Why do authors choose the words they do? This question isn’t as simple as it seems.

- Sometimes authors choose words to convey a **technical meaning**. Subject areas in science, math, and engineering express ideas using technical words and phrases.
- At other times, they select words for their **connotative meaning**. A word chosen for its connotation expresses not just an idea but also a feeling.
- And authors can use and combine words to produce a **figurative meaning**. These are words or phrases that express ideas in creative, unusual, or unexpected ways.

**Underline words in the diagram below with technical, figurative, or connotative meanings.**

The huge black eyes seem borrowed from the face of a space alien.

The wicked speed of the wings allows the wasp to snatch up its meal and dart away like a thief.

The female wasp’s ovipositor, or egg-laying organ, is found in the abdomen. It also functions as a stinger to paralyze and kill prey.

**The chart shows phrases from the diagram with each type of meaning. Complete the chart.**

<table>
<thead>
<tr>
<th>Example</th>
<th>Type of Meaning</th>
<th>Why the Author Uses It</th>
</tr>
</thead>
<tbody>
<tr>
<td>“snatch up its meal”</td>
<td>connotative</td>
<td>to suggest that the wasp takes the meal suddenly, perhaps rudely</td>
</tr>
<tr>
<td>“ovipositor, or egg-laying organ, is found in the abdomen”</td>
<td>technical</td>
<td>to communicate precisely which part of the wasp is being described</td>
</tr>
<tr>
<td>“eyes seem borrowed from the face of a space alien”</td>
<td>figurative</td>
<td>to suggest that the eyes seem strange, or eerie</td>
</tr>
</tbody>
</table>

Paying attention to the different types of meaning will help you understand how the author thinks and feels about a topic. For example, you might guess that the author of the diagram has some scientific knowledge about wasps—but also finds them rather unnerving!
Don’t Let the Bedbugs Bite  by Nick Marcus

Bedbugs are a nuisance that spread quickly, so if you find bedbugs in your home, you owe it to yourself and others to take decisive and immediate action.

The scientific name for these tiny, bloodsucking insects is Cimex lectularius. They’re called bedbugs because they mainly feed on blood at night while their hosts are asleep. They are like an army of minuscule vampires. Places like mattresses, couches, and chairs serve as luxurious havens in which thousands of them can live.

The bedbug inserts a syringe-like proboscis through the host’s skin. It takes between three and ten minutes for the bug to drink its fill through this slender appendage. Its bite is small and painless, so the victim rarely wakes during this feeding time. Bedbugs are not known for disseminating disease, but the bumps they leave behind can become infected. Also, the saliva they release into the skin can make you itch so badly you’ll want to scratch your skin off.

(continued)

Explore how to respond to this prompt: “The underlined words and phrases in the passage express technical, connotative, and figurative meanings. Determine the meaning of each word or phrase as it is used in the passage.”

The technical word is proboscis. You can use context clues in the passage to figure out and describe what it means. Use the chart below to determine the meaning of proboscis.

<table>
<thead>
<tr>
<th>Word</th>
<th>Context Clues</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proboscis</td>
<td>“syringe-like,” “through the host’s skin,” “drink its fill,” “slender”</td>
<td>A proboscis is a needle-like structure on the bedbug’s head that it uses to pierce skin and drink blood</td>
</tr>
</tbody>
</table>

Next, consider the connotative meaning of the word victim, which the author uses to describe the person being bitten. What does the word victim suggest about both the person and the bedbug?

The word victim suggests that the person being bitten is helpless and the bedbug is bad or evil.

Finally, the phrase “scratch your skin off” is figurative. What does this phrase help the reader understand about the itch caused by a bedbug’s bite?

The phrase suggests how strong and painful the itch caused by a bedbug bite can be.
Continue reading the account about bedbugs. Use the Close Reading and Hint to help you answer the question.

(continued from page 88)

Bedbug infestations can appear to be a blanket of crawling pinholes that cover the place where you rest. The teensy pests often hitch rides on suitcases left in hotel rooms and travel home with unwitting victims, so keep your luggage off the floor when you travel, and wash your clothes in hot water when you get home.

Use a flashlight and magnifying glass to scrutinize your mattress. If you find any evidence of bedbugs, destroy the mattress immediately and call a professional exterminator. You owe it to neighbors and fellow travelers not to spread the bedbug headache.

Circle the correct answer.

Which statement best describes the impact of the author’s word choice on the overall tone of the account?

A. Phrases like teensy pests and hitch rides give the whole account a humorous tone.

B. Words like rest, travel, and neighbors give the account a comforting tone.

C. The words evidence and professional exterminator are used to create a threatening tone.

D. Words with technical meanings create an informative tone, but phrases like crawling pinholes add a note of disgust.

Show Your Thinking

Explain which words and phrases helped you figure out the intended tone of the account.

Answers will vary. The sentence best describes the impact of word choice in creating an informative yet slightly negative and disgusted tone.

With a partner, discuss which words in this part of the account have connotative meanings and how they contribute to establishing the author’s attitude toward bedbugs.
The Goliath Beetle  by Eleanora Inez

1  Named for the biblical giant Goliath, the Goliath beetle is the most colossal, brawniest, and heftiest kind of beetle in the world. Goliath beetles grow to a length of up to eight inches and may weigh as much as three and a half ounces. Most Goliath beetles are as large as a mouse. They have distinct vertical black bands, like the bars of a prison door, on the elytra that cover their wings. Some species may also have bright yellow, red, gray, or brown markings.

2  The Goliath beetle lives in flowers in the tropical rain forests of Africa. Goliath beetles have fearsome jaws that they use to slash, impale, and chomp food. Adult beetles primarily feed on sugary tree sap and fruit. Goliath beetles also have six powerful legs with sharp claws that can grip. The Goliath beetle uses its claws to gather food and to climb. In addition, the Goliath beetle has a pair of front and a pair of rear wings attached to its thorax. When it flies, it sounds like the whirl of a helicopter propeller.

3  Unlike other kinds of beetles, the Goliath beetle undergoes a metamorphosis—a four-stage process of change. This process takes place as the beetle develops. During the first stage, a female Goliath beetle lays its eggs in rotting wood or decaying plants. Once an egg hatches, the wormlike larva feeds on the wood or plant material until it is fully grown. The larva wraps itself in a cocoon like a suit of armor to protect itself. Then the pupa lives in the cocoon during the third stage. After several months, the cocoon breaks apart. An adult Goliath beetle steps forth to find a mate, and the four steps in the life cycle of a Goliath beetle are repeated.

4  Goliath beetles are truly the giants of the insect world, and their formidable presence leaves a lasting impression on those who view them.
Use the Hints on this page to help you answer the questions.

1. Why has the author chosen to include the word *metamorphosis* in the text?
   - **A** It highlights the comparison between the beetle and a helicopter.
   - **B** It describes a biological process that the beetle undergoes.
   - **C** It expresses the author's objectivity about an unusual insect.
   - **D** It explains why scientists are impressed with the beetle's life cycle.

2. Which of the following is an example of the author using words that have a violent connotation?
   - **A** She describes the vertical black bands on the elytron that cover Goliath beetles' wings.
   - **B** She compares the Goliath beetle cocoons to suits of protective armor.
   - **C** The author details the four stages of the Goliath beetle's life cycle.
   - **D** She writes that Goliath beetles use their jaws to slash, impale, and chomp food.

3. Describe the overall tone of the account and the word choices the author uses to convey it. Cite at least three specific examples from the text to support your response.

   The author's overall tone is one of awe and wonder. She uses words like colossal, brawniest, and heftiest to describe the Goliath beetle, and these words have a mighty and powerful connotation. Her use of the simile "like a suit of armor" suggests her admiration for this large creature.
Lesson 10  Part 1: Introduction
Analyzing Text Structure

Authors "build" their texts carefully, the way carpenters build a house. Like a carpenter, a writer first chooses his or her materials. In this case, though, the materials are the ideas that will be used to develop a topic.

The way the author decides to organize those ideas—the text structure—determines how each part supports and relates to others; it also brings meaning to the whole text. Sections, chapters, and even paragraphs in a book or magazine must all be arranged in a logical way.

Think about the kind of text structure that might be used in each chapter shown in the Table of Contents below. Also consider how the chapters themselves are organized.

Study the chart below, and note the description of each text structure. Think about how each structure might be used to present the central idea in a piece of writing.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronological</td>
<td>presents steps or events in time order</td>
</tr>
<tr>
<td>Problem-Solution</td>
<td>describes a problem along with solutions</td>
</tr>
<tr>
<td>Cause-Effect</td>
<td>shows how one event makes other events happen</td>
</tr>
<tr>
<td>Compare-Contrast</td>
<td>points out similarities and differences between two or more subjects</td>
</tr>
</tbody>
</table>

When you read a text, remember that the author has made choices about the organization of ideas. Use the text structure to help you understand the relationships between ideas, which all help develop the central idea. Each chapter, section, or paragraph has a role to play.
Read the first three paragraphs of a scientific article about the discovery of DNA.

from “The Discovery of DNA’s Structure”

They were hardly modest, these two brash young scientists who in 1953 declared . . . that they had “found the secret of life.” But James Watson and Francis Crick’s claim was a valid one, for they had in fact discovered the structure of DNA, the chemical that encodes instructions for building and replicating almost all living things.

Watson and Crick’s discovery didn’t come out of the blue. As early as 1943 Oswald Avery proved what had been suspected: that DNA . . . carries genetic information. But no one knew how it worked.

Then, in 1951 at] King’s College in London, Rosalind Franklin and Maurice Wilkins were studying DNA. Wilkins and Franklin used X-ray diffraction as their main tool—beaming X-rays through the molecule yielded a shadow picture of the molecule’s structure. . . . (continued)

Explore how to answer these questions: “What seems to be the main text structure in this article? Why has the author chosen it?”

The way ideas in a text are organized helps you know what to expect and what is most important. Text structures may present events in simple time order, or they may compare and contrast details, describe causes and effects, or explore problems and their solutions.

Reread the passage, looking for hints to the text structure. Then complete the chart, explaining why you think the author chose that structure.

<table>
<thead>
<tr>
<th>Central Idea</th>
<th>Structure</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ideas of many scientists came together, leading to the discovery of DNA’s structure.</td>
<td>Chronological</td>
<td>to tell what events led to the discovery of DNA’s structure</td>
</tr>
</tbody>
</table>

With a partner, discuss the text structure of the passage, explaining why it is a good choice for an article about the discovery of DNA’s structure. Also discuss how and why the structure of the first paragraph differs from the others.
Continue reading about the discovery of DNA. Use the Close Reading and the Hint to help you answer the question.

(continued from page 96)

Referring to Franklin’s X-ray image known as “Exposure 51,” James Watson is reported to have said, “The instant I saw the picture, my mouth fell open and my pulse began to race.” Shortly after, Watson and Crick made a crucial advance when they proposed that the DNA molecule was made up of two chains paired in such a way to form a double helix, like a spiral staircase.

For their work, Watson, Crick, and Wilkins received the Nobel Prize in 1962. Despite her contribution to the discovery of DNA’s helical structure, Rosalind Franklin was not named a prize winner. She had died of cancer four years earlier, at the age of 37.

Hint

Pay attention to the events described in the two paragraphs. How do they relate to ideas in earlier paragraphs?

Circle the correct answer.

How does the information in these paragraphs contribute to the central idea of the article?

A. It emphasizes why Franklin and Wilkins believed that the X-ray image would inspire other scientists.
B. It explains the makeup of the DNA image known as “Exposure 51.”
C. It proves the accuracy of the author’s claim that the young scientists were quite brash.
D. It shows how the scientists depended on each other’s work to make their final discovery.

Show Your Thinking

How does the text structure help support the author’s main point about the discovery of DNA?

The author begins by presenting the solution to a problem and then uses sequence to tell how the work of different scientists led to the discovery of DNA’s structure.

Discuss with a partner why the author ended the article with a sentence about Rosalind Franklin’s death. How did this affect the text structure, and what final point did the author make by doing so?
It's All in Our DNA  by Max West

1. Kate's mother, father, and three brothers all have brown eyes and brown hair, but Kate has blue eyes and red hair. She is her parents' biological child, so why does she look so different?

2. Kate knows that the genes we inherit from our parents create our physical traits. Why wouldn't the genes that caused the rest of her family to have brown eyes and brown hair create the same result in her? Some traits are dominant, which means brown hair wins out over red, and brown eyes over blue. But those genes only increase the chances of children inheriting the dominant traits. Sometimes recessive genes can surface instead, creating someone like Kate: the first red-headed family member in generations.

3. A very simple trait that our genes, or DNA, determine early on in our development is whether we are male or female. As a fetus grows, it is female unless the SRY gene on the Y chromosome is activated. By the time a child is born, a female has two X chromosomes, and a male has one X and one Y chromosome.

4. DNA also determines eye color. This might sound like a simple process, but eye color is caused by at least four genes. Eye color is called a "complex trait" because several different genes work together to create the final result. Scientists can analyze these multiple genes and classify a person into one of three groups of eye color: light, dark, or hazel.

5. Scientists hope that the information they're gathering about DNA can help them solve complex problems in the future. By isolating genes that make us vulnerable to certain diseases, for example, those diseases might be avoided. At the very least, scientists might be able to analyze the DNA of someone like Kate and determine early in life if she is prone to a particular illness. If she is, then precautions can be taken to prevent that illness from developing. The more we understand how DNA makes us who we are, the more we'll be able to take care of ourselves and our loved ones in the future.
Hints
Is the author listing events in time order, comparing and contrasting ideas, giving a problem and solution, or telling how one thing causes another?

What problem does the final paragraph focus on?

Look back at the clues you underlined for the paragraph you chose. How do they help develop the author's central idea?

Use the Hints on this page to help you answer the questions.

1. How does the text structure in the second paragraph contribute to the account as a whole?
   A. The author uses cause and effect to explain how genes can cause some family members to have different traits from the others.
   B. The author lists the sequence of events that allows recessive genes to surface instead of dominant ones.
   C. The author presents the problem of people like Kate not knowing why they look different and then gives the solution.
   D. The author compares and contrasts brown-eyed and brown-haired individuals with those that have blue eyes and red hair.

2. The author uses a problem-and-solution text structure in the final paragraph to communicate which of the following important ideas?
   A. Kate might have other genetic traits in common with her parents.
   B. Understanding how DNA works might help us take precautions against some illnesses.
   C. If people learn they're prone to certain diseases, they can prepare for the worst.
   D. Studying DNA can allow people to control the hair and eye color of future generations.

3. Choose either the first, the third, or the fourth paragraph. Explain how the paragraph you choose contributes to the author's development of ideas. Use at least two specific details from the text in your response.

   First paragraph uses compare contrast.
   It contrasts Kate's physical features with those of her family to emphasize the differences.