

The radiation that _____ during the decay of radioactive atomic nuclei is known as gamma radiation.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. occurs
- B. have occurred
- C. occur
- D. are occurring

In recent years, economists around the world have created new tools that quantify the overall well-being of a country's citizens. Economists in India, for example, use an Ease of Living Index. This tool _____ economic potential, sustainability, and citizens' quality of life.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. measures
- B. had measured
- C. would have measured
- D. will have been measuring

Mathematician and meteorologist Edward Lorenz used the metaphor of the “butterfly effect” to explain how seemingly minor events can have major impacts on future weather. According to Lorenz’s metaphor, the wind from a butterfly flapping _____ in Brazil might eventually grow into a storm elsewhere across the globe.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. its wings
- B. its wings’
- C. it’s wing’s
- D. it’s wings’

In 1903, environmentalist John Muir guided President Theodore Roosevelt on a scenic, sprawling trip through California's Yosemite Valley. Upon returning from the three-day excursion, Roosevelt _____ to conserve the nation's wilderness areas, a vow he upheld for his remaining six years in office.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. is vowing
- B. vowed
- C. will vow
- D. vows

To survive when water is scarce, embryos inside African turquoise killifish eggs _____ a dormant state known as diapause. In this state, embryonic development is paused for as long as two years—longer than the life span of an adult killifish.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. enter
- B. to enter
- C. having entered
- D. entering

In 1637, the price of tulips skyrocketed in Amsterdam, with single bulbs of rare varieties selling for up to the equivalent of \$200,000 in today's US dollars. Some historians _____ that this "tulip mania" was the first historical instance of an asset bubble, which occurs when investors drive prices to highs not supported by actual demand.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. claiming
- B. claim
- C. having claimed
- D. to claim

Formed in 1967 to foster political and economic stability within the Asia-Pacific region, the Association of Southeast Asian Nations was originally made up of five members: Thailand, the Philippines, Singapore, Malaysia, and Indonesia. By the end of the 1990s, the organization _____ its initial membership.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. has doubled
- B. had doubled
- C. doubles
- D. will double

Atoms in a synchrotron, a type of circular particle accelerator, travel faster and faster until they _____ a desired energy level, at which point they are diverted to collide with a target, smashing the atoms.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. will reach
- B. reach
- C. had reached
- D. are reaching

Led by Syrian American astronomer Shadia Habbal, the Solar Wind Sherpas are an intrepid team of scientists who travel the globe to study solar winds, the streams of particles emanating from the Sun that are only visible from certain locations during a total solar eclipse. When such an eclipse is imminent, the Sherpas pack up their telescopes and _____ ready.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. get
- B. had gotten
- C. got
- D. were getting

Farouk El-Baz, a geologist and space scientist, _____ part of the team that selected the lunar landing sites for the Apollo program during the 1960s and 1970s.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. are
- B. was
- C. have been
- D. were

Obsidian is a kind of volcanic glass formed when lava cools so quickly that the atoms inside it cannot arrange themselves in a crystalline structure. You _____ more about obsidian's structure, which is classified as amorphous, in a later chapter.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. had learned
- B. had been learning
- C. will learn
- D. have learned

Public-awareness campaigns about the need to reduce single-use plastics can be successful, says researcher Kim Borg of Monash University in Australia, when these campaigns give consumers a choice: for example, Japan achieved a 40 percent reduction in plastic-bag use after cashiers were instructed to ask customers whether _____ wanted a bag.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. they
- B. one
- C. you
- D. it

Midway through her 1968 jazz album *A Monastic Trio*, Alice Coltrane switches instruments, swapping the piano for the harp. With the same fluid style that Coltrane was famous for on piano, she _____ her fingers across the harp strings and creates a radiant sound.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. sweep
- B. are sweeping
- C. were sweeping
- D. sweeps

Objects ranging from the Kikkoman soy sauce bottle to the Yamaha VMAX motorcycle to the Komachi bullet train _____ designed by twentieth-century industrial designer Kenji Ekuan.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. was
- B. is
- C. has been
- D. were

In the historical novel *The Surrender Tree*, Cuban American author Margarita Engle uses poetry rather than prose _____ the true story of Cuban folk hero Rosa La Bayamesa.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. tells
- B. told
- C. is telling
- D. to tell

Like other amphibians, the wood frog (*Rana sylvatica*) is unable to generate its own heat, so during periods of subfreezing temperatures, it _____ by producing large amounts of glucose, a sugar that helps prevent damaging ice from forming inside its cells.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. had survived
- B. survived
- C. would survive
- D. survives

While exploring Nevada's Gypsum Cave in 1930, Seneca and Abenaki archaeologist Bertha Parker made her most famous discovery: the skull of a now-extinct ground sloth (*Nothrotheriops shastensis*) alongside human-made tools. Parker's crucial finding was the first _____ humans in North America as far back as 10,000 years ago.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. places
- B. placed
- C. place
- D. to place

The sun never sets during the Arctic summer in the Far North. In response, reindeer in this region must change their sleep habits. Instead of resting when it gets dark, they rest when they need _____ their food.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. digest
- B. will digest
- C. to digest
- D. digesting

British scientists James Watson and Francis Crick won the Nobel Prize in part for their 1953 paper announcing the double helix structure of DNA, but it is misleading to say that Watson and Crick discovered the double helix. _____ findings were based on a famous X-ray image of DNA fibers, "Photo 51," developed by X-ray crystallographer Rosalind Franklin and her graduate student Raymond Gosling.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. They're
- B. It's
- C. Their
- D. Its

In order to prevent nonnative fish species from moving freely between the Mediterranean and Red Seas, marine biologist Bella Galil has proposed that a saline lock system be installed along the Suez Canal in Egypt's Great Bitter Lakes. The lock would increase the salinity of the lakes and _____ a natural barrier of water most marine creatures would be unable to cross.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. creates
- B. create
- C. creating
- D. created

The African Games Co-production Market, one of over 180 annual international conferences supporting video game development, _____ the growth of the African gaming industry by helping start-up studios in Africa find partners.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. promote
- B. are promoting
- C. promotes
- D. have promoted

The classic children’s board game Chutes and Ladders is a version of an ancient Nepalese game, Paramapada Sopanapata. In both games, players encounter “good” or “bad” spaces while traveling along a path; landing on one of the good spaces _____ a player to skip ahead and arrive closer to the end goal.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. allows
- B. are allowing
- C. have allowed
- D. allow

Literary agents estimate that more than half of all nonfiction books credited to a celebrity or other public figure are in fact written by ghostwriters, professional authors who are paid to write other _____ but whose names never appear on book covers.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. people's stories
- B. peoples story's
- C. peoples stories
- D. people's story's

In the early twentieth century, Joseph Kekuku and other Hawaiian _____ in the mainland United States to the bright and lilting sound of the *kīkā kīla*, or Hawaiian steel guitar. The instrument soon became a fixture in American blues and country music.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. musicians introduced audiences
- B. musicians' introduced audiences'
- C. musician's introduced audience's
- D. musicians' introduced audiences

Smaller than poppy seeds, tardigrades are tiny, but they are tough. These minuscule animals can survive for thirty years without food or water, and _____ can withstand extreme temperatures as low as minus 328 degrees and as high as 304 degrees Fahrenheit.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. that
- B. it
- C. they
- D. he

The US Geological Survey wants to map every human-made structure in the United States, and it is asking volunteers to help. Cassie Tammy Wang and Ashish D'Souza are just two of the many volunteer map editors who _____ to the project since it began in 2012.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. contribute
- B. will contribute
- C. have contributed
- D. will be contributing

In his groundbreaking book *Bengali Harlem and the Lost Histories of South Asian America*, Vivek Bald uses newspaper articles, census records, ships' logs, and memoirs to tell the _____ who made New York City their home in the early twentieth century.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. story's of the South Asian immigrants
- B. story's of the South Asian immigrants'
- C. stories of the South Asian immigrants
- D. stories' of the South Asian immigrant's

When writing *The Other Black Girl* (2021), novelist Zakiya Dalila Harris drew on her own experiences working at a publishing office. The award-winning book is Harris's first novel, but her writing _____ honored before. At the age of twelve, she entered a contest to have a story published in *American Girl* magazine—and won.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. were
- B. have been
- C. has been
- D. are

In winter, the diets of Japanese macaques, also known as snow monkeys, are influenced more by food availability than by food preference. Although the monkeys prefer to eat vegetation and land-dwelling invertebrates, those food sources may become unavailable because of extensive snow and ice cover, _____ the monkeys to hunt for marine animals in any streams that have not frozen over.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. forces
- B. to force
- C. forcing
- D. forced

Food and the sensation of taste are central to Monique Truong's novels. In *The Book of Salt*, for example, the exiled character of Binh connects to his native Saigon through the food he prepares, while in *Bitter in the Mouth*, the character of Linda _____ a form of synesthesia whereby the words she hears evoke tastes.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. experienced
- B. had experienced
- C. experiences
- D. will be experiencing

Earth is not a perfect sphere. Due to the _____ gravitational pull, Earth bulges out on the sides closest to and farthest from the Moon. This distorting pull is known as a tidal force, and it is responsible for the changes in water levels that are called high and low tides.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. Moon's
- B. Moons
- C. Moons'
- D. Moon

Richard Spikes was a prolific African American inventor known for his contributions to automotive engineering. Between 1907 and 1946, he patented many inventions, _____ an automobile turn signal, a safety brake, and—most famously—the first automatic gearshift.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. included
- B. includes
- C. including
- D. will include

Even though bats prefer very sweet nectar, the plants that attract them have evolved to produce nectar that is only moderately sweet. A recent study _____ why: making sugar is energy-intensive, and it is more advantageous for plants to make a large amount of low-sugar nectar than a small amount of high-sugar nectar.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. explains
- B. explaining
- C. having explained
- D. to explain

In the late 1960s, inspired in part by the sight of laundry hanging on a clothesline, African American abstract painter Sam Gilliam began to create his iconic “Drape” paintings. He applied bold, saturated hues to large canvases and _____ them from ceilings or walls, causing the drooping fabric to cascade in dramatic loops and curves.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. to have suspended
- B. suspending
- C. to suspend
- D. suspended

American poet Emily Dickinson wrote many of her poems on scraps of paper, but she also took steps to collect these works. From 1858 to around 1864, for example, she copied more than 800 of _____ into forty homemade booklets (known as fascicles).

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. them
- B. this
- C. that
- D. it

Scientists believe that, unlike most other species of barnacle, turtle barnacles (*Chelonibia testudinari*) can dissolve the cement-like secretions they use to attach _____ to a sea turtle shell, enabling the barnacles to move short distances across the shell's surface.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. it
- B. themselves
- C. them
- D. itself

Occupying a significant part of modern-day Nigeria, the Kingdom of Benin was one of the major powers in West Africa between the thirteenth and nineteenth centuries. It _____ ruled by Oba Ewuare I from 1440 to 1473.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. is
- B. will be
- C. has been
- D. was

In the 2011 documentary *The Barber of Birmingham*, civil rights activist James Armstrong recounts how his barbershop in Birmingham, Alabama, _____ as a political hub for members of the Black community during the 1950s.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. serving
- B. having served
- C. served
- D. to serve

Former First Lady of the United States Eleanor Roosevelt and Indian activist and educator Hansa Mehta were instrumental in drafting the United Nations' Universal Declaration of Human Rights, a document that _____ the basic freedoms to which all people are entitled.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. have outlined
- B. were outlining
- C. outlines
- D. outline

If simple sugars such as ribose and glycolaldehyde _____ Earth from elsewhere and survived impact—a possibility astrophysicist Nicolle Zellner outlined in a 2020 study—the sugars could have reacted with other molecules that were already present on the planet to form the nucleotides that are the structural components of RNA and DNA.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. reach
- B. had reached
- C. will reach
- D. are reaching

Photographer Ansel Adams's landscape portraits are iconic pieces of American art. However, many of the _____ of landscapes were intended not as art but as marketing; a concessions company at Yosemite National Park had hired Adams to take pictures of the park for restaurant menus and brochures.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. photographer's early photo's
- B. photographers early photo's
- C. photographer's early photos
- D. photographers early photos

Each year in the fall, when the weather starts to cool in the northern hemisphere, millions of North American monarch butterflies journey south. Searching for food and warmer habitats, they _____ thousands of miles—from as far north as Canada all the way down to Mexico—on this annual migration.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. flew
- B. were flying
- C. had flown
- D. fly

Wanda Diaz-Merced is an astrophysicist who lost her sight when she was young. Diaz-Merced's condition inspired her to develop software that can translate scientific data into sound. Sound-based tools _____ scientists to detect subtle patterns in data. Such patterns may not be evident in traditional graphs.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. has enabled
- B. enable
- C. is enabling
- D. enables

If you try on one of artist Nick Cave's signature Soundsuits, you can expect to swish, rustle, or clang every time you move. Cave makes his suits out of found objects, everything from ceramic birds to broken record players. He carefully considers the sound an object makes before using _____ in a suit.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. this
- B. that
- C. these
- D. it

In 1899, Swedish chemist Svante Arrhenius developed an equation to answer a long-standing question: why do chemical reactions speed up at higher temperatures? The Arrhenius equation, named for its creator, _____ an important concept in modern chemistry.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. have remained
- B. remain
- C. remains
- D. are remaining

In his 1963 exhibition *Exposition of Music—Electronic Television*, Korean American artist Nam June Paik showed how television images could be manipulated to express an artist's perspective. Today, Paik _____ considered the first video artist.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. will be
- B. had been
- C. was
- D. is

A member of the Cherokee Nation, Mary Golda Ross is renowned for her contributions to NASA's Planetary Flight Handbook, which _____ detailed mathematical guidance for missions to Mars and Venus.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. provided
- B. having provided
- C. to provide
- D. providing

Botanists recognize over fifty different species of sunflower. One species, the silverleaf sunflower, _____ both an early-flowering ecotype that tends to grow in coastal areas and a late-flowering ecotype that grows inland.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. having included
- B. including
- C. to include
- D. includes

In 1990, California native and researcher Ellen Ochoa left her position as chief of the Intelligent Systems Technology Branch at a NASA research center _____ the space agency's astronaut training program.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. to join
- B. is joining
- C. joined
- D. joins

Why are Rome's famous concrete structures, such as the Colosseum, still standing after 2,000-plus years, when modern concrete may not even last for fifty? Scientists _____ that the secret to Roman concrete's durability was its unique blend of ingredients, which included volcanic ash and seawater.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. explain
- B. having explained
- C. explaining
- D. to explain

For thousands of years, people in the Americas _____ the bottle gourd, a large bitter fruit with a thick rind, to make bottles, other types of containers, and even musical instruments. Oddly, there is no evidence that any type of bottle gourd is native to the Western Hemisphere; either the fruit or its seeds must have somehow been carried from Asia or Africa.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. to use
- B. have used
- C. having used
- D. using

In 1881, French chemist Camille Faure redesigned the rechargeable lead-acid battery. Faure's design greatly increased the amount of electricity that the original battery, which the French physicist Gaston Planté _____ fifteen years earlier, could hold.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. is inventing
- B. will invent
- C. invents
- D. had invented

The alga species *Chlorella vulgaris* is very efficient at making oxygen. For this reason, scientists are currently exploring ways to use this species in space. *C. vulgaris* might be used, for example, to build future biological air exchange systems that _____ oxygen for astronauts.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. are producing
- B. produced
- C. produce
- D. have produced

Dr. Rocío Paola Caballero-Gill is a paleoceanographer. This means that Dr. Caballero-Gill doesn't just study oceans as they are today. She uses chemistry and fossil evidence _____ oceans as they were in the past.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. has studied
- B. to study
- C. studied
- D. studies

With its towering, six-spired exterior of granitelike quartz monzonite, the Salt Lake Temple is one of the most instantly recognizable structures in the state of Utah. However, many people do not know that _____ built over the course of forty years, with construction beginning in 1853 and ending in 1893.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A. it was
- B. one was
- C. they were
- D. both were