

FCAT 2.0 Reading Online Practice Test



Directions: This Practice Test contains six reading passages and 50 multiple-choice questions. Mark your answers in the Answer Sheet section at the back of this book.

Read the poems before answering Numbers 1 through 7.

Emily Dickinson, 1830–1886



Emily Elizabeth Dickinson, a native of Amherst, Massachusetts, born December 10, 1830, received an education suitable for young women of New England. Her grandfather founded Amherst College, where her father served as treasurer while Dickinson and her brother and sister were growing up. She attended Amherst Academy and Mount Holyoke Female Seminary in order to receive an education in the classics as required by her father. Dickinson never married and remained at home with her parents. In her later years she rarely left her home. When she died May 15, 1886, her family was astonished to discover books containing almost eighteen hundred poems written during her lifetime. Her work earned her a place among the major American poets.

A Book

He ate and drank the precious words,
His spirit grew robust;
He knew no more that he was poor,
Nor that his frame was dust.
He danced along the dingy days,
And this bequest of wings
Was but a book. What liberty
A loosened spirit brings!

There Is No Frigate Like a Book

There is no frigate¹ like a book
To take us lands away,
Nor any coursers² like a page
Of prancing poetry.
This traverse may the poorest take
Without oppress³ of toll;
How frugal is the chariot
That bears a human soul!

¹**frigate** ship

²**coursers** horses

³**oppress** to worry, trouble, or other negative effects

Answer Numbers 1 through 7. Base your answers on “A Book” and “There Is No Frigate Like a Book.”

- 1 Read these lines from the poem “A Book.”

**He ate and drank the precious words,
His spirit grew robust;**

What is the meaning of the word *robust* as it is used in these lines?

- (A) hungry
- (B) thirsty
- (C) healthy
- (D) dizzy

- 2 Read these lines from “A Book.”

He danced along the dingy days,

And this bequest of wings

Based on the rest of the poem, which sentence best restates the meaning of these lines?

- (F) The reader’s eyes moves quickly.
- (G) The reader feels like dancing for the first time in years.
- (H) The reader realizes that he is becoming young again.
- (I) The reader experiences joy, such as when dancing, while reading the book.
- 3 The author of “A Book” suggests that a book creates “A loosened spirit” that will most likely
- (A) prompt the reader to dance and play.
- (B) cause any reader to forget all worries and cares for a while.
- (C) free the reader from the aches and pains of becoming old.
- (D) compel the reader to forgive the wrongs others have done.
- 4 Which word best describes the tone of “There Is No Frigate Like a Book”?
- (F) joy
- (G) reverence
- (H) indifference
- (I) informative
- 5 The speaker of “There Is No Frigate Like a Book” refers to books as both a boat and strong prancing horses that pull a reader in a chariot. Why does the author most likely structure the poem in this way?
- (A) to indicate the power that books have to play on readers’ minds and imaginations
- (B) to suggest that the speaker most enjoys reading about journeys
- (C) to show that books about nature have them most power to affect readers
- (D) to emphasize the importance of the book that each reader loves the most

- 6 Which phrase best describes both the reader in “A Book” and the speaker of “There Is No Frigate Like a Book”?
- (F) studious, but high-spirited
 - (G) worried, but sensitive
 - (H) isolated, but happy
 - (I) weak, but adventurous
- 7 “Which excerpt best expresses the theme of both “A Book” and “There Is No Frigate Like a Book”?
- (A) “He ate and drank the precious words . . .”
 - (B) “How frugal is the chariot That bears a human soul!”
 - (C) “This traverse may the poorest take . . .”
 - (D) “He danced along the dingy days, . . .”

Read the article before answering Numbers 8 through 12.

Millions from Chips

Only a true entrepreneur¹ could find all the riches that come from baking.

Debbi loved baseball as much as cooking, and, at the age of thirteen, she became one of the first thirteen-year-old girls to work retrieving balls for a professional baseball team. These wages allowed her to pursue her love of baking. With the ingredients she bought, she baked and experimented until she had the perfect chocolate chip cookie recipes. How did she know it was so good? All her family, friends, and everyone else who tasted these delights raved about what great cookies they were.

Later when Debbi Fields married and was living in her own home, she found herself wanting even more to make her happy. She loved her husband and her life, but she wanted to make her mark on the world.



Family and friends were always clamoring for her chocolate chip cookies and she began to wonder if there might be a future in her own original recipe for America's favorite treat. Those same family members and friends told this twenty-year-old woman that her ideas wouldn't work. When she turned to bankers and other investors for help in setting up her own business, she found that these people shared the same opinion. Through hard work and diligence, Debbi Fields finally got a loan and opened her first store, Mrs. Fields Chocolate Chippery.

Business was slow and her husband's prediction that she wouldn't sell fifty dollars of cookies the first day looked likely to come true. Not one to give up, the amazing woman decided that people who tried her cookies would also buy them, so she went outside with a tray of cookies and gave one to each person who walked by. Her husband turned out to be right. She didn't sell fifty dollars worth of cookies that first day; she sold seventy-five dollars worth!

Since August 16, 1977, the day her shop opened in Palo Alto, California, Mrs. Fields has become one of the most successful business people in the world. She didn't stop with just that one store, but opened dozens of others around the country. When Debbi Fields began offering more than just chocolate chip cookies to customers, she changed the name of her chain of stores to Mrs. Fields Cookies. Her business ideas brought tremendous success, and her company grew to over six hundred stores not only in the United States but also in countries around the world!

Debbi Fields even developed a business plan for getting her cookies to markets where she had no shops. Soon her factories were producing and selling thousands of packages of her famous chocolate chip cookies in grocery stores across the country. You have probably seen them and may have enjoyed these delicious snacks for yourself.

How does Debbi Fields explain her success; she gives credit to her pursuit of quality, not just high-quality ingredients for her cookies, but also the quality of service that her company provides to her customers and clients. When Debbi Fields says, "Good enough never is," you can bet that she means it.

This amazing woman's success was achieved with more than a recipe and hard work, but also exceptional use of every technique and technology available. When she began expanding her company in 1989, Debbi and her husband, Randy Fields, were among the first manufacturers to utilize the latest computer technology as part of a business plan. Randy Fields developed computer software that reconfigured her factories, shipping system, and all office tasks in such a way that the company required far fewer home office employees. Mrs. Fields, Inc. cut waste and dramatically improved efficiency and increased productivity. The computer system they developed became as famous as Debbi Fields cookies. Business leaders and educators came to study and then marvel at what the couple had accomplished. As a matter of fact, their computer system is now taught at Harvard University as the standard all businesses should strive to achieve.

Best-selling author and television star were later added to her list of titles. Debbi Fields wrote two hugely popular cookbooks. The first book *100 Recipes from the Kitchen of Debbi Fields* achieved a significant first. No other cookbook had reached the number one spot on the New York Times bestseller list. Her second cookbook concerned another favorite American treat—chocolate. Together, these two books sold over two million copies. Debbi Fields also hosted her own weekly cooking show *Great American Desserts*. A hit on public television, the show inspired her third cookbook.

By 1993, Debbi Fields found she wanted to change her life again. This time she wanted to put all her time and energy into her family. She sold her company and moved to Memphis, Tennessee, where she raised her own five children and five stepchildren she gained after her divorce and remarriage.

However, she still keeps her hand in business affairs. Because of her achievements in the food industry, she was invited to become a member of the Board of Directors for Outback Steakhouse. WKNO asked her to join the board for their television and radio stations. Debbi Fields also continues her writing career, and has become active in many charitable causes.

After selling Mrs. Fields, Inc., Debbi Fields still takes part as a member and leader of the company's board of directors. By 2000, Mrs. Fields Cookies, Inc. was estimated to be worth \$450 million. She had truly made a unique mark on the world.

¹**entrepreneur** a person who takes all the risks of creating a business or company

Answer Numbers 8 through 12. Base your answers on the article “Millions from Chips.”

- 8** Which word BEST describes Debbi Fields' approach to business?
- (F) methodical
 - (G) hurried
 - (H) determined
 - (I) solitary
- 9** What influenced Debbi Fields to begin a career?
- (A) finding unhappiness in her marriage
 - (B) writing her own cookbook
 - (C) discovering something missing from her life
 - (D) earning so much money from the Oakland Athletics

- 10** Which of the following is an example of an obstacle Debbi Fields turned into a business advantage?
- (F) handing out cookies for people to taste since few people entered her new store
 - (G) using a bank loan to begin her first cookie store
 - (H) selling her business before its value dropped
 - (I) opening stores in areas where very few people lived and shopped
- 11** What is the MAIN drawback to Debbi Fields' business?
- (A) Growth brings about new challenges.
 - (B) Good recipes can be challenging to create.
 - (C) Computers change constantly.
 - (D) People have negative ideas about trying new foods.
- 12** What is the author's purpose in writing this article?
- (F) to teach new business owners the importance of advertising
 - (G) to provide entrepreneurs with a plan for starting a new business
 - (H) to demonstrate the necessity of always using quality products
 - (I) to entertain the reader with a story of one person's ingenuity

Read the article “In the Depths of a Coal Mine” before answering Numbers 13 through 17.

In the Depths of a Coal Mine

by Stephen Crane

In the following selection from an 1894 story by Stephen Crane, the first person narrator presents a gripping account of a trip down into a working coal mine.



. . . Over in front of a little tool-house a man smoking a pipe sat on a bench. “Yes,” he said, “I’ll take yeh down if yeh like.” He led us by little cinder paths to the shed over the shaft of the mine. A gigantic fan-wheel near by was twirling swiftly. It created cool air for the miners, who on the lowest vein of this mine were some eleven hundred and fifty feet below the surface. As we stood silently waiting for the elevator we had opportunity

to gaze at the mouth of the shaft. The walls were of granite blocks, slimy, moss-grown, dripping with water. Below was a curtain of ink-like blackness. It was like the opening of an old well, sinister from tales of crimes.

The black, greasy cables began to run swiftly. We stood staring at them and wondering. Then of a sudden the elevator appeared and stopped with a crash. It was a plain wooden platform. Upon two sides iron bars ran up to support a stout metal roof. The men upon it, as it came into view, were like apparitions from the center of the earth.

A moment later we marched aboard, armed with little lights, feeble and gasping in the daylight. There was an instant’s creak of machinery, and then the landscape, that had been framed for us by the door-posts of the shed, disappeared in a flash. We were dropping with extraordinary swiftness straight into the earth. It was a plunge, a fall. The flames of the little lamps fluttered and flew and struggled like tied birds to release themselves from the wicks. “Hang on,” bawled our guide above the tumult.

The dead black walls slid swiftly by. They were a swirling dark chaos on which the mind tried vainly to locate some coherent thing, some intelligible spot. One could only hold fast to the iron bars and listen to the roar of this implacable descent. When the faculty of balance is lost, the mind becomes a confusion. The will fought a great battle to comprehend something during this fall, but one might as well have been tumbling among the stars. The only thing was to await revelation.

It was a journey that held a threat of endlessness.

Then suddenly the dropping platform slackened its speed. It began to descend slowly and with caution. At last, with a crash and a jar, it stopped. Before us stretched an inscrutable darkness, a soundless place of tangible loneliness. Into the nostrils came a subtly strong odor of powder-smoke, oil, wet earth. The alarmed lungs began to lengthen their respirations.

Our guide strode abruptly into the gloom. His lamp flared shades of yellow and orange upon the walls of a tunnel that led away from the foot of the shaft. Little points of coal caught the light and shone like diamonds. Before us there was always the curtain of an impenetrable night. We walked on with no sound save the crunch of our feet upon the coal-dust of the floor. The sense of an abiding danger in the roof was always upon our foreheads. It expressed to us all the unmeasured, deadly tons above us, as if the roof were a superlative might that regarded with the supreme calmness of almighty power the little men at its mercy. Sometimes we were obliged to bend low to avoid it. Always our hands rebelled vaguely from touching it, refusing to affront this gigantic mass.

All at once, far ahead, shone a little flame, blurred and difficult of location. It was a tiny, indefinite twig, like a wisp-light. We seemed to be looking at it through a great fog. Presently there were two of them. They began to move to and fro and dance before us.

After a time we came upon two men crouching where the roof of the passage came near to meeting the floor. If the picture could have been brought to where it would have had the opposition and the contrast of the glorious summer-time earth, it would have been a grim and ghastly thing. The garments of the men were no more sable than their faces, and when they turned their heads to regard our tramping party, their eyeballs and teeth shone white as bleached bones. It was like the grinning of two skulls there in the shadows. The tiny lamps in their hats made a trembling light that left weirdly shrouded the movements of their limbs and bodies. We might have been confronting terrible spectres.

But they said, "Hello, Jim" to our conductor. Their mouths expanded in smiles—wide and startling smiles.

In a moment they turned again to their work. When the lights of our party reinforced their two lamps, we could see that one was busily drilling into the coal with a long thin bar. The low roof ominously pressed his shoulders as he bent at his toil. The other knelt behind him on the loose lumps of coal.

We came upon other little low-roofed chambers, each containing two men, a "miner," who makes the blasts, and his "laborer," who loads the coal upon the cars and assists the miner generally. And at each place there was this same effect of strangely satanic smiles and eyeballs wild and glittering in the pale glow of the lamps.

In the chamber at the foot of the shaft, as we were departing, a group of the men were resting. They lay about in careless poses. When we climbed aboard the elevator, we had a moment in which to turn and regard them. Then suddenly the study in black faces and crimson and orange lights vanished. We were on our swift way to the surface. . . .

Of a sudden the fleeting walls became flecked with light. It increased to a downpour of sunbeams. The high sun was afloat in a splendor of spotless blue. The distant hills were arrayed in purple and stood like monarchs. A glory of gold was upon the near-by earth. The cool fresh air was wine. . . .

Answer Numbers 13 through 17. Base your answers on the article “In the Depths of a Coal Mine.”

- 13** How did Crane change after visiting the coal mine?
- (A) He learned why miners love their jobs.
 - (B) He began to understand how dangerous the world can be.
 - (C) He learned why coal was so expensive to buy.
 - (D) He became very grateful for conditions on the surface of the world.
- 14** Crane vividly describes his feelings as he rode the elevator down into the coal mine. Why does he want readers to understand his emotions about this trip?
- (F) He persuades readers to see how coal mines are constructed.
 - (G) He wants readers to imagine how weird and unreal the mine truly is.
 - (H) He hopes readers will heed his warning about not entering a coal mine.
 - (I) He encourages readers to see the glamour of working in a coal mine.
- 15** Read these sentences from the article.

...When the faculty of balance is lost, the mind becomes a confusion. The will fought a great battle to comprehend something during this fall, but one might as well have been tumbling among the stars. The only thing was to await revelation.

What is the most likely meaning of the word *faculty*?

- (A) sense
- (B) teachers
- (C) imagination
- (D) memory

- 16 “In the Depths of a Coal Mine” was written in the same style as
- (F) a news report.
 - (G) a persuasive paper.
 - (H) a formal speech.
 - (I) a personal narrative.
- 17 Why did the author write “In the Depths of a Coal Mine”?
- (A) to encourage the reader to take up the work of a coal miner
 - (B) to describe the process by which coal is processed into fuel
 - (C) to relate the experiences that teach a coal miner the job
 - (D) to present the lessons learned by a first-time visitor to a coal mine

Read the passage “Hiking” before answering Numbers 18 through 23.

Hiking



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It began in bright and sunny weather, a sparkle of light moving through the trees. It grew wider where it touched the edge of the lake at the new place I had chosen to fish. Beside the sparkle trees grew so thick no one would think that anything could make its way through. I noticed that sometimes the lake was that shiny and that its glint could be gold, blue, or green reflecting the remnants of visitors who do not care what they leave behind. But this twinkle of light was different—a shiny object that wavered in the sun and heat as it moved along its course. I rowed slowly to the isolated spot, hungry to know the identity of this lone guest moving over the lake’s edge.

Nearly there, I discovered the phenomenon’s voice, a quiet song that did not carry far. Then I saw there were actually a myriad of colors—a white foam riding atop a ribbon that glittered, or flowed with the color of the trees and, an instant later, dark as the soil or blue like the heavens above. I discovered that it was a friendly traveler who had a longer acquaintance with the area than I.

Over the summer, the lake receded as it always does in this hot dry land, but the stream still ran to mingle with the larger community of water where I spent my mornings and evenings. At the point where it flowed into the lake, the stream's mood changed to match the day around it. Weeks passed, and I realized I had only met one end of this trail of water. I glanced up the slight hill it slid down so happily and determined that if it could find its way through the tangle so could I.

I returned the next day shod with the kind of footwear best fitted for a jaunt to the unknown and tied up with a web that would make a spider proud. But like that solitary traveler, I planned to journey simply with only the few things an intrepid explorer might need. I beached my boat near the humming boundary where stream became lake, and took that first step to those places I did not know. Some spaces were so small that Earth's green growing creatures hugged me tight. My steps were muffled as I seemed to pass along the aisle of a cathedral with green pillars that met above my head. My eyes, used to the filtered light, stung with sharp tears when plants gave way to open carpeted spaces where the air sailed as freely as the babbling friend that guided my way.

At the necessary times, I took a seat beside my transparent companion and gazed beneath its invisible skin, catching glimpses of water-smoothed stones worn down by the stream's constant labor. Slowly my vision grew sharper and more intense as if my eyes had been transformed into a microscope. I saw the tiny wakes of lacy water bugs skating the surface, riding a miniature wave, and heading to a place that was as strange as the one I sought. I also glimpsed small individuals who had made their homes beneath my flowing friend. Suddenly there was a flash of silver fins and scales, a fish come to prey on the tiny inhabitants I had discovered. Despite their fate, it was a joy to learn that countless others had preceded me in my quest and had found the stream so pleasing.

Anxious to learn what was ahead, I took a last sip from the bottle in my bag, drew a deep breath, and began the next leg of my outing. In a few moments I heard a dull roar and realized that I would soon reach a wonder as powerful as my discovery of the stream. Gravel and rocks lined the path beside the stream, and the crunch of my boots grew in volume until it matched the intensity of the chorus that was calling to me. A few steps around a bend, I was pleased to see that my friend had a partner. Another stream snaked its way toward another stand of trees, arriving from a place my stream had never been. Together they met a low castle wall that attempted to bar their way, but they gathered their liquid forces and overflowed the battlements, forming a low glittering waterfall. At its base grew a pool that rippled and foamed then ironed itself out to form the larger version of the stream I had been following. I stored this portrait in my mind's album so that I could study the image any time I wished.

One simple step carried me to the top of the rocks that formed the waterfall. Ahead I discovered that I was not the first to trudge this way. Children and their smiling parents played along the banks of my now narrower stream and splashed in its waters. I nodded to each one I met but no one spoke for fear of shattering the magic spell that had us in its power. Soon I had passed these other guests, and I found other flows that joined my stream. Even though my stream was shrinking before my eyes, it was no less pleasing to my soul.

No trumpets sounded or lookouts shouted when I reached the destination of my day. A small hill rose up to block the view, and below it clear cold water bubbled up from a small opening in the ground. It was a line so small I knew that I had first met it weeks ago at the point of its old age. Here was the stream in its infancy. A thoughtful hand had provided a bench for my relief, so I sat down to ponder a new mystery. My stream had a pathway hidden under the hill and the heat-soaked plains that stretched beyond this blessed spot. I would never know the place where it was truly born or the actual span of its age. But like the stream, I too had come from a time and place I could not remember. But the journey, not its goal, changed me that day. Ralph Waldo Emerson wrote in an essay called "Art": "Though we travel the world over to find the beautiful, we must carry it with us, or we find it not." I will travel with the stream's beauty for the rest of my days.

Answer Numbers 18 through 23. Base your answers on "Hiking."

- 18** With which statement would a geographer most likely agree?
- (F) Every place on Earth has its own unique language.
 - (G) Children should be instructed in the language of the Earth.
 - (H) Land features change from one spot to another.
 - (I) Earth is a place where little ever changes.

- 19** Read this sentence from "Hiking."

At the necessary times, I took a seat beside my transparent companion and gazed beneath its invisible skin, catching glimpses of water-smoothed stones worn down by the stream's constant labor.

What does the word *transparent* mean?

- (A) clear
- (B) visible
- (C) vague
- (D) shady

- 20 The author says that the stream, even though a strip of flowing water, “still ran to mingle with the larger community of water.” The stream becomes part of a larger community because it
- (F) forms from raindrops falling onto the land.
 - (G) becomes a part of the lake.
 - (H) brings joy to so many plants, animals, and people.
 - (I) is the same color as the lake.
- 21 The author includes this quote from Ralph Waldo Emerson.
- “Though we travel the world over to find the beautiful, we must carry it with us, or we find it not.”**
- Which statement best shows that the author has accepted this philosophy?
- (A) The author spends time searching for beauty in the world.
 - (B) The author has learned to remember the beauty that has been seen so it is not lost.
 - (C) The author learns that one journey can explain the entire world.
 - (D) The author has gained the knowledge of what creates true beauty.
- 22 Based on the passage, what action will the narrator most likely take in the future?
- (F) The narrator will work to save the stream from the litter people leave behind.
 - (G) The narrator will guide other people to see the stream’s beauty.
 - (H) The narrator will explore new paths throughout the area.
 - (I) The narrator will return to this spot regularly.
- 23 How does the author help the reader better understand the passage?
- (A) The author uses similes to help clarify the comparison of the stream to the lake.
 - (B) The author uses alliteration by repeating letter sounds to make the story easier to read and enjoy.
 - (C) The author uses imagery to help the reader visualize the setting.
 - (D) The author uses a photograph of the steam to reinforce the main idea.

Read the article “STS-125: Final Shuttle Mission to Hubble Space Telescope” before answering Numbers 24 through 30.

STS-125: Final Shuttle Mission to Hubble Space Telescope

by NASA

It's a mission to once more push the boundaries of how deep in space and far back in time humanity can see. It's a flight to again upgrade what already may be the most significant satellite ever launched. And, for the space shuttle, it's a final visit to a dear, old friend.

The STS-125 mission will return the space shuttle to the *Hubble Space Telescope* for one last visit before the shuttle fleet retires in 2010. Over 11 days and five spacewalks (planned for October 2008), the shuttle *Atlantis'* crew will make repairs and upgrades to the telescope, leaving it better than ever and ready for another five years – or more – of research.

The shuttle *Discovery* launched *Hubble* in 1990, and released it into an orbit 304 nautical miles above the Earth. Since then it's circled Earth more than 97,000 times and provided more than 4,000 astronomers access to the stars not possible from inside Earth's atmosphere. *Hubble* has helped answer some of science's key questions and provided images that have awed and inspired the world.

“We've actually seen an object that emitted its light about 13 billion years ago,” said Hubble senior scientist Dave Leckrone. “Since the universe is 13.7 billion years old, that's its infancy, the nursery. From the nearest parts of our solar system to further back in time than anyone has ever looked before, we've taken ordinary citizens on a voyage through the universe.”

Atlantis' crew – Commander Scott Altman, Pilot Gregory C. Johnson and Mission Specialists Andrew Feustel, Michael Good, John Grunsfeld, Mike Massimino and Megan McArthur – will be the fifth shuttle crew to fly to the telescope. Their predecessors have replaced and repaired failed and faulty components and added new and improved cameras and scientific equipment, and the STS-125 crew will be no different.

Most exciting are the new scientific instruments *Atlantis'* spacewalkers will install. The Cosmic Origins Spectrograph, for instance, will observe the light put out by extremely faint, far-away quasars and see how that light changes as it passes through the intervening gas between distant galaxies. In this way scientists will learn what that gas is made of, how it's changed over time and how it affects the galaxies around it.



Image above: These seven astronauts take a break from training to pose for the STS-125 crew portrait. From the left are astronauts Michael J. Massimino, Michael T. Good, both mission specialists; Gregory C. Johnson, pilot; Scott D. Altman, commander; K. Megan McArthur, John M. Grunsfeld and Andrew J. Feustel, all mission specialists. Image credit: NASA

“It’s an important player in the story of how galaxies are formed and how the chemical makeup of the universe has changed over time,” Leckrone said.

And the new Wide Field Camera 3 will allow *Hubble* to take large-scale, extremely clear and detailed pictures over a very wide range of colors. . . .

“If I want a complete family album of the universe, I need to look at it in all these different wavelengths,” Leckrone said. “This will be the first time we’ve had an opportunity to take all these different images together, to have a comparable quality of pictures across this whole wavelength band.”

Before those much anticipated views are seen, though, the equipment has to be installed – a process that will be exciting in its own right. The spacewalks necessary to outfit *Hubble* will be very different from the spacewalks conducted at the *International Space Station*.

“It’s more like brain surgery than construction,” Lead Flight Director Tony Ceccacci said. “On station spacewalks, you’re installing large pieces of equipment – trusses, modules, etc. – and putting it together like an erector set. You can’t do that with *Hubble*. *Hubble* spacewalks are comparable to standing at an operating table, doing very dexterous work.”

Although the installation of the new equipment and the replacement of some old items – gyroscopes, batteries and a fine guidance sensor – will be challenging, it’s the repairs the astronauts plan that will be the most complicated. . . . Those instruments were never designed to be repaired in space. In fact, they were specifically designed not to come apart.

“When we first looked at it, we were going ‘well, maybe, maybe not,’” Ceccacci said.

Since then, the team has come up with a plan for the work that Ceccacci believes will be very successful. But it won’t be easy – the repair of the spectrograph, for instance, requires the spacewalkers to remove more than 100 screws to access a computer card they will pull out and replace.

Still, the mission’s commander pointed out that it’s good practice for the future.

“I think it’s a step that we need to take to make us better able to go to places like Mars,” Altman said. “You don’t want to drag a whole spare giant box along – you’d like to be able to have the one little transistor you need to plug in when that fails. Being able to demonstrate this in space is a key element of us growing as a space-faring people.”

The *Hubble* spacewalks won’t be the only things that differ from missions to the space station. Confined to just the shuttle, the quarters will be tighter; with five back-to-back spacewalks, the pace will be faster.

Without the (space) station crew to give the shuttle a once over and photograph its heat shield, the customary survey of the heat shield done the day after launch will be much more intensive. The crew will use the shuttle robotic arm and its 50-foot boom extension and sensor systems to perform not only the standard nose cap and wing leading edges inspection, but also a survey of the upper crew cabin and the entire underside.

In the unlikely event that irreparable damage is found, the crew also won’t be able to get to the space station to wait for a ride home – *Atlantis* can’t reach the station



The Hubble Space Telescope is seen in March 2002 with its new solar arrays after the completion of STS-109, the third Hubble servicing mission. Image: NASA

from *Hubble's* orbit. . . . If needed, space shuttle *Endeavour*, manned by the flight deck crew of mission STS-123 which flew in March (2008), will be ready to fly to *Hubble* and retrieve *Atlantis'* crew within days.

"*Hubble* puts cutting edge science together with a visual image that grabs the public's imagination," Altman said. "I think that's the first step in exploration. Because *Hubble* takes light that's been traveling for billions of years, sucks it in and shows it to us. It's like taking you on a journey 13 and a half billion light years away while you sit there at home and look out at the universe."



The mission insignia for STS-125—the fourth Hubble servicing mission. Image: NASA

Answer Numbers 24 through 30. Base your answers on the article "STS-125: Final Shuttle Mission to Hubble Space Telescope."

- 24** From reading the article, the reader can infer that the *Hubble* telescope will
- (F) shut down and float further out into space.
 - (G) continue to work for at least a few more years after the mission is complete.
 - (H) be rescued and brought back to the Earth when it finally fails.
 - (I) eventually crash into the Earth.

- 25 According to the article, why is this mission more dangerous than other ones to the *Hubble* telescope?
- (A) The telescope has moved so far out into space.
 - (B) Shuttle astronauts must build new tools while in space.
 - (C) Astronauts must bring the telescope inside the shuttle to make repairs.
 - (D) No one from the space station will be available to help the shuttle crew in case of an emergency.
- 26 According to the article, why is the Hubble telescope able to view other galaxies better than telescopes on the Earth?
- (F) It is the largest telescope humans have ever built.
 - (G) Shuttle astronauts clean its lenses regularly.
 - (H) Its view of space is not blocked by the Earth's atmosphere.
 - (I) Improved parts have been added to the telescope during other shuttle missions.
- 27 Read this sentence from the article.
- The Cosmic Origins Spectrograph, for instance, will observe the light put out by extremely faint, far-away quasars and see how that light changes as it passes through the intervening gas between distant galaxies.**
- What does *intervening* mean?
- (A) stopping or delaying an event from happening
 - (B) being in a spot that blocks one area from another
 - (C) preventing something negative from happening
 - (D) happening at a time after an earlier event and before a later event
- 28 What causes instruments to be very difficult to repair in space?
- (F) They were welded together so that the telescope is one unit.
 - (G) They were never meant to be taken apart or to be repaired in space.
 - (H) They must be repaired by surgeons trained to use very delicate tools.
 - (I) They must be removed, repaired, and reinstalled by astronauts controlling robot arms.

- 29 According to the article, why is this mission so exciting for the shuttle crew and NASA's future plans?
- (A) If the crew succeeds, then the shuttle can be upgraded and used far into the future.
 - (B) No one has ever been able to make repairs during any other shuttle missions.
 - (C) The mission's success will prove that shuttles should be kept in service.
 - (D) These kinds of repairs have not been attempted before and may improve the way space repairs are handled in years to come.
- 30 The author of this article would most likely make the statement that space telescopes must
- (F) move to higher orbits so that repairs will be less necessary in the future.
 - (G) be launched in future programs so scientists can continue the study of space.
 - (H) be saved by moving them to the space station itself.
 - (I) include devices that will help detect messages from aliens on other planets.

Read the article "Earth's Tilt and Climate Changes" and the poem "Stormy Day" before answering Numbers 31 through 37.

Earth's Tilt and Climate Changes



Various species of animals lived in each of Earth's geologic eras, but Earth's geography and climate have changed too.

Earth, our home planet, has oceans of liquid water, and continents that rise above sea level. NASA scientists combined satellite photographs with surface data to create this detailed image of Earth's land masses and oceans. The swirling mass of clouds west of Mexico is a large hurricane. Image credit: NASA/Goddard Space Flight Center

North America's Great Lakes and other geographic features were carved during the last Ice Age. Tremendous amounts of snow piled higher and higher until the sheer weight packed down the snow into layer upon layer of ice. When the weight became too great, the ice layers started to slip and move away from the point where more snow was falling. Across the Northern Hemisphere this meant that the great ice floes moved south.

As the ice floes moved, they scrapped across the land, gouging out boulders and soil. Huge amounts of earth and rock were pushed along as if by a giant broom. Eventually the heavy snows stopped and the ice began to melt, leaving the earth and rock behind. This process created the rocky soil conditions in the United States New England area. Gouges became lakes. Melting water flowed away as rivers. This process is still causing rivers like the Mississippi to run. Ice Ages reoccurred throughout the Earth's history. But when exactly did they occur?

Two scientists, Peter Huybers of Woods Hole Oceanographic Institution and Carl Wunsch of the Massachusetts Institute of Technology, have spent years studying the Ice Ages. Drilling into the ocean floors allowed these scientists to study soil samples from ancient time periods. Scientists know that when ice floes locked up huge amounts of oxygen within the frozen water, there is less oxygen in the ocean. Foraminifera, or tiny ocean animals, use oxygen from ocean water to create their shells. Studying foraminifera in the layers tells scientists which layers were formed when there was more oxygen in the oceans or in the ice. Using radiocarbon dating, the scientists can pinpoint when each layer was formed. If a layer shows a certain time period had low oxygen levels in the seawater, scientists know that it was a time when an Ice Age occurred.

All this data pointed to one particular phenomenon that occurred at the time when huge ice floes began to end. The Earth is tilted to its maximum level of 24 degrees. Earth spins on its axis as if a rod ran through the center of the planet in the way that an axel connects two wheels. This explains why Earth spins like a top in space. The axis is tilted so that the North Pole and South Pole point toward or away from the sun as Earth orbits the sun. But Earth wobbles as it spins, so the tilt changes from a maximum of 24 degrees to a minimum of 22.5 degrees.

We all know that seasons change because of this tilt. When the Northern Hemisphere points towards the sun, it experiences summer. In winter it tilts away from the sun. When the Earth tilts at 24 degrees, days are longer and temperatures increase. Heavy snows taper off and the floes, or glaciers, begin to melt. When the Earth reaches its minimum tilt of 22.5 degrees, days are shorter and temperatures drop. Heavy snowfalls begin and a new Ice Age is born.

Once scientists dated the beginnings and endings of the different Ice Ages, they estimated that Ice Ages occur about every 100,000 years. But this information puzzled astronomers, geographers, and climatologists. Today the Earth's tilt causes the North Pole to point to Polaris, the North Star. Summer begins in June in the Northern Hemisphere, while the Southern Hemisphere experiences winter. In 10,000 years, the North Pole will point toward Vega, another star in our galaxy. At that point in time, winter in the Northern Hemisphere will begin in June and the Southern

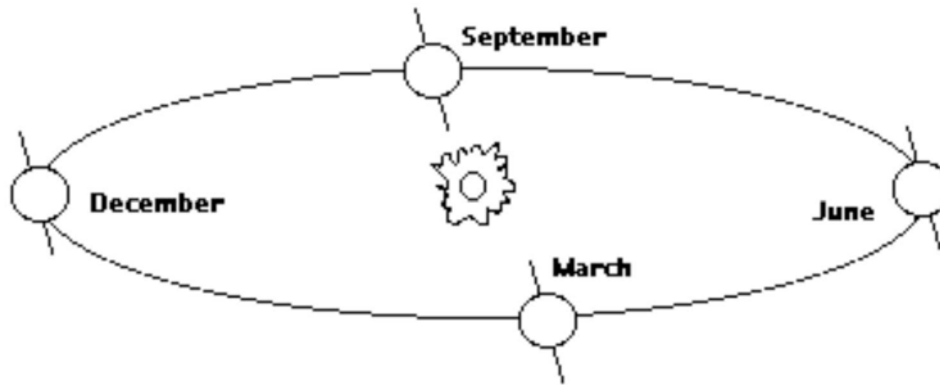


Image Credit: NASA/Goddard Space Flight Center

Hemisphere will enter the summer season. After another 10,000 years, the seasons will return to what we know when the North Pole once again points at Polaris. In other words, the change in tilt follows a cycle of 40,000 years, but Ice Ages occur about every 100,000 years.

Scientists went back to the core samples they had drilled out of the ocean floors and analyzed them more thoroughly. They discovered that Ice Ages reoccur about 100,000 years on average, but sometimes the cooling and warming cycle lasts as long as 120,000 years, while other cycles last only 80,000 years. The new theory about Ice Ages is that glaciers do not melt away during some periods when Earth is tilted furthest from the sun. Earth stays colder and glaciers last longer so that warm periods occur at longer intervals. Soil samples show that this phenomenon has only lately begun to happen in relation to the long history of Earth. What do they think might be causing these skips in the melting and freezing cycles? If these theories are true, when will the next Ice Age begin?

The last Ice Age glaciers finished melting about between 8,200 and 10,000 years ago. Earth has experienced a warm period scientists call the Holocene Period. Studies show that warm periods last only about 10,000 years, so some scientists believe that Earth will enter a new Ice Age in the near future. How soon will this new era happen? Scientists' best guesses are measured in one thousand year periods, or millennia. They estimate that the next Ice Age could begin in as little as one or two millennia from now. But remember that nature and the universe do not operate on a perfect timetable, so estimates for the next Ice Age vary greatly.

One factor that makes estimating the next Ice Age more difficult is the gradual cooling of our planet caused by the skips in melting and freezing cycles. Since glaciers last longer average temperatures are cooler and sometimes Ice Ages begin less often. If this is true, how does global warming affect the next Ice Age?

As temperatures rise, glaciers melt and the fresh water flows into the oceans. Seawater contains salt, so it is denser and heavier than fresh water. If today's glaciers melt enough, it will flow out onto the tops of the oceans. The water will be colder

than current seawater and ocean currents that flow like rivers will slow down greatly or will cease to move at all. Since warm seawater will not move around the planet warming the temperatures where it meets land, the climate will become colder. Colder temperature might cause an Ice Age to begin even earlier.

If we stop global warming, will Ice Ages also end? Scientists say that global warming is a minor factor in the overall scheme of things, so Ice Ages will continue. Solving global warming might help slow down the arrival of the next Ice Age. What else can people do to prevent another Ice Age? With current knowledge and technology, scientists say that not much can be done, but at least people have advance warning of what might happen. Governments would know when to begin making plans for avoiding the movement of the next hemisphere-wide glaciers.

Stormy Day

The brisk wind
whips through grass and tree
sending a cold chill
through my companion and me

The dry leaves soar
and rush to dusty earth
they dart and play
with merriment and mirth

The trees sway
and bend to touch the ground
their long fingers
scratch and claw around

The sky darkens
clouds gather and meet
a flash of bright light
followed by loud drumbeat

We dash along
dodging drops sloppy wet
enjoying the many hues
of autumn's color palette.



Answer Numbers 31 through 37. Base your answers on the article “Earth’s Tilt and Climate Change” and the poem “Stormy Day.”

- 31** If the article were reprinted in a science textbook, which title would be most accurate?
- (A) “Global Warming”
 - (B) “Earth’s Orbit and Rotation”
 - (C) “Ice Ages and Their Cycles”
 - (D) “The Changing Seasons”
- 32** Huybers and Wunsch can be called pioneers because
- (F) of their research on glaciers and the Ice Ages.
 - (G) of their drilling to recover core samples from beneath the ocean floor.
 - (H) of the new ideas they have presented about the Earth’s history.
 - (I) of their plans to help people survive the next Ice Age.
- 33** According to the article, why are oceans important to the study of Ice Ages?
- (A) Oxygen levels in the oceans help scientists date the times of various Ice Ages.
 - (B) Seawater contains chemicals that can identify ancient ocean life forms.
 - (C) Fossils from the oceans’ floors help identify the name of each Ice Age.
 - (D) Changes in ocean currents indicate when sea life was most abundant.
- 34** With which sentence would Huybers and Wunsch most likely agree?
- (F) The best way to prevent another Ice Age is to end global warming.
 - (G) Human beings cannot prevent Earth’s natural cycles of warming and cooling.
 - (H) Governments should take steps now so that people survive the next Ice Age.
 - (I) South America faces the greatest danger during Ice Ages.
- 35** What do global warming and Earth’s maximum tilt have to do with Ice Ages?
- (A) They both create conditions that can trigger an Ice Age.
 - (B) They are being studied by scientists around the world.
 - (C) They present dangers to scientists who study Ice Ages.
 - (D) They cause massive melting of glaciers at the end of an Ice Age.

- 36 In the poem, the narrator compares autumn leaves to
- (F) an artist who loves autumn best.
 - (G) an artist's paints.
 - (H) a very stormy day.
 - (I) a race during a thunderstorm.
- 37 Which phrase could be applied to Huybers, Wunsch, and the poet?
- (A) strong concentration on controlling our planet's natural forces
 - (B) artistic perception of nature's colors
 - (C) public concern about Earth's changing climate
 - (D) deep appreciation of the changes in Earth's climate

Read the following passage and answer questions 38 through 44.

How to Manage Your Time

For many high school students it seems that there is never enough time. Homework and studying are constant challenges. High school activities and sports help develop well-rounded individuals, yet they also take up a lot of time. Some students also work at part-time jobs or volunteer for service hours. You may feel that you can never get everything done or are always running late. There are several steps you can take to organize your time better.

First, make a to-do list every day. You may want to buy a student planner or appointment calendar. They make it easy to schedule any activities or meetings you may have in addition to assignments and homework. Be sure to set priorities. Do the most important tasks first. Then reward yourself once you have completed those tasks.

Use spare time wisely. Do you have a study hall or time spent traversing to and from school? Instead of wasting that time, read a book or begin a writing assignment. Those spare minutes can quickly add up. Also, do not be afraid to say "no." If a friend asks you to do something and you have assignments due, realize which is more important and arrange for a better time to see your friend.

Determine the time that is optimal for you to do certain things. If late-night reading lulls you to sleep, plan to read earlier in the day. If you are more of a morning person, try getting up an hour earlier and do schoolwork before school.

Review your notes every day. Don't wait until just before a test to try and remember everything. If you spend a few minutes at the end of every day going over what you learned, it will mean less time studying when it is time for the exam. It will

also allow you to ask your teacher questions or take advantage of extra help if you don't understand something thoroughly.

Get a good night's sleep. Studies have shown that getting enough rest helps your memory. When you are tired, everything seems more difficult and adds to your stress level. Don't try and catch up on sleep over the weekend. It is best to stay on a regular sleeping cycle as much as possible.

Tell your friends and family about your work schedule. Constant distractions will hinder your success. Explain that you will be working at certain times and ask them not to disturb you. Don't take phone calls during the time you set aside for work. You can call your friends later when it is more convenient for you.

Set realistic goals for yourself. If you try and accomplish too much, you may get frustrated when you can't get it all done. After planning and scheduling for a few weeks, evaluate what works and what doesn't. Determine whether you have given yourself enough time for what you want to do. Perhaps you can allot more time for some things and less for others.

Time Wasters	Time Savers
<ul style="list-style-type: none"> • A cluttered desk or workspace • Watching TV • Playing video games • Talking on the phone • Text-messaging • Checking e-mail too often • Worrying about getting things done 	<ul style="list-style-type: none"> • Create a master schedule to list all the things that you must do (classes, practices) • Establish a regular time and place for study • Take breaks: Work for 30 minutes at a time, then take short breaks • Use flash cards or summary notes for quick reviews

Answer Numbers 38 through 44. Base your answers on the article "How to Manage Your Time."

38 As it is used in the passage, *traversing* MOST nearly means

- (F) driving.
- (G) traveling.
- (H) crossing.
- (I) navigating.

39 Which sentence from the passage BEST reflects the main idea?

- (F) "Determine the time that is optimal for you to do certain things."
- (G) "First, make a to-do list every day."
- (H) "There are several steps you can take to organize your time better."
- (I) "If you try and accomplish too much, you may get frustrated when you can't get it all done."

- 40** Which BEST describes the way in which the passage is structured?
- (F) a conflict followed by a resolution
 - (G) chronological sequence of events
 - (H) main idea and personal anecdotes
 - (I) list of details proving an assertion
- 41** Which assertion is BEST supported by the evidence in the passage?
- (F) Begin with the least important tasks and work your way up to the most important.
 - (G) Stop participating in extra-curricular activities because they are not required.
 - (H) Catch up on sleep on the weekends if you can't get enough sleep during the week.
 - (I) Set priorities when scheduling your free time.
- 42** What is the MOST LIKELY reason readers should believe the author about the suggested study methods?
- (F) The author has talked to teachers and tutors.
 - (G) The author works at a tutoring service.
 - (H) The author has done a lot of research.
 - (D) The author is a testing specialist.
- 43** As it is used in the passage, *optimal* MOST nearly means
- (A) most desirable.
 - (B) quietest.
 - (C) quickest.
 - (D) most confusing.
- 44** What is the effect of having a cluttered desk or workplace, according to this author?
- (F) Your risk of failing a test will be greater.
 - (G) You'll waste time looking for what you need.
 - (H) You'll lose your most important sets of notes.
 - (I) Your mind will be occupied by the mess.

Read the following speech and answer questions 45 through 50.

Equal Rights For Women

by Shirley Chisholm

Address To The United States House of Representatives, Washington, DC: May 21, 1969



Mr. Speaker, when a young woman graduates from college and starts looking for a job, she is likely to have a frustrating and even demeaning experience ahead of her. If she walks into an office for an interview, the first question she will be asked is, "Do you type?"

There is a calculated system of prejudice that lies unspoken behind that question. Why is it acceptable for women to be secretaries, librarians, and teachers, but totally unacceptable for them to be managers, administrators, doctors, lawyers, and Members of Congress?

The unspoken assumption is that women are different. They do not have executive ability, orderly minds, stability, leadership skills, and they are too emotional.

It has been observed before, that society for a long time, discriminated against another minority, the blacks, on the same basis — that they were different and inferior. The happy little homemaker and the contented "old darkey" on the plantation were both produced by prejudice.

As a black person, I am no stranger to race prejudice. But the truth is that in the political world I have been far oftener discriminated against because I am a woman than because I am black.

Prejudice against blacks is becoming unacceptable although it will take years to eliminate it. But it is doomed because, slowly, white America is beginning to admit that it exists. Prejudice against women is still acceptable. There is very little understanding yet of the immorality involved in double pay scales and the classification of most of the better jobs as "for men only."

More than half of the population of the United States is female. But women occupy only 2 percent of the managerial positions. They have not even reached the level of *tokenism* yet. No women sit on the AFL-CIO council or Supreme Court. There have been only two women who have held Cabinet rank, and at present there are none. Only two women now hold ambassadorial rank in the diplomatic corps. In Congress, we are down to one Senator and 10 Representatives.

Considering that there are about 3½ million more women in the United States than men, this situation is outrageous.

It is true that part of the problem has been that women have not been aggressive in demanding their rights. This was also true of the black population for many years. They submitted to oppression and even cooperated with it. Women have done the same thing. But now there is an awareness of this situation particularly among the younger segment of the population.

As in the field of equal rights for blacks, Spanish-Americans, the Indians, and other groups, laws will not change such deep-seated problems overnight. But they can be used to provide protection for those who are most abused, and to begin the process of evolutionary change by compelling the insensitive majority to reexamine its unconscious attitudes.

It is for this reason that I wish to introduce today a proposal that has been before every Congress for the last 40 years and that sooner or later must become part of the basic law of the land — the equal rights amendment.

Let me note and try to refute two of the commonest arguments that are offered against this amendment. One is that women are already protected under the law and do not need legislation. Existing laws are not adequate to secure equal rights for women. Sufficient proof of this is the concentration of women in lower paying, menial, unrewarding jobs and their incredible scarcity in the upper level jobs. If women are already equal, why is it such an event whenever one happens to be elected to Congress?

It is obvious that discrimination exists. Women do not have the opportunities that men do. And women that do not conform to the system, who try to break with the accepted patterns, are stigmatized as “odd” and “unfeminine.” The fact is that a woman who aspires to be chairman of the board, or a Member of the House, does so for exactly the same reasons as any man. Basically, these are that she thinks she can do the job and she wants to try.

A second argument often heard against the equal rights amendment is that it would eliminate legislation that many States and the Federal Government have enacted giving special protection to women and that it would throw the marriage and divorce laws into chaos.

As for the marriage laws, they are due for a sweeping reform, and an excellent beginning would be to wipe the existing ones off the books. Regarding special protection for working women, I cannot understand why it should be needed. Women need no protection that men do not need. What we need are laws to protect working people, to guarantee them fair pay, safe working conditions, protection against sickness and layoffs, and provision for dignified, comfortable retirement. Men and women need these things equally. That one sex needs protection more than the other is a male supremacist myth as ridiculous and unworthy of respect as the white supremacist myths that society is trying to cure itself of at this time.

Answer Numbers 45 through 50. Base your answers on the article “Equal Rights for Women.”

- 45** For which audience does Ms. Chisholm address the above speech?
- (A) members of the United States Congress
 - (B) all of the citizens of her state of Texas
 - (C) the female citizens of the United States
 - (D) all of the citizens of the United States

- 46** Which BEST describes how this speech is structured?
- (F) an opinion followed by supporting details
 - (G) a list of the problems women face
 - (H) a problem followed by several solutions
 - (I) a sequence of historical events
- 47** Throughout the speech, the speaker uses examples to
- (A) compare two different ideas.
 - (B) explain an opposing viewpoint.
 - (C) convince people that she is right.
 - (D) help support her political party's opinion.
- 48** What is the MOST LIKELY reason Ms. Chisholm gave this speech?
- (F) She wanted to convince voters to elect more women to public office.
 - (G) She wanted to show that women deserve the same treatment under the law as men.
 - (H) She wanted to demand passage of a law apologizing for the way women had been treated.
 - (I) She wanted to prove that women have as much right to work as men.
- 49** As used in the passage, *tokenism* MOST nearly means
- (A) minimum.
 - (B) basic.
 - (C) requirement.
 - (D) symbolism.
- 50** The point of view used in the passage reveals the speaker's
- (F) distrust of men who are part of the U.S. Congress.
 - (G) feelings of inferiority.
 - (H) desire to prove her abilities.
 - (I) frustration with current conditions.

