

Paragraph

► Dunes are defined as mounds, or hills of sand that are built up by either wind or water flow. While dunes have been observed underwater, for practical reasons, sand dune tracking is done on dry ground. These dunes can be found along some coastal areas, usually in single or multiple sets that are parallel to the shore and directly inland from the beach. However, the largest accumulations of dunes have been discovered in dry areas, often deserts, further inland. The vast majority of these inland dunes have formed in and around lake or seashores that dried up long ago.

► Since the structure of sand dunes is heavily influenced by wind direction and speed, along with the amount of sand present, dunes are not uniform in shape or size. In areas where the wind blows in one direction, sand dunes often form in long straight or curved lines. Winds that blow in from multiple directions will change this basic shape by depositing or eliminating curves or by pushing the sand upward to enhance the height of the dune instead of its width.

► Ridge dunes form where there are large amounts of sand, generally in the interiors of deserts, and winds blow in one direction. Under these conditions, parallel ridges of sand, known as transverse dunes, form at right angles to the wind. Because they form perpendicular to the blowing of the wind, ridge or linear, dunes create wavy ridges at the top. This formation makes ridge dunes less stable than other types of dunes, and creates the potential of ridge dunes breaking down into crescent dunes over time.

► When the direction of the wind changes so that it blows from different directions, star-shaped dunes form from the accumulation of sand in dune interiors. Star-shaped dunes are relatively stable dunes that can reach incredible heights in some deserts, and are quite common in massive deserts such as the Sahara. The reason that these dunes reach such high altitudes is that the multidirectional winds prevent the dunes from spreading out too far in any one direction, instead pushing the sand upward. Usually star-shaped dunes resemble a pyramid in shape, with angled faces on at least three of the arms that extend from the center of the mound. Because of the way they are formed, star-shaped dunes are considered to be the tallest dunes on Earth; the Badain Jaran Desert in China contains the highest dunes to be measured, at up to 500 meters tall.

► Crescent dunes form when the wind blows in one direction. As their name suggests, crescent dunes are typically curved, and are molded into shape by winds that blow consistently from the same direction. In general, crescent dunes are wider than they are long. These dunes, which are also known as barchan dunes, are less stable than star-shaped dunes and can shift as much as 20 meters per year as winds blow over the outer curves of the crescent in the direction of the pointed end. Dunes in Egypt and China have been documented as moving more than 100 meters per year.

► Sand dunes perform several functions necessary for ecological balance. For example, dunes found along coastlines act as natural barriers against coastal areas that may be hit by storm waves rushing inland. Dunes in many locations are also home to a variety of plants and animals, and many of these areas are quite rare and face extinction if their dune habitats are destroyed, which makes their destruction due to the expanding use of dune areas by people an important environmental concern.

► The disappearance of sand dunes becomes more common year after year, as the increasing world population compels people to take over areas once considered uninhabitable. Either the dunes are leveled in order to make room for homes or recreational use, or they are destroyed to prevent their sand from blowing into areas now developed for people. A prime example of this is Golden Gate Park in San Francisco. Called the largest man-made park in the world for decades after its construction, Golden Gate Park was built atop an area of sand dunes that stretched for miles. Initially promoted as a project to provide more recreational space for the city's residents, the area where it was built was deliberately chosen to encourage housing developments in order to expand the city westward.

Directions: Select the appropriate ideas from the answer choices, and match them to the appropriate type of dune. TWO of the answer choices will not be used. **This question is worth 3 points** (3 points for 5 correct answers, 2 points for 4 correct answers, 1 point for 3 correct answers, and 0 points for 2, 1, or 0 correct answers).

ridge dunes	•
star-shaped dunes	•
crescent dunes	•

Answer Choices (choose 5 to complete the table):

- (1) usually have greater width than length
- (2) do not always retain their original dune formation
- (3) have a U-shaped form that is very stable
- (4) form when winds from various directions blow over large volumes of sand
- (5) most commonly occur near oceans
- (6) are characterized by wavy ridges
- (7) can shift large distances over time

Paragraph

► Since English is the current *lingua franca*—the accepted language of global communication, especially in areas of commerce and political discourse—its origins and development are of interest to a widespread audience. English originated from a collection of Germanic dialects, which eventually evolved into a primarily Germanic language with substantial contributions from both Latin and Greek roots. Over the centuries, as English speakers began to travel abroad, and settle in other parts of the world, the language was influenced by other nearby languages, such as French, Spanish, and Italian—known as the “Romance languages”—along with those that were not Latin-based, such as Japanese and Arabic.

► The etymologies of many English words today can be traced back to their word parts in their original language, particularly those of Latin, Greek, or Germanic origin. These word parts can consist of: a prefix, a word part that precedes the main part of the word; the root, the part that contains the primary meaning of the word; and a suffix, the part attached to the end of the word. By understanding the meaning of each word part, one can frequently determine the meaning of the whole word. For example, the root part is “bi/o,” which means “the study of.” When one combines this suffix with the root “bio,” which means “life” or “living” to form the word “biology,” it conveys the meaning of “the study of life” or “the study of living things.” When this suffix is connected to the root “graph” (“writing”), it means “the study of writing.” In turn, if the root “graph” is joined to the prefix “auto,” which means “self,” it creates “autograph,” literally “self writing.” “Auto,” “bio,” and “graph” are also connected to form the English term “autobiography,” a story that is written about one’s own life, as opposed to “biography,” which is a story an author writes about another person’s life.

► However, not all etymologies are as easily traceable; some modern words owe their meaning to the context in which they were originally used or to the traditions from which they first came, rather than from their original language. One such word is “escape,” which derives from Latin and literally meant “out of cage.” Centuries ago, in Roman times, capes were a common piece of clothing worn, draped around the shoulders or neck, by men. When Roman men were being pursued by their enemies, their enemies would grab onto the Roman’s capes in an attempt to catch and hold onto the men. The Romans, however, would slip out of their capes and run away, thus “escaping” from their enemies and avoiding capture. Another example is the word “cheer,” which originates from the Greek word for “face.” The expressions “cheer up” and “be of good cheer” began as a way to encourage people to wear happy expressions on their faces, but expanded over time to now convey a more general sense of encouragement. Likewise, the word “ballot,” which refers to a small piece of paper on which a voter chooses to cast their vote in an election, is related to its original definition “small ball or pebble” through tradition, not its precise meaning. In earlier times, Italians used a tiny ball or pebble called a “ballot” in the Italian language to cast their vote. As the voting process modernized to include paper ballots and voting by electronic means, the term “ballot” retained the primary meaning of its original function, but not its literal meaning.

► Still other words English have strayed even farther from their original connotations. In English, the term “hazard” is defined in modern times as “danger,” yet this is a connotation that developed gradually. The word itself comes from the Arabic “al zahr,” meaning “dice,” which refers to the use of dice in games of chance and the practice of various games while gambling in Arabic-speaking nations that involved the use of dice. “Al zahr” was commonly called out in Arabic as the dice were tossed. English speakers of the time adapted the sound “al zahr” to “hazard.” As time passed, the term “hazard” came to first signify the dangers of playing dice games, since these games often also included the risks associated with losing money or goods while gambling. Over time, the term evolved to mean a general sense of danger. Another word that has taken a surprising detour from its original connotation is the term “nice.” This word, which today means “kind” or “pleasant,” once meant “foolish” or “ignorant.” Through a diverse history of twists and turns, some of which are difficult to track, the definition evolved into its current meaning.

GLOSSARY

1. etymology—the study of the origins, history, and meanings of words or a description of the origins of a particular word

2. dice—two or more small blocks of wood, plastic, etc. usually with a different number of spots on each side, used in games

Directions: Select the appropriate phrases from the answer choices and match them to the pairs of words to which they relate. TWO of the answer choices will not be used. **This question is worth 3 points** (3 points for 5 correct answers, 2 points for 4 correct answers, 1 point for 3 correct answers, and 0 points for 2, 1, or 0 correct answers).

graphology and autobiography	•
escape and ballot	•
hazard and nice	•

Answer Choices (choose 5 to complete the table):

- (1) meanings are disconnected from the original definition of the words
- (2) meanings were originally derived from the Romance languages
- (3) meanings can be understood by knowing the meanings of prefixes, suffixes, and roots
- (4) are not based on the literal meanings of the words
- (5) meanings are based on word parts from Latin, Greek, or Germanic languages
- (6) have origins that cannot be currently tracked in the English language
- (7) meanings can be traced back to the traditional sense of the word