# Passage 1-EL Nino and the Southern Oscillation

Para 1 Between the ocean surface and the atmosphere, there is an exchange of heat and moisture that depends, in part, on temperature differences between water and air. Even a relatively small change in surface ocean temperatures could modify atmospheric circulations and have far-reaching effects on global weather patterns.

1. The word "relatively" the passage is closest in meaning to

1. comparatively
2. usually
3. extremely
4. surprisingly

Para 2 Along the west coast of South America, where the cool Peru Current sweeps northward, southerly winds promote upwelling (rising to the surface and flowing outward) of cold, nutrient- rich water that gives rise to large fish populations, especially anchovies. The abundance of fish supports a large population of seabirds whose droppings (ale guano) produce huge phosphate rich- deposits that support the fertilizer industry. Near the end of the calendar year, a warm current of nutrient-poor tropical water often moves southward, replacing the cold, nutrient-rich surface water.

2. According to paragraph 2,which of the following normally occurs along the west coast of South America each year?

1. The temperature of surface water changes.
2. Southerly winds reverse and blow northward.
3. Southerly winds cause nutrient-rich cold water to sink downward
4. The Peru Current reverses direction and flows southward

Para 3 In most years, the warming lasts for only a few weeks to a month on more, after which weather patterns usually return to normal and fishing improves. However, when conditions last for many months, and a more extensive ocean warming occurs, the economic results can be catastrophic This extremely warm episode, which occurs at irregular intervals of two to seven years and covers a large area of the tropical Pacific Ocean, is now referred to as a major El Nino event, or simply El Nino.

Para 4 During a major El Nino event, large numbers of fish and marine plants may die. Dead fish and birds may litter the water and beaches of Peru; their decomposing bodies reduce the water's oxygen supply, which leads to the bacterial production of huge amounts of hydrogen sulfide. The El Nino of1972-1973 reduced the annual Peruvian anchovy catch from 10.3 million metric tons in 1971 to 4.6 million metric tons in 1972. Since much of the

harvest of this fish is converted into fish meal and exported for use in feeding livestock and poultry, the world's meal production in 1972 was greatly reduced. Countries such as the United States that rely on meal for animal feed had to use soybeans as an alternative This raised poultry prices in the United States by more than 40 percent.

3. According to paragraph4,which of the following occurs during a major El Nino event?

1. Many birds leave the area because fish and plant foods die
2. The water is richer in oxygen than usual.
3. Bacteria produce a great deal of hydrogen sulfide.
4. New plant species start to inhabit the areas where some marine plants died.

4. In paragraph4,why does the author mention that poultry prices in the United States increased by 40 percent in 1972?

1. To show what happened when people in Peru switched from eating fish to eating poultry during the El Nino event
2. To provide evidence that the El Nino event of 1971-1972 Was much more severe than the El Nino event of1972-1973
3. To demonstrate how wide reaching the economic effects of a major El Nino event can be
4. To argue that the United States should not have used soybeans as an alternative to fish meal for animal feed

Para 5 Why does the ocean become so warm over the eastern tropical Pacific? Normally in the tropical Pacific Ocean, there are the trades-**persistent** winds that blow westward from a region of higher pressure over the eastern Pacific toward a region of lower pressure centered near Indonesia. The trades create upwelling that brings cold water to the surface. As this water moves westward, it is heated by sunlight and the atmosphere. Consequently, in the Pacific Ocean, surface water along the equator usually is cool in the east and warm in the west. In addition, the dragging of surface water by the trades raises the sea level in the western Pacific and lowers it in the eastern Pacific which produces a thick layer of warm water over the tropical western Pacific Ocean and a weak ocean current (called the counter current) that flows slowly eastward toward South America.

5. The word "**persistent**" in the passage is closest in meaning to

1. strong
2. seasonal
3. warm
4. continuous

6. According to paragraph 5,all of the following are true of the trade winds EXCEPT:

1. They blow from the eastern Pacific west toward Indonesia
2. They originate in regions of low pressure.
3. They lead to warm surface water in the western Pacific.
4. They contribute to an increase in sea level in the western Pacific.

Para 6 Every few years, the surface atmospheric pressure patterns break down as air pressure rises over the region of the western Pacific and falls over the eastern Pacific. This change in pressure weakens the trades, and, during strong pressure reversals, east winds are replaced by west winds. The west winds strengthen the counter current, causing warm water to head eastward toward South America over broad areas of the tropical Pacific. Toward the end of the warming period, which may last between one and two years atmospheric pressure over the eastern Pacific reverses and begins to rise, whereas, over the western Pacific, it falls. This seesaw pattern of reversing surface air pressure at opposite ends of the Pacific Ocean is called the Southern Oscillation. Because the pressure reversals and ocean warming are more or less simultaneous, scientists call this phenomenon the El Nino/ Southern Oscillation, or ENSO for short. Although most ENSO episodes follow similar evolution, each event has its own personality, differing in both strength and behavior.

7. According to paragraph 6, what happens when the trade winds weaken and are replaced by west winds?

1. The warming period comes to an end.
2. Warm water is pushed away from South America.
3. The counter current gets stronger.
4. Broad areas of the tropical Pacific get cooler

8. According to paragraph 6, which of the following is true of ENSO episodes?

1. They all begin in a similar way but vary in force as they develop
2. They generally last for more than one or two years.
3. They cause temperatures to increase in both the east and the west of the Pacific
4. They cause a warming period to come to an end more quickly.

9. Look at the four squares [] that indicate where the following sentence can be added to the passage.

**To explain this, one must first understand why ocean temperatures are typically so cool.**

Para 5 Why does the ocean become so warm over the eastern tropical Pacific? **[ ]**Normally in the tropical Pacific Ocean, there are the trades-**persistent** winds that blow westward from a region of higher pressure over the eastern Pacific toward a region of lower pressure centered near Indonesia. **[ ]** The trades create upwelling that brings cold water to the surface. **[ ]**As this water moves westward, it is heated by sunlight and the atmosphere. **[ ]**Consequently, in the Pacific Ocean, surface water along the equator usually is cool in the east and warm in the west. In addition, the dragging of surface water by the trades raises the sea level in the western Pacific and lowers it in the eastern Pacific which produces a thick layer of warm water over the tropical western Pacific Ocean and a weak ocean current (called the counter current) that flows slowly eastward toward South America.

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Wind , surface ocean, temperatures, argue interact in the Pacific to create far-re climate

Answer Choices

A. Winds along the west coast of South America blow in the same direction that the Peru Current moves in, thereby cooling surface waters along the coast

B. Some ENno events have lasted so long and spread over such a large area that they have destroyed fisheries along the west coast of the United States.

C. When normal wind patterns reverse in the Pacific, warm surface water in the western Pacific flows eastward until the atmospheric pressure reverses again

D.EI Nino events are extensive periods of warming along the coast of South America that occur when warm tropical water along the west coast of South America re places colder, coastal water.

E. The trade winds usually keep surface water cool in the eastern Pacific and warm in the western Pacific, but changes in atmospheric pressure can Weaken these winds.

F. Atmospheric pressure in the Pacific reverses in a wide variety of situations, but it is especially likely to happen while an El Nino event is occurring

# Passage 2 Greek Art in the Classical Age

Para 1 Greek art is thought to have reached its peak during the Classical period in the fifth century B.C.E. Leading up to this period, the most common type of sculpture were the kouroi, which were life-size or larger marble statues of nude males that stood on sacred sites, often as grave markers, but also as offerings to the gods.With very stiff, straight poses (they evidently were modeled after Egyptian statues) it is clear that kouroi were not intended to look like real people. However, by the early fifth century, the style of Greek artwork changed. The transition is usually symbolized by the Kritios Boy, a marble statue found in the center of ancient Athens and attributed to Kritios, a sculptor active in Athens around 490-460 B.C.E. It is dated by experts to just before 480 B.C.E. and represents Callias a victor in the boys' footrace in an athletic competition. The changes from the traditional kouros are slight, but the boy is standing as a boy might actually stand, the right leg forward of the left, which bears the weight of the body so that the right can relax slightly not how artistic convention decrees a hero should pose. Yet this naturalness is achieved without the loss of an idealization (representation as perfect) of the human body. Here is, in the words of the art historian Kenneth Clark."The first beautiful nude in art." As John Boardman, an authority on Greek art, puts it: "This is a vital novelty in the history of ancient art-life deliberately observed, understood, and copied. After this all becomes possible."

1. The word "sacred" in the passage is closest in meaning to

1. special
2. highly visible
3. ancient
4. holy

2. Why does the author mention when discussing the Kritios Boy statue that "the boy is standing as a boy might actually stand " ?

1. To support the point that the difference between the Kritios Boy statue and the traditional kouros is only slight
2. To emphasize that the Kritios Boy statue represents a victor in a boys' footrace
3. To explain how the Kritios Boy statue reflects a significant change in the style of Greek artwork
4. To suggest that the sculptor Kritios intended the sculpture to be an idealization of the human body

3. Which of the following can be inferred from paragraph about Greek artistic traditions before the fifth century B.C.E.?

1. Artists carved images of heroes who stood in very stiff, straight poses.
2. Greek statues looked less like Egyptian statues than they did after the fifth century B.C.E.
3. Sculptors observed and copied the appearance of individual real people.
4. Sculptures were much larger than real people were because they represented Greek gods.

Para 2 There are a few clues as to why this revolution in art, from the stylized to the observed, took place. One is that bronze was becoming the most popular medium in which statues were being created. (It has been suggested that the Kritios Boy is a copy of a bronze original now lost.) The technical problems involved in casting and **assembling** bronze statues had been solved by the end of the sixth century B.C.E. as the earliest examples show. From the Classical period on bronze predominated in Greek sculpture, but as almost every statue was later melted down so its metals could be reused it is hard to guess this today. The few bronzes to survive (the Riace warriors, the Delphi charioteer and the majestic Zeus found in shipwreck off Cape Artemisium foremost among them) simply highlight what has been lost in quantity and quality. Bronze allowed far greater flexibility in modeling the process of building up a figure in bronze is totally different from cutting into marble. As a wonderful exhibition at the Royal Academy in London in 2012, Bronze, also showed bronze can be burnished (smoothed and shined) to produce a wide variety of aesthetic effects that pure white marble lacks.

4. The word "assembling" in the passage is closest in meaning to

1. putting together
2. supporting
3. moving
4. planning

5. According to paragraph 2,why are there relatively few surviving bronze statues such as " the Riace warriors, the Delphi charioteer and the majestic Zeus found in shipwreck off Cape Artemisium"?

1. Production of such statues was very rare from the Classical period on.
2. Greek sculptors were unable to make many statues of such unusually high quality.
3. The metals used to make such statues were difficult to work with
4. Most bronze statues were destroyed so that the materials they were made of could be used again.

6. According to paragraph 2, which of the following was one important advantage of using bronze to make statues?

1. Greek sculptors were already familiar with using bronze because it had long been the most popular medium for creating statues.
2. Using bronze allowed Greek sculptors to make larger sculptures than they made before the Classical period.
3. Bronze offered sculptors greater flexibility in creating and shaping a figure than marble did.
4. Bronze required less burnishing than marble did

Para 3 The revolution also suggests a preoccupation with human form. While earlier Greek artists were focused on those few human beings who had become heroes, they now seemed concerned with the physical beauty of human beings as an end in itself. It is hard to see the Riace warriors without being aware of their intense sensuality. Yet within a few years this sensuality fades and is replaced by a greater concentration on the nature of the human body as an ideal. **It was the sculptor Polycleitos, probably a native of Argos working from the fifth into the fourth century B. C.E., who allied aesthetics with mathematics when he suggested that the perfect human body was perfect precisely because it reflected ideal mathematical proportions that were capable of being discovered.** One of his statues, the Doryphoros, or "spear bearer"(originally in bronze, but now known only through Roman copies in marble), was supposed to represent this ideal. If this approach was followed to its extreme, all statues would have had the same, perfect, proportions but the Greeks could not close their eyes to the variety of human experience. There always remained a tension in the art of the period between the abstract ideal of the human body and a particular body copied by the artist. This may be one reason for its aesthetic appeal.

7. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

1. The first person capable of discovering the ideal mathematical proportions of the human body was probably the sculptor Polycleitos.
2. The sculptor Polycleitos suggested that it might be possible to make the human body more perfect by allying aesthetics with mathematics.
3. The discovery of ideal mathematical proportions led the sculptor Polycleitos to suggest that the human body was perfect.
4. The sculptor Polycleitos believed that the reason the perfect human body was perfect had to do with ideal mathematical proportions that could be discovered

8. According to paragraph 3, which of the following is probably a reason for the aesthetic appeal of Greek statues from the Classical period?

1. They were all very similar in their proportions.
2. They combined both idealized and realistic elements.
3. Sculptors were trained in mathematics as well as art.
4. Classical sculptors copied the statues from earlier periods.

9. Look at the four squares[ ]that indicate where the following sentence can be added to the passage.

**The young man represented in Kritios's sculpture is indeed very good-looking.**

Where would the sentence best fit?

Click on a square[] to insert the sentence in the passage

Para 1 Greek art is thought to have reached its peak during the Classical period in the fifth century B.C.E. Leading up to this period, the most common type of sculpture were the kouroi, which were life-size or larger marble statues of nude males that stood on sacred sites, often as grave markers, but also as offerings to the gods.With very stiff, straight poses (they evidently were modeled after Egyptian statues) it is clear that kouroi were not intended to look like real people. However, by the early fifth century, the style of Greek artwork changed. The transition is usually symbolized by the Kritios Boy, a marble statue found in the center of ancient Athens and attributed to Kritios, a sculptor active in Athens around 490-460 B.C.E. **[ ]**It is dated by experts to just before 480 B.C.E. and represents Callias a victor in the boys' footrace in an athletic competition. **[ ]**The changes from the traditional kouros are slight, but the boy is standing as a boy might actually stand, the right leg forward of the left, which bears the weight of the body so that the right can relax slightly not how artistic convention decrees a hero should pose. **[ ]**Yet this naturalness is achieved without the loss of an idealization (representation as perfect) of the human body. Here is, in the words of the art historian Kenneth Clark."The first beautiful nude in art." **[ ]**As John Boardman, an authority on Greek art, puts it: "This is a vital novelty in the history of ancient art-life deliberately observed, understood, and copied. After this all becomes possible."

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Greek sculpture underwent important changes around the fifth century B.C.E

Answer Choices

A. New kinds of sculpture that appeared during Greece's Classical period represented Greek gods as well as victors of various athletic competitions.

B. Before the fifth century B.CE.. Greek sculptures commonly resembled Egyptian statues, representing men in

stylized, straight postures that were not meant to appear lifelike.

C. The revolution that occurred in the artwork of Classical Greece was partly the result of a new level of attention to representing the details of human bodies as they appear in real life.

D. Marble became the most popular medium of Greek art during the Classical period due to a need to melt down bronze sculptures and reuse the metal for other purposes.

E. The adoption of bronze as a material for making sculptures was a significant factor in allowing the sculpture of Classical Greece to reach new heights of artistic excellence.

F By the end of the Classical period, Greek sculptors mainly produced statues of perfect human bodies that represented idea mathematical shapes. rather than of particular individuals.

# Passage 3 Bat Diets

**Paragraph 1**

One of the most dramatic measures of the diversity of bats is the variety of food they consume. Although some 600 species eat insects as the main dietary staple, others live on fruit, nectar and pollen, fish, frogs, birds, small mammals, blood, and even other bats. Most of this diversity occurs in the tropics, although many bats from temperate regions vary their diets by eating a wide range of insects.

1. **According to paragraph 1, which of the following statements describes the diet of bats in tropical regions?**
2. Bats in tropical regions consume more plant life than animal life.
3. Bats in tropical regions consume less food than bats in other regions do.
4. Bats in tropical regions are more likely to consume insects than are bats in other regions.
5. Bats in tropical regions consume more different kinds of food than do bats in other regions.

**Paragraph 2**

What any bat eats is determined by two important factors: the need for enough energy to keep the body going and the need for essential chemicals to maintain it. Just as an automobile requires fuel to move and lubricants to keep the engine running smoothly, animals require protein, carbohydrates, or fat for energy along with vitamins and minerals to stay healthy. Since it is essential for bats to consume enough calories to make flight, reproduction, growth, and other bodily functions possible, it is easy to see why such variety is necessary in their diets. Species that feed mainly on plant products require protein, which can be obtained by eating animals (insects), pollen (which provides only moderate amounts of protein),or large quantities of fruit (a very limited source of protein). Bat feeding on insects appear to obtain a balanced diet from this source of nutrition.

1. **According to paragraph 2, which of the following food items provides the most complete source of nutrition for bats?**
2. Pollen B. Insects C. Fruit D. A combination of fruit and pollen

**Paragraph 3**

To obtain the energy and chemicals they need, bats consume vast quantities of food. Small insectivorous species (species that eat mainly insects)eat at least 30 percent of their body weight each night they are active, and in nursing mothers the amount may exceed 50 percent. These figures appear to apply to all bats, regardless of diet. It may not be impressive to learn that a little brown bat eats three grams of insects on a summer night, but to find 150 mosquitoes in its stomach certainly is, especially when you realize they are not an entire night's ration and the bat probably caught them in less than fifteen minutes. The most impressive statistic of insect consumption comes from Texas, where it is estimated that a local population of Mexican free-tailed bats eats slightly more than 6,000 tons of insects each summer.

1. **Paragraph 3 supports which of the following generalizations about bats' diets?**
2. Females consume more than twice the weight of food that male bats consume.
3. Free-tailed bats consume a greater quantity of food in a summer than do other types of bats.
4. Whether a bat eats fruit, fish, or insects, it needs to consume at least 30 percent of its body weight in food each night it feeds.
5. The types of food that bats eat have less nutritional value than the types of food eaten by most other animals.

**Paragraph 4**

The basic design of a bat imposes certain restrictions on the range of food available to it. Bats determine the direction and distance of objects in their environment by emitting high-pitched sounds and interpreting their echoes to find their location-the term for this is echolocation. Because they can echolocate, New World leaf-nosed bats that feed mainly on fruit are able to catch insects to supplement their diet with protein. **■**Flying foxes (a species of bat found mainly in Indonesia and Malaysia)and their relatives, however, do not echolocate and must obtain their protein from something other than insects. **■**Recent studies in the lvory Coast by the Canadian biologist Donald Thomas suggest that several species of the herbivorous bat family pteropodidae get their protein from the fruit that composes the main part of their diet. **■**The levels of protein in the fruit are low, but this is countered by the consumption of large quantities of fruit and by enzymes in the digestive tract that efficiently extract what little protein is available. **■**Size is also a factor in determining the diet of a bat; a 3-gram butterfly bat has fewer prey species from which to choose than a 40-gram,large slit-faced bat. As a rule, smaller bats are almost entirely insectivorous, and larger species include larger prey in their diet, readily switching to small vertebrates such as fish, birds, and frogs. The smallest bats that feed on plant material are nectar-and pollen-feeders. Larger species more often feed on fruit but may also supplement their diet with nectar and pollen.

1. **The word "supplement" in the passage is closest in meaning to**
2. Replace B. add to C. control D. modify
3. **What can be inferred from paragraph 4 about echolocation in bats?**
4. Very few bats have the ability to echolocate.
5. Only bats that echolocate are able to catch insects.
6. Echolocation is most helpful for finding fruit and plants.
7. Only bats that echolocate are able to consume enough protein.
8. **In paragraph 4, the author discusses echolocation in order to make which of the following points?**
9. Bats are more successful predators than other flying animals are
10. Bats are able to supplement their main diets with protein.
11. Bat design affects the types of food that a bat typically eats.
12. The diets of larger bats tend to be more varied that those of small bats.
13. **According to paragraph 4, how do species of the pteropodidae family get enough protein?**
14. By consuming only the types of fruit that are highest in protein.
15. By using echolocation to find the most protein-rich food sources.
16. By consuming large quantities of fruit that are efficiently digested.
17. By occasionally including the fruit-based diet.

**Paragraph 5**

The food selected by bats also depends on where they feed. Flying bats chasing flying insects will not catch scorpions that do not fly, but they often snatch spiders ballooning on pieces of web. Bats feeding on stationary or terrestrial prey often catch resting insects that are able to fly. Bats concentrating their feeding activity over water catch more aquatic insects than those feeding high over the forest, and species hunting over water have opportunities to catch fish not available to high-flying species that visit the water only to drink.

1. **Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? incorrect choices change the meaning in important ways or leave out essential information.**
2. Unlike high-flying bats, bats that feed close to the water catch many fish and aquatic insects.
3. Bats that feed over the water must concentrate in order to catch more aquatic insects and fish than high-flying bat species.
4. High-flying bat species visit the water only to drink and do not catch fish or insects near the water.
5. High-flying bat species concentrate on aquatic insects and fish only when forest insects are not available.
6. **Look at the four squares ■ that indicate where the following sentence could be added to the passage. Where would the sentence best fit?**

**So how do bats that do not hunt insects obtain enough protein?**

**Paragraph 4**

The basic design of a bat imposes certain restrictions on the range of food available to it. Bats determine the direction and distance of objects in their environment by emitting high-pitched sounds and interpreting their echoes to find their location-the term for this is echolocation. Because they can echolocate, New World leaf-nosed bats that feed mainly on fruit are able to catch insects to supplement their diet with protein. **■**Flying foxes (a species of bat found mainly in Indonesia and Malaysia)and their relatives, however, do not echolocate and must obtain their protein from something other than insects. **■**Recent studies in the lvory Coast by the Canadian biologist Donald Thomas suggest that several species of the herbivorous bat family pteropodidae get their protein from the fruit that composes the main part of their diet. **■**The levels of protein in the fruit are low, but this is countered by the consumption of large quantities of fruit and by enzymes in the digestive tract that efficiently extract what little protein is available. **■**Size is also a factor in determining the diet of a bat; a 3-gram butterfly bat has fewer prey species from which to choose than a 40-gram,large slit-faced bat. As a rule, smaller bats are almost entirely insectivorous, and larger species include larger prey in their diet, readily switching to small vertebrates such as fish, birds, and frogs. The smallest bats that feed on plant material are nectar-and pollen-feeders. Larger species more often feed on fruit but may also supplement their diet with nectar and pollen.

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**Bats consume a wide variety of food, including insects, plant products, and other animals.**

1. Bats must consume large quantities of food, including protein，in order to obtain enough energy for flight and other essential bodily functions.
2. Bats that feed only on plants have special digestive enzymes in their stomachs to help them extract enough protein from food.
3. High-flying bats hunt different prey than do bats that fly over water，and small bats have a different diet than larger bats do.
4. Bats that eat insects generally require far less food each night than do bats that eat plants, necta, and pollen.
5. The ability to echolocate, or locate objects by interpreting echoes, helps many bats to find moving prey.
6. Most bats feed in areas where water is plentiful because insects, fish, and other potential food sources tend to frequent these areas.