

Paragraph

Camouflage

- ▶ Most people recognize camouflage for its utility as military protection. Camouflage is widely used to disguise soldiers on the front lines of a conflict from their opponents, and therefore, save the lives of the soldiers. However, camouflage as protection for soldiers is a relatively recent military innovation, and one that originated through imitating nature.
- ▶ Camouflage did not originate with humans; rather, it is a highly varied adaptation copied from nature. As with many ideas that are considered modern and innovative, the concept of camouflage came about from observing how animals acted in the wild. As animals, insects, and other species evolved, weaker, slower prey developed creative means to avoid the predators that chased and killed them. For example, certain animals change their coats, the fur covering their skin, while other species take on the appearance or even sometimes the behavior of their predators to evade capture and death.
- ▶ Camouflage is one of the most effective ways for animals to avoid attack in the treeless Arctic. However, the summer and winter landscapes there are so diverse that a single protective color scheme would, of course, prove ineffective in either one season or the other. Thus, many of the inhabitants of the Arctic tundra change their camouflage twice a year. The arctic fox is a clear-cut example of this phenomenon: it sports a brownish-gray coat in the summer which then turns white as cold weather sets in, and the process reverses itself in the springtime. Its brownish-gray coat blends in with the barren tundra landscape in the months without snow, and the white coat naturally blends in with the landscape of the frozen winter tundra.
- ▶ Camouflaging falls under three broad categories: mimesis, crypsis, and dazzling, each of which provides a distinct advantage to the creature who has a specific adaptation, and each of which has evolved within particular species based on their requirements for survival. In mimesis, which is also referred to as "masquerade," the entire animal is disguised as some other creature or object which is of no interest to its enemy, such as when a grasshopper mimics an edible dry leaf. While mimesis is commonly practiced by animals targeted for prey, there are instances when a predator will take advantage of it; for example, the flower mantis, an insect, can successfully replicate the appearance of a certain flower, which allows this predator to draw in and devour its prey. The advantage of mimesis is that it allows animals to hide as they move around in the open.
- ▶ Crypsis is a more diverse form of camouflage than mimesis. Crypsis allows the animal to hide by blending in with the background, making it extremely difficult to perceive the animal, especially when it stays still. Many insects and reptiles have this adaptation, changing color to blend into a background of leaves, trunks, or desert rocks. There are several other ways, in addition to changing color to melt into the background, that crypsis works in the wild. Animals such as leopards and giraffes use disruptive patterning, the bold marks on their coat, to blend into the trees of the forest or jungle. Other animals have evolved in such a way that they can eliminate the shadow from around their bodies; shadow is a definite indicator of the presence of an animal or object and may be a key element that predators track. The horned lizard, for instance, has developed a wide and flat body that allows it to lie virtually undetected against the ground of its natural habitat.
- ▶ Dazzling is a less common form of camouflage than mimesis and crypsis that allows the animal to hide while in motion. Dazzling resembles the disruptive patterning of crypsis, but serves as a greater advantage to animals while they move. Whereas disruptive patterns may make an animal such as a giraffe more conspicuous when in motion, dazzling creates an illusion of distance and speed, a clear advantage for an animal being chased. Perhaps the most well-known example of an animal that makes use of dazzling is the zebra. It is often fairly simple to spot a single zebra while it is standing still. However, the distinctive black and white stripes can create a tremendous amount of confusion for a hunter pursuing a fleeing herd of zebras. In a large group, the pattern of each zebra's stripes blends in with the stripes of the zebras around it, thus making it difficult for the predator to select a specific target, thus allowing the striped animals a greater chance of escape.

1. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 7? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ Evolution resulted in strengthening aggressive animals and insects.
 - Ⓑ Evolution of vulnerable species resulted in protective adaptations.
 - Ⓒ A variety of species developed predatory abilities.
 - Ⓓ By observing other species, weak animals and insects developed creative defense strategies.
2. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 7? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ Opposite conditions in summer and in winter necessitate different protective coloration for Arctic animals.
 - Ⓑ The coloration of the summer and winter landscapes in the Arctic fails to protect the Arctic tundra.
 - Ⓒ In a single season, protective coloring schemes are ineffective in the treeless Arctic.
 - Ⓓ For many animals, a single protective coloring scheme effectively protects them during summer and winter months.
3. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 6? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ Mimesis is a popular strategy for predators, such as the flower mantis, who can more easily see their prey when they take on the appearance of particular flowers.
 - Ⓑ Mimesis is usually used by animals being hunted, but sometimes hunters are able to employ the adaptation, as when the flower mantis disguises itself as a flower to catch its victim.
 - Ⓒ Both predators and prey use mimesis as a means of disguise: the flower mantis is the most successful animal at disguising itself to catch its prey.
 - Ⓓ Mimesis is generally used by prey to escape their predators; when predators such as the flower mantis use mimesis, the prey trap and eat the hunter.
4. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 6? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ A zebra in a large group is specifically targeted by predators due to its individual pattern of stripes.
 - Ⓑ Zebras can sometimes escape their pursuers because the pattern of stripes of the herd mixes together and confuses predators.
 - Ⓒ Predators have difficulty finding a herd of zebras because their stripes blend into the background.
 - Ⓓ The combined patterns of zebras' stripes can give the predators a greater chance of choosing the ones that can't escape.

Paragraph

Post-it® Notes

- ▶ One of the world's most well-known, and seemingly simple, products took several years and a series of unexpected yet fortunate events to come to light. The start of what would become Post-it® Notes came in the late 1960s at the 3M company in Minnesota quite by accident. Researchers at 3M were working on developing different types of adhesives, and one particularly weak adhesive, a compound of acrylate copolymer microspheres, was formulated. Employees at 3M were asked if they could think of a use for weak adhesive, which, provided it did not get dirty, could be reused. For several years the adhesive was shelved, as employees of the organization could not find a suitable, marketable use for the sticky substance. Yet, the mild adhesive stayed on the workers' minds, and years later, their persistence would pay off.
- ▶ It wasn't until the mid-seventies that a 3M researcher thought of a practical and convenient use for the adhesive. Tired of losing his place in a book he used often, the researcher suggested his associate's sticky innovation could be applied to a piece of paper to be used as a bookmark that would stay in place in a book. Another use was found when the product was attached to a report that was to be sent to a coworker with a request for comments on the report; the colleague made his comments on the paper attached to the report and returned the report. Thus, the idea for Post-it® Notes was born.
- ▶ It was decided within the company that there would be a test launch of the product in 1977 in four American cities. Sales of this innovative product in test cities were less than stellar, most likely because the product, while innovative, was also quite unfamiliar. A final attempt was then made in the city of Boise to introduce the product. In this attempt, 3M salesmen gave demonstrations of the product in offices throughout Boise while simultaneously offering free samples of the sticky notes to their audiences. When the salesmen returned a week later to the sites where the product had initially been demonstrated and handed out, a huge percentage of the office workers, having noted how useful the tiny adhesive pieces of paper were, showed great interest in purchasing the Post-it® Notes.
- ▶ Interestingly, the use of yellow for the early notes also came about through chance. In their rush to test the original paper, 3M employees picked up scrap paper that had been discarded by another department and applied the adhesive to the back of the sheets. When testing and first taking the product to market, the company continued the use of canary yellow as the color of the notes, perhaps for consistency's sake, or perhaps because the bright color made it easy to distinguish when laid against the typical white of most book and report pages of the era.
- ▶ Over time, 3M came to understand the huge potential of this new product, and over the next few decades more than 400 varieties of Post-it® products—in varying colors, shapes, and sizes—have been promoted, most with success that has paralleled the original product's showing in Boise. Other competitors noticed the remarkable success of the Post-it® products as well. When 3M's original patent on Post-it® expired in the 1990s, rival companies flooded the market with products similar to those 3M had exclusively marketed for years. While the competitors are allowed to replicate the formula and general design of Post-it® Notes, there are two elements of the product that are off-limits: the name Post-it®, which has been copyrighted by 3M, and the initial color of original Post-it®, canary yellow, which 3M also claims sole use of.
- ▶ Today, the use of Post-it® Notes has expanded beyond their primary functions as a convenient marker for extra notes and memos, and a placeholder for readers. Artists of all types have imagined diverse roles for the notes and have made them the central components of more than one art exhibit. The tiny colorful pieces of paper have been used to create art images, or served as the canvasses for portraits and murals. In the early 2000s, the play *Inside a Biggie Box* was opened in conjunction with an international art show consisting entirely of works inspired by or created with Post-it® Notes.

5. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 1? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ Of the many adhesives that were being developed at 3M, one was not a particularly strong adhesive.
 - Ⓑ Researchers at 3M spent many years trying to develop a really weak adhesive.
 - Ⓒ Numerous weak adhesives resulted from a program to develop the strongest adhesive of all.
 - Ⓓ Researchers were assigned to develop different types of uses for acrylate copolymer microspheres.
6. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 2? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ The 3M company suggested applying for a patent on the product in a report prepared by a colleague.
 - Ⓑ One unexpectedly discovered use for the adhesive was in sending and receiving notes attached to documents.
 - Ⓒ A note was attached to a report asking for suggestions for uses of one of 3M's products.
 - Ⓓ A colleague who developed the new product kept notes with suggestions by other workers.
7. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 3? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ When the salesmen went back to the places where they had demonstrated Post-it® Notes, they discovered that many office workers had already purchased the product.
 - Ⓑ Though office workers found the small adhesive notes to be useful, the salesmen left after demonstrating and handing out the product.
 - Ⓒ Salesmen who showed the Post-it® Notes and left samples for office workers returned a week later to sell the product.
 - Ⓓ Many office workers wanted to buy the practical tiny sticky notes that salesmen had demonstrated and left samples of a week earlier.
8. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 5? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ The company tested the canary yellow color, but ultimately decided to continue to sell the notes in white, which was easier to distinguish at that time.
 - Ⓑ The canary yellow color showed itself to be popular in tests for books and reports, so the company used the same color for the Post-it® Notes when they first went to market.
 - Ⓒ The company had a choice of colors for the first Post-it® Notes but decided to use the bright yellow paper it had first chosen, since it would be consistent.
 - Ⓓ The company kept using the bright yellow for Post-it® Notes, even when the product was first sold, possibly because it wanted to keep the same color or maybe because it was a good contrast color for the notes.
9. Which of the sentences below best expresses the essential information in the highlighted sentence in paragraph 5? *Incorrect choices change the meaning in important ways or leave out essential information.*
 - Ⓐ Although competitors can replicate Post-it® Notes, they must change the colors and names of their products so they are not the same as those of 3M.
 - Ⓑ Competitors can use the same adhesive and shape of Post-it® Notes, but they are not allowed to use the name or the yellow color, both of which belong to 3M alone.
 - Ⓒ Competitors can produce notes like Post-it® Notes, but they cannot use the name, color, shape, or formula of the original.
 - Ⓓ Because Post-it® Notes are so competitive, only the shape and adhesive remain the same; the yellow color and name has changed.