ⓒ "A large bird can give a severe blow with his wing, and when pigeons fight, it is said they hold up one wing to protect themselves while they strike at the enemy with the other."
- Ⓓ "Woodcocks make whistling sounds with their wings as they fly, and mourning doves softly murmuring ones."
- Ⓔ "Ruffed grouse produce with theirs a rolling drum-like effect, and others rattle theirs like castanets."

Go On

12

What does the word alighting mean as used in the passage?

"The feathers of the tail are called rectrices, or 'rudders,' because they are supposed to be used to steer, or direct the bird's course in flying. But the tail is used also as a brake to check the speed in alighting." (paragraph 14)

- Ⓐ landing
- Ⓑ flying
- Ⓒ steering
- Ⓓ jerking

13

What is the author's overall point of view in the passage?

- Ⓐ He is impressed by how birds make music.
- Ⓑ He enjoys watching birds in the wild.
- Ⓒ He admires how the parts of a bird work.
- Ⓓ He prefers birds with long wings to those with short wings.

Read the passages. Then answer the questions that follow.

Talking in Their Sleep

by Edith M. Thomas, from *Nature Study Made Easy*, 1909

“You think I am dead,”
The apple tree said,
“Because I have never a leaf to show—
Because I stoop,
5 And my branches droop,
And the dull gray mosses over me grow!
But I’m still alive in trunk and shoot;
The buds of next May
I fold away—
10 But I pity the withered grass at my root.”

“You think I am dead,”
The quick grass said,
“Because I have parted with stem and blade!
But under the ground
15 I am safe and sound
With the snow’s thick blanket over me laid.
I’m all alive, and ready to shoot,
Should the spring of the year
Come dancing here—
20 But I pity the flower without branch or root.”

“You think I am dead,”
A soft voice said,
“Because not a branch or root I own.
I never have died,
25 But close I hide
In a plummy seed that the wind has sown.
Patient I wait through the long winter hours;
You will see me again—
I shall laugh at you then,
30 Out of the eyes of a hundred flowers.”

Go On

Embers of Moonlight

by Ela Banerjee, Weekly Reader

1 The moon was sitting on my roof.

2 Yet it wasn't really that bizarre.¹ After all, it was the last night of the month, the Night of Rebirth. The night when the sky trickled down and the plants shriveled and the tiny creatures of Wood shuddered with one last heartbeat. The night when all things east of The Mountains died, waiting for a new birth at dawn.

3 A few falling stars had landed earlier on the top of my rickety house, which nestled precariously² on the highest, most eastern edge of The Mountains. They had only lasted for a handful of moments, giggling uncontrollably, and then crumbling in a sudden spark of gold.

4 But the moon had never landed upon my roof. I had sat there, high in The Mountains, on the border of a strange world, every month as long as I could remember. I would watch, mesmerized,³ as the place no one else ever entered began to rot away. I watched the animals retreat and the stars tumble down, but when the feeling of death became overwhelming, I slipped back into my bed, thinking of the world on the other side of The Mountains.

5 I had heard rumors of the moon herself landing, but they were mangled and debated. But here she sat with poignant⁴ patience, her ivory dress delicately rippling like shattered lake water over her willowy arms and legs, a collection of folded limbs that shone with a strange and pallid luminescence⁵. Her hair glinted like polished glass as two perfect sapphire spheres studied my face.

¹ **bizarre:** strange, odd, out of the ordinary

² **precariously:** in an unsteady or uncertain way

³ **mesmerized:** fascinated

⁴ **poignant:** touching or moving, with a strong effect

⁵ **pallid luminescence:** a pale, white glow

6 An expectant silence tinged with the distant flickering of literally dying stars followed.

7 “So, what was it like in the sky?” I began awkwardly.

8 “Like how you feel up here.” Her voice was odd. Musical and elegant, yet strangely hoarse and low. “Like why you come up here each month.”

9 Not sure how to respond, I looked out over the jagged ledge of The Mountains and into the realm where the moon came from and I did not.

10 I watched as the world died with simultaneous⁶ regularity. The trees yawned with their branches and collapsed heavily to the ground. Their cracked leaves fluttered to the grass, which itself curled from bright green to aged brown before my eyes.

11 Flowers savored one last brilliant hue, and then turned to ashened dust, while rich patches of soil withered into cracked gray.

12 As the moon continued, I closed my eyes, her voice melting with the diminishing call of a nightingale. “I know you and your kin hide in these peaks. Yet you are the only one who ventures out to witness these nights. It is a strange thing how this world passes on each month, how each thing so carefully sculpted is suddenly destroyed. I know you wonder why it happens.

13 “I have died many times. I fall with the sky each month, with the stars and the clouds and the air. Is it an ending? Or is it a beginning?”

14 Something touched my arm, a surface as cold as bitter metal. My eyes snapped open to see the moon’s chalk-white hand gently touching my own. I looked into her face and stifled a gasp. Her once-ivory skin was now crumpled in a bed of sagging wrinkles; her arm, I now noticed, was thin and interrupted by bruised veins. Yet her eyes were still pierced with sudden blue and now held my own.

⁶ **simultaneous:** happening at the same time, all at once

15 "But there is no difference, is there? I see this night as you do. It is destruction; it is hope—a revision, a new view. But it continues, on and on. You see this, I know. This is why I have alighted on your roof, on The Mountains tonight. You always go back before the night is over—before it really ends. Now you will finally see."

16 As she broke away from my arm, I suddenly realized that I was surrounded by a cloud of utter and endless darkness. All the stars had long since burnt out; all the creatures had been forgotten. The only light was the moon herself, her pale glow a single flicker in the dead night.

17 But she was dimming. . . . Slowly, she began to fade, her skin gaining transparency, her eyes only a twinkle of indigo. Soon, I could only see a shimmer of white.

18 I closed my eyes as the moon died, unwilling to watch her disappear.

19 After many moments, I dared to watch the world again. Blackness, lifeless and silent, enveloped me. No moon, no stars, no Wood.

20 I sighed, and was about to settle to the ground, when a glinting caught my eye. I looked down and saw a sprinkle of silvery, sparkling dust. I smiled.

21 That night, I closed my eyes to the embers of moonlight.



What is the meaning of the word trunk as it is used in this line of the poem?

“But I’m still alive in trunk and shoot;” (line 7)

- Ⓐ large container with a hinged lid
- Ⓑ long nose-like snout
- Ⓒ baggage compartment of a vehicle
- Ⓓ main part or stem



Read these lines from the final stanza of the poem.

“You will see me again—
I shall laugh at you then,
Out of the eyes of a hundred flowers.”

How do these lines contribute to the overall theme of the poem?

Write your answer on the lines below.

Go On

The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

In "Embers of Moonlight," how is the narrator's experience different from her kin's?

- Ⓐ She watches through most of the Night of Rebirth, whereas her kin do not.
- Ⓑ She does not stay until the end of the Night of Rebirth, whereas her kin do.
- Ⓒ She is the first person among her kin to have met the moon.
- Ⓓ She is the only person among her kin who understands why the world dies.

Part B

Underline one sentence that supports the answer in Part A.

- 4 But the moon had never landed upon my roof. I had sat there, high in The Mountains, on the border of a strange world, every month as long as I could remember. I would watch, mesmerized, as the place no one else ever entered began to rot away. I watched the animals retreat and the stars tumble down, but when the feeling of death became overwhelming, I slipped back into my bed, thinking of the world on the other side of The Mountains.



What does the word enveloped convey in the passage?

“Blackness, lifeless and silent, enveloped me.” (paragraph 19)

- Ⓐ The narrator feels surrounded by darkness.
- Ⓑ The narrator feels joyful in the night.
- Ⓒ The narrator fears her safety is in danger.
- Ⓓ The narrator suddenly wishes to go to sleep.



Which detail from “Embers of Moonlight” supports the central idea that the Night of Rebirth is a necessary part of a cycle?

- Ⓐ The narrator watches falling stars land on her roof and crumble away.
- Ⓑ The narrator has heard rumors that the moon sometimes lands too.
- Ⓒ The moon slowly fades and then disappears into the blackness of night.
- Ⓓ The moon questions whether her death is an ending or a beginning.

Go On

Which sentence from "Embers of Moonlight" explains why the narrator has never watched the end of the Night of Rebirth?

- Ⓐ "A few falling stars had landed earlier on the top of my rickety house. . . ."
- Ⓑ "I watched the animals retreat and the stars tumble down. . . ."
- Ⓒ ". . . when the feeling of death became overwhelming, I slipped back into my bed. . . ."
- Ⓓ "I had heard rumors of the moon herself landing, but they were mangled and debated."

How are the flower in "Talking in Their Sleep" and the moon in "Embers of Moonlight" alike?

- Ⓐ They both feel bitter about dying, and they are angry that nature has taken life from them before they were ready.
- Ⓑ They both appear to have died, but they have left behind a piece of themselves to continue the cycle of life.
- Ⓒ They both feel sad about how their beauty fades, but they take comfort in knowing that they brought joy to others.
- Ⓓ They both have experienced death many times, and each peacefully accepts death as a necessary final ending to life.

21

What theme do the poem and the story share?

- Ⓐ Death and birth are part of a cycle.
- Ⓑ All life must eventually come to an end.
- Ⓒ Though something seems dead, it might not be.
- Ⓓ Nature has an inner life we know nothing about.

22

How do the two passages treat the central theme differently?

- Ⓐ In "Embers of Moonlight," the moon dies and disappears; in "Talking in Their Sleep," the plants simply rest for a while.
- Ⓑ In "Embers of Moonlight," the narrator addresses the fear of death; in "Talking in Their Sleep," the plants express their hope for new life.
- Ⓒ In "Embers of Moonlight," the narrator comes to understand the reason for darkness; in "Talking in Their Sleep," the plants joyfully await the light.
- Ⓓ In "Embers of Moonlight," the moon commands the return of life; in "Talking in Their Sleep," the sun will return life to the plants.

Go On

Read the passage. Then answer the questions that follow.

Biomass Basics

by the United States Energy Information Association

"Biomass" from <http://www.eia.gov/kids>, U.S. Energy Information Administration

- 1 Biomass is organic material made from plants and animals (microorganisms). Biomass contains stored energy from the sun. Plants absorb the sun's energy in a process called photosynthesis. The chemical energy in plants gets passed on to animals and people that eat them.
- 2 Biomass is a renewable energy source because we can always grow more trees and crops, and waste will always exist. Some examples of biomass fuels are wood, crops, manure, and some garbage.
- 3 When burned, the chemical energy in biomass is released as heat. If you have a fireplace, the wood you burn in it is a biomass fuel. Wood waste or garbage can be burned to produce steam for making electricity, or to provide heat to industries and homes.

Converting Biomass to Other Forms of Energy

- 4 Burning biomass is not the only way to release its energy. Biomass can be converted to other useable forms of energy, such as methane gas, or transportation fuels, such as ethanol and biodiesel.
- 5 Methane gas is the main ingredient of natural gas. Smelly stuff, like rotting garbage, and agricultural and human waste, release methane gas—also called *landfill gas* or *biogas*.
- 6 Crops like corn and sugar cane can be fermented to produce ethanol. Biodiesel, another transportation fuel, can be produced from left-over food products like vegetable oils and animal fats.

How Much Biomass Is Used for Fuel?

- 7 Biomass fuels provided about 4% of the energy used in the United States in 2011. Of this, about 45% was from wood and wood-derived biomass, 44% from biofuels (mainly ethanol), and about 11% from municipal waste. Researchers are trying to develop ways to burn more biomass and less fossil fuels. Using biomass for energy may cut back on waste and greenhouse gas emissions.

Wood & Wood Waste

Burning Wood Is Nothing New

- 8 The most common form of biomass is wood. For thousands of years people have burned wood for heating and cooking. Wood was the main source of energy in the United States and the rest of the world until the mid-1800s. Wood continues to be a major source of energy in much of the developing world.
- 9 In the United States, wood and wood waste (bark, sawdust, wood chips, wood scrap, and paper mill residues) provide about 2% of the energy we use today.

Using Wood and Wood Waste

- 10 About 80% of the wood and wood waste fuel used in the United States is consumed by industry, electric power producers, and commercial businesses. The rest, mainly wood, is used in homes for heating and cooking.
- 11 Many manufacturing plants in the wood and paper products industry use wood waste to produce their own steam and electricity. This saves these companies money because they don't have to dispose of their waste products and they don't have to buy as much electricity.

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Waste-to-Energy

Energy from Garbage

12 Garbage, often called municipal solid waste (MSW), is the source of about 6% of the total biomass energy consumed in the United States. MSW contains biomass (or biogenic) materials like paper, cardboard, food scraps, grass clippings, leaves, wood, and leather products, and other non-biomass combustible materials, mainly plastics and other synthetic materials made from petroleum.

13 Americans produce more and more waste each year. In 1960, the average American threw away 2.7 pounds of trash a day. Today, each American throws away about 4.4 pounds of trash every day. Of that, about 1.5 pounds are recycled or composted. What do we do with the rest? One option is to burn it. (Burning is sometimes called combustion.) About 85% of our household trash is material that will burn, and most of that is biogenic, or material that is made from biomass (plant or animal products). About 62% of MSW (by weight) is biogenic.

Waste-to-Energy Plants Make Steam and Electricity

14 Today, we can burn MSW in special waste-to-energy plants and use its heat energy to make steam to heat buildings or to generate electricity. There are about 76 waste-to-energy plants in the United States that generate electricity or produce steam. In 2011, these plants generated 14 million kilowatt hours of electricity, about the same amount used by 1.3 million U.S. households. The biogenic material in MSW contributed about 51% of the energy of the MSW that was burned in waste-to-energy facilities. Many large landfills also generate electricity with the methane gas that is produced as biomass decomposes in the landfills.

Waste-to-Energy Plants Also Dispose of Waste

- 15 Providing electricity is not the major advantage of waste-to-energy plants. It actually costs more to generate electricity at a waste-to-energy plant than it does at a coal, nuclear, or hydropower plant.
- 16 The major advantage of burning waste is that it reduces the amount of material that we bury in landfills. Waste-to-energy plants burned about 30 million tons of MSW in 2011. Burning MSW reduces the volume of waste by about 87%.



The word part micro comes from a Greek word that means "small."

Based on this information, what does the word microorganism mean as it is used in the passage?

"Biomass is organic material made from plants and animals (microorganisms)."
(paragraph 1)

- Ⓐ a young and growing life form
- Ⓑ a rare and delicate life form
- Ⓒ a life form that moves quickly
- Ⓓ a life form too tiny to be seen

Go On



Select three sentences from the passage that support the author's claim that waste is a growing concern.

- Ⓐ "Biomass can be converted to other useable forms of energy, such as methane gas, or transportation fuels, such as ethanol and biodiesel."
- Ⓑ "Using biomass for energy may cut back on waste and greenhouse gas emissions."
- Ⓒ "Garbage, often called municipal solid waste (MSW), is the source of about 6% of the total biomass energy consumed in the United States."
- Ⓓ "Today, each American throws away about 4.4 pounds of trash every day."
- Ⓔ "The major advantage of burning waste is that it reduces the amount of material that we bury in landfills."

What evidence does the author provide to support the claim that biomass can reduce the amount of waste in landfills?

- Ⓐ "Biomass can be converted to other useable forms of energy, such as methane gas, or transportation fuels, such as ethanol and biodiesel."
- Ⓑ "About 80% of the wood and wood waste fuel used in the United States is consumed by industry, electric power producers, and commercial businesses."
- Ⓒ "Burning MSW reduces the volume of waste by about 87%."
- Ⓓ "There are about 76 waste-to-energy plants in the United States that generate electricity or produce steam."

Which is the best summary of the passage?

- Ⓐ Biomass is organic material that we can burn to create energy. Using different forms of biomass is a practical way to reduce waste, while also gaining electricity.
- Ⓑ Using different forms of biomass has many advantages for creating energy but comes at a high cost to the environment. Other forms of energy may be just as important.
- Ⓒ Burning biomass, an organic material, can help our environment. Many manufacturers collect their own biomass waste and burn it to create electricity.
- Ⓓ Using different forms of biomass to create energy helps companies. Ideally, biomass will become the main energy source used in the United States.



What examples does the author use to illustrate the idea that converting biomass to other forms of energy might help the environment?

Write your answer on the lines below.

This question has two parts. First, answer Part A. Then, answer Part B.

Part A

What is the author's primary point of view about biomass?

- Ⓐ The United States should adopt biomass as a primary energy source.
- Ⓑ As a fuel source, biomass has many important benefits for today's world.
- Ⓒ Biomass produces too much air pollution to be widely adopted.
- Ⓓ Biomass was important in the past, but it is not practical for modern society.

Part B

Which paragraph from the passage expresses an opposite point of view to that in Part A?

- Ⓐ paragraph 1
- Ⓑ paragraph 5
- Ⓒ paragraph 8
- Ⓓ paragraph 12
- Ⓔ paragraph 15

Go On



What evidence does the author provide to support the claim that biomass can help companies save money?

- Ⓐ "Biomass can be converted to other useable forms of energy, such as methane gas, or transportation fuels, such as ethanol and biodiesel."
- Ⓑ "About 80% of the wood and wood waste fuel used in the United States is consumed by industry, electric power producers, and commercial businesses."
- Ⓒ "Many manufacturing plants in the wood and paper products industry use wood waste to produce their own steam and electricity."
- Ⓓ "There are about 76 waste-to-energy plants in the United States that generate electricity or produce steam."

Read the passage. Then answer the questions that follow.

Heard It Through the Grapevine

by Nick D'Alto, *Odyssey*

CHARACTERS: *Narrator, Esteban, Ted, Wendy, Ollie, Randy, Kate—all members of Mr. Bluni's 8th-grade science class.*

SET: *A middle school science lab that is empty except for a group of kids who are working on a project about connectivity. A pile of books is spread out on a table, and the kids are clustered around a computer that is turned on. A Twister mat is on the floor.*

- 1 **Narrator:** Maybe there are no coincidences. Anyway, you'll never believe how our lab group in science class accidentally created one of the best science projects that our teacher says he has ever seen. Here's how it happened.
- 2 **Ollie:** Randy, would you get off the floor and quit playing Twister?! We have to finish this science project by tomorrow. Can you believe this topic? "Explain what Social Network Mapping is and provide three examples."
- 3 **Wendy:** I didn't understand anything Mr. Bluni said in class today. What are "strong ties" and "cascades"? Do we need to know that?
- 4 **Esteban:** I'd rather talk about . . . you know.
- 5 **Kate:** I know. I heard about it, too.
- 6 **Ted:** Everyone in school has heard about it. But I also heard that it's not true.
- 7 **Kate:** Still, how did the rumor get around so fast?
- 8 **Randy:** Play Twister and you'll know.

Go On

- 9 **Kate:** What?
- 10 **Randy:** The answer is in my game. So don't tell me to stop playing it. Life is really a big game of Twister! Everyone and everything is connected!
- 11 **Narrator:** I have to admit I thought Randy was crazy, but when he started scribbling out his diagram, it all became clear. Who would believe that a science assignment about Social Network Mapping would help us explain the biggest school rumor of all time?
- 12 **Randy:** Well, we're already on Google, and the books are on the lab table. So if we have to do this project, let's get started.
- 13 **Ollie:** You're telling me that rumors are science?
- 14 **Randy** [picking up a book]: Yes! Exactly! According to this book everything from tracking gossip to breaking up a terrorist cell relies on understanding the science of networks—a new, interconnected way of seeing the world.
- 15 **Kate:** That's weird!
- 16 **Wendy:** Wait a minute. At school, almost no one knew the rumor in homeroom. Then, by lunch, everyone knew. Did someone shout it over the intercom?
- 17 **Esteban:** It's "geometric progression." Write this down. If each person told just three friends, do you know how many people would know after 20 cycles?
- 18 **Ollie:** I've figured it out. About 3.5 billion—that's almost half the people on Earth!
- 19 **Ted:** That's wicked cool!
- 20 **Wendy:** Actually, it's the "tipping point"—the cycle when the number becomes huge.
- 21 **Esteban:** Like a nuclear chain reaction.

- 22 **Wendy** [starting to take notes on a laptop]: Write down these other examples: the sale of cell phones (suddenly, we all have them), support for the American Revolution, even body piercing. They all started slowly, and then took off.
- 23 **Randy**: Cool! On page 49, it says that a million fireflies sitting in a mangrove tree can all start flashing at once! So now, programmers are using the same technique to synchronize computers.
- 24 **Ted** [thumbing through a book]: Hey, Kate, I just found your “cascades.” It’s like when a tree hits one power line, and pretty soon half the country is blacked out.
- 25 **Wendy**: Or when losing one type of fish can ruin a whole ecosystem.
- 26 **Esteban** [looking over Kate’s shoulder]: And here’s your other answer. “Strong ties” means that the people you know usually also know each other.
- 27 **Wendy** [holding up a book]: But you also need a way to connect those “strong tie” groups to one another. That’s why for information to move through a network, you also need “weak ties,” casual acquaintances who reach across different clusters of people.
- 28 **Ted**: Write this down. For information to spread through a social network, you also need connectors (people who “know everyone”) and mavens (experts who provide information to others).
- 29 **Kate**: Wait. Now I understand Randy’s diagram [he holds it up].
- 30 **Esteban**: It’s like long distance telephone service.
- 31 **Ted**: Or the neurons in your brain—or even branching rivers—they’re all networks. Your brain can skip past millions of things you know, to remember the one thing you want.
- 32 **Wendy**: A search engine routes that way, too. So does water in a stream.

- 33 **Randy:** Hey! If I'm thinking about a network, my brain is using a network!
- 34 **Wendy:** That's too weird.
- 35 **Ted** [after Kate uses her cell phone to make a call]: Kate, we all agreed—no cell phones.
- 36 **Kate:** That was an expert source. Our school definitely is not closing. We're definitely not merging with South Meadow School. That rumor was a complete tall tale.
- 37 **Ollie:** But it was all over school! It's in tons of e-mails, IMs, and blogs.
- 38 **Esteban:** Welcome to the downside of the Information Age.
- 39 **Kate:** Yeah. When everyone is so connected, wrong information can travel just as fast as good information.
- 40 **Ollie:** That goes for Web surfing, too. Some stuff is false or wrong. Who wrote it? You can't believe everything just because it's on the Web.
- 41 **Esteban:** Or because you hear it at a lunch table. Repeating rumors is so uncool.
- 42 **Ollie:** [But] everything else we learned about the science of networks—from flashing fireflies to how people think—is all true.
- 43 **Esteban:** Wait a minute. You're saying that one false rumor helped us connect all these great facts from all these books and Web sites into the best science project we've ever done? Three examples of connectivity? We've got loads of them!
- 44 **Ted:** Talk about making connections . . .
- 45 **Randy:** I guess we created the best "network" of all—ourselves.
- 46 **Wendy:** And that's no rumor!



The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

What helps the characters see that rumors are science?

- Ⓐ They think about how quickly a rumor travels through their school.
- Ⓑ They conduct a study to see how many rumors traveled in the past.
- Ⓒ They play a game of Twister and build a connection.
- Ⓓ They discover that the rumor about their school is not true.

Part B

Select one sentence that supports the answer in Part A.

- Ⓐ "Who would believe that a science assignment about Social Network Mapping would help us explain the biggest school rumor of all time?"
- Ⓑ "Well, we're already on Google, and the books are on the lab table."
- Ⓒ "If each person told just three friends, do you know how many people would know after 20 cycles?"
- Ⓓ "We're definitely not merging with South Meadow School."

Go On

Read the sentences from the text on the left. Then match the underlined word in each sentence to its closest definition on the right.

Actually, it's the "tipping point"—
the cycle when the number
becomes huge.

So now, programmers are
using the same technique to
synchronize computers.

Welcome to the downside of the
Information Age.

method

advantage

pattern

task

problem

idea

Read these sentences from the play.

"Cool! On page 49, it says that a million fireflies sitting in a mangrove tree can all start flashing at once! So now, programmers are using the same technique to synchronize computers." (line 23)

Which phrase helps the reader understand the meaning of synchronize?

- Ⓐ "a million fireflies"
- Ⓑ "sitting in a mangrove tree"
- Ⓒ "all start flashing at once"
- Ⓓ "programmers are using"

Read these sentences from the play.

“Write down these other examples: the sale of cell phones (suddenly, we all have them), support for the American Revolution, even body piercing. They all started slowly, and then took off.” (line 22)

How do these sentences contribute to the play as a whole?

- Ⓐ They give some essential examples of “strong ties” in a particular culture.
- Ⓑ They suggest that rumors played an important part in the American Revolution.
- Ⓒ They support the idea that rumors travel extremely fast through technology.
- Ⓓ They illustrate the effect of networks from limited rumors to wide changes in society.

Which event finally leads Esteban to understand how deeply things are connected?

- Ⓐ talking with Wendy about “strong ties” and “weak ties”
- Ⓑ seeing how the Internet can spread bad information
- Ⓒ hearing a rumor that the school is going to merge
- Ⓓ realizing that search engines and water are kinds of networks

How do Wendy's feelings about the project change by the end of the story?

- Ⓐ At first she is confused, but she becomes excited.
- Ⓑ At first she is unhappy, and she grows more upset.
- Ⓒ At first she is annoyed, but she enjoys working on it.
- Ⓓ At first she finds it easy, but it gets harder and harder.

How is Ollie changed by his experience working on the science project?

- Ⓐ He comes to believe that people should doubt everything on the Internet.
- Ⓑ He comes to understand how following a rumor is a kind of science.
- Ⓒ He realizes that 3.5 billion people is almost half the people on Earth.
- Ⓓ He realizes that a game of Twister can explain why their school might close.

Match each line from the play on the left with an explanation of how it contributes to the play on the right. Two explanations will have no matches.

Anyway, you'll never believe how our lab group in science class accidentally created one of the best science projects that our teacher says he has ever seen.

They all started slowly, and then took off.

Or when losing one type of fish can ruin a whole ecosystem.

It provides an illustration for a social phenomenon.

It suggests that rumors played an important part in the American Revolution.

It creates a sense of suspense and excitement.

It supports the idea that rumors travel extremely fast through technology.

It broadens the range of the theme from limited gossip to society as a whole.

Read the passages. Then answer the questions that follow.

P. T. Barnum—Master Showman

by M. Toplen

1 Born in 1810, Phineas Taylor (P. T.) Barnum had a huge amount of success with his American Museum in New York and his traveling circus show. Before these businesses, he had tried several other short-term ventures, including operating a store, selling books, and running a newspaper.

2 People are still very familiar with P. T. Barnum today. Many know about the odd objects and amazing animals that were part of his shows. However, they are often more interested in how he promoted them. Barnum was a man who would use almost any tactic he could think of to attract paying customers.

P. T. Barnum and “The Humbug”

3 Barnum discussed the meaning of the word “humbug” at length in his book *The Humbugs of the World*. He defined it as “outside show” and “glittering appearances” designed to attract members of the public.

4 Barnum also took great care to defend humbugs, saying that being a humbug did not mean cheating the audience out of their money. And, he said a person labeled as a humbug could also be described as an “honest man.”

5 Looking at Barnum’s work, however, it’s not always clear where he draws the line between a “humbug” and a “lie.”

Clever Advertising That Could Mislead an Audience . . .

6 The “Prince of Humbugs” was a master at bending the truth without actually lying. For example, he advertised that his museum contained a working model of Niagara Falls. That massive waterfall is close to 200 feet high in places. Barnum’s statement that he had spent a lot of money to obtain this model, along with its implied size, influenced what people expected. When museum visitors located the model, they found it was a mere foot and a half high!

7 Technically, what P. T. Barnum said was accurate, but customers were of course expecting something much larger and more impressive.

. . . And Dishonest Promotion

8 Some of Barnum’s advertising went beyond merely bending facts to making them up. A good example involves a woman named Joice Heth, who he took on tour with him. The flyers promoting Heth stated she was 161 years old. It was later proven she probably wasn’t any older than 80.

9 At one point, Barnum also advertised the “Feejee Mermaid.” He used pictures of beautiful mermaids of myth to draw in customers, but the actual “Feejee Mermaid” was a combination of a monkey and a fish.

“There’s a Sucker Born Every Minute”

10 It is a common belief that P. T. Barnum was the one who said this famous quote. While someone else actually spoke these words, it’s easy to see why people would believe Barnum deserved the credit. Most would agree that Barnum’s advertising tactics often involved tricking the public to some extent.

11 However, his lengthy career suggests that he also provided entertainment that was of high enough quality to keep people coming back for more.

Go On

Like P. T. Barnum, Grizzly Adams had a traveling show in the late 1800s. Adams's specialty was wild animals of all types. Barnum was familiar with this man's wild stories and outright lies. In the following excerpt from his book, Barnum tells of an incident with Adams and some "golden pigeons."

from *The Humbugs of the World*

by Phineas Taylor Barnum, published by Carleton Publisher, 1866

1 The next morning, "Old Grizzly Adams," whose exhibition of bears was
then open in Fourteenth street, happened to be passing through the Museum,
when his eyes fell on the "Golden California Pigeons." He looked a moment and
doubtless admired. He soon after came to my office.

2 "Mr. B," said he, "you must let me have those California pigeons."

3 "I can't spare them," I replied.

4 "But you must spare them. All the birds and animals from California
ought to be together. You own half of my California menagerie, and you must
lend me those pigeons."

5 "Mr. Adams, they are too rare and valuable a bird to be hawked about in
that manner; besides, I expect they will attract considerable attention here."

6 "Oh, don't be a fool," replied Adams. "Rare bird, indeed! Why, they are
just as common in California as any other pigeon! I could have brought a
hundred of them from San Francisco, if I had thought of it."

7 "But why did you not think of it?" I asked, with a suppressed smile.

8 "Because they are so common there," said Adams. "I did not think they
would be any curiosity here. I have eaten them in pigeon-pies hundreds of
times, and shot them by the thousand!"

9 I was ready to burst with laughter to see how readily Adams swallowed the bait, but maintaining the most rigid gravity, I replied:

10 "Oh well, Mr. Adams, if they are really so common in California, you had probably better take them, and you may write over and have half a dozen pairs sent to me for the Museum."

11 "All right," said Adams; "I will send over to a friend in San Francisco, and you shall have them here in a couple of months." . . .

12 Six or eight weeks after this incident, I was in the California Menagerie, and noticed that the "Golden Pigeons" had assumed a frightfully mottled appearance. Their feathers had grown out, and they were half white. Adams had been so busy with his bears that he had not noticed the change. I called him up to the pigeon cage, and remarked:

13 "Mr. Adams, I fear you will lose your Golden Pigeons; they must be very sick; I observe they are turning quite pale!"

14 Adams looked at them a moment with astonishment; then turning to me, and seeing that I could not suppress a smile, he indignantly exclaimed:

15 "Blast the Golden Pigeons! You had better take them back to the Museum. You can't humbug me with your painted pigeons!"

16 This was too much, and "I laughed till I cried" to witness the mixed look of astonishment and vexation which marked the "grizzly" features of old Adams. . . .



For which claim does the author of “P. T. Barnum—Master Showman” provide the least support?

- Ⓐ Barnum was a master of bending the truth without actually lying.
- Ⓑ In spite of his tactics, Barnum had a lengthy and successful career.
- Ⓒ Audiences were often led to expect great things by Barnum’s advertising.
- Ⓓ It’s easy to see why people think Barnum said, “There’s a sucker born every minute.”



How does paragraph 8 of “P. T. Barnum—Master Showman” add to the reader’s understanding of Barnum’s advertising tactics?

- Ⓐ It explains why people were always willing to pay money to see Barnum’s shows.
- Ⓑ It shows how difficult it was at that time to prove how old someone was.
- Ⓒ It describes how Barnum was able to bend the truth without actually lying.
- Ⓓ It gives an example of how Barnum was not always truthful in his advertisements.

Which statement from "P. T. Barnum—Master Showman" supports the author's viewpoint that Barnum's shows can still be entertaining?

- Ⓐ "People are still very familiar with P. T. Barnum today."
- Ⓑ "Many know about the odd objects and amazing animals that were part of his shows."
- Ⓒ "Barnum was a man who would use almost any tactic he could think of to attract paying customers."
- Ⓓ "Technically, what P. T. Barnum said was accurate, but customers were of course expecting something much larger and more impressive."



The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

What is the meaning of the phrase swallowed the bait as it is used in this sentence from *The Humbugs of the World*?

"I was ready to burst with laughter to see how readily Adams swallowed the bait, but maintaining the most rigid gravity, I replied:" (paragraph 9)

- Ⓐ changed one's mind
- Ⓑ made up a story
- Ⓒ got unusually excited about something
- Ⓓ believed something that wasn't true

Part B

What does Barnum's use of the phrase swallowed the bait suggest about how he views Adams?

- Ⓐ He thinks Adams is easily fooled.
- Ⓑ He thinks Adams looks hungry.
- Ⓒ He thinks Adams is greedy.
- Ⓓ He thinks Adams is annoying.



Imagine you are creating an illustrated version of *The Humbugs of the World*. Which would best support and complement the part of the book you read?

- Ⓐ an illustration of the Golden Pigeons
- Ⓑ a poster advertising Barnum's Museum
- Ⓒ a photograph of Grizzly Adams
- Ⓓ a map of San Francisco, California



Read the following paragraphs from *The Humbugs of the World*.

"Oh, don't be a fool," replied Adams. "Rare bird, indeed! Why, they are just as common in California as any other pigeon! I could have brought a hundred of them from San Francisco, if I had thought of it." (paragraph 6)

"But why did you not think of it?" I asked, with a suppressed smile. (paragraph 7)

"Because they are so common there," said Adams. "I did not think they would be any curiosity here. I have eaten them in pigeon-pies hundreds of times, and shot them by the thousand!" (paragraph 8)

What is the purpose of paragraph 7?

- Ⓐ It tells that Barnum thinks Adams is funny.
- Ⓑ It suggests that Barnum is pleased to see Adams.
- Ⓒ It shows that Barnum will admit his trick to Adams.
- Ⓓ It hints that Barnum has a plan to trick Adams.

Go On



Select two facts about P. T. Barnum that appear only in *The Humbugs of the World*.

- Ⓐ Barnum runs a museum.
- Ⓑ Barnum is called a "humbug."
- Ⓒ Barnum lies to people.
- Ⓓ Barnum's advertising tactics are described.
- Ⓔ Barnum tricks a single person.



With which sentence would the authors of both passages agree?

- Ⓐ Adams and Barnum were both clever men.
- Ⓑ Adams was better at lying than Barnum was.
- Ⓒ Barnum felt more regret for his lies than Adams did.
- Ⓓ Barnum and Adams enjoyed working with animals.



Which sentence describes how the authors of both passages treat their subjects?

- Ⓐ Both authors enjoy laughing about the many people who were tricked by P. T. Barnum and his humbugs.
- Ⓑ Both authors give examples of Barnum's humbugs, but the author of "P. T. Barnum" does not seem to approve, while Barnum displays a sense of humor about it in his book.
- Ⓒ The author of "P. T. Barnum" gives the impression that people hated being fooled by Barnum, while Barnum himself says that some people did not mind it.
- Ⓓ The author of "P. T. Barnum" gives the impression that Barnum's show often featured animals, while Barnum in his book shows that he only rarely featured animals.

