

LEARNING OUTCOMES

- > Understand assumptions
- > Take notes by marking important information
- > Distinguish voice in quotations
- > Use past perfect
- > Identify and correct sentence fragments
- > Write a summary paragraph

 Go to **MyEnglishLab** to check what you know.

Genius: Nature or Nurture?

1

FOCUS ON THE TOPIC

1. Why are some people geniuses and others are not? Does the environment a person is raised in create a genius (nurture), or was the person simply born that way (nature)?
2. What would it be like to be a genius? Describe the advantages and disadvantages.

2 FOCUS ON READING

READING ONE | A Genius Explains

VOCABULARY

- 1 Read this piece about Daniel Tammet, who is considered by many to be a genius. Being a genius does not mean that all aspects of your life are easy or even that you are good at everything. Daniel is very successful with some things but challenged by others. Pay attention to the boldfaced words.

Autism and autistic spectrum disorder (ASD) are names given to groups of complex developmental disorders involving the brain. Some of the symptoms of these disorders are problems with verbal and non-verbal social **interaction**, the display of repetitive behavior, and an inability to be **flexible**. Many people with ASD **compensate** for these challenges and are able to be high-functioning and lead “typical” lives. Others are more **disabled** by the disorder.

ASD is an umbrella term that includes many subcategories. One subcategory is autistic **savant**. Psychologists **estimate** that 10 percent of people with ASD have some savant abilities. An autistic savant is a person with an unusual ability, skill, or knowledge that is much more developed than that of an average person. Many savants are able to **retain** large amounts of information in their memory. For example, some autistic savants can recite entire dictionaries or telephone books word-for-word. Others are able to draw detailed maps of an area after flying over it once in a helicopter. Although autistic people with savant abilities have these specific skills, they may have difficulty with other types of mental or physical tasks.

Daniel Tammet is an autistic savant. For Daniel, as for many people with ASD, leading a **predictable** life has many **benefits**. In other words, life is easier for him if it has structure and routine. If it does not, he may become **anxious**. One of Daniel’s special abilities is in mathematics. He is able to solve complex math problems almost immediately. When he does this, he sees each number he is calculating as an **image**. These images transform into a third image, which is the sum.

Why autistic savants have these **astounding** abilities is a question that still has no definitive answer.

2 Complete the sentences with the words from the boxes.

compensate

estimate

retain

1. No one is sure of the exact number of autistic savants with extraordinary abilities there are in the world, but experts _____ that there are fewer than 100.
2. Studies indicate that one hemisphere of a savant's brain may _____ for damage to the other hemisphere.
3. With the number of passwords needed for everyday life, it is sometimes difficult to _____ all of them in your memory.

anxious

disabled

flexible

predictable

4. Children may feel _____ about their first day in a new school because they don't know what to expect.
5. For me, it is very hard to change my plans because I am not very _____.
6. Although savants have amazing abilities and knowledge, in other areas of their lives they may be _____.
7. Because I know him so well, Sam's reaction to my suggestion was very _____.

astonishing

benefit

image

interaction

savant

8. It is sometimes hard for people who are shy to engage in social _____, especially with people they don't know well.
9. Daniel Tammet's ability to instantaneously solve complex mathematical problems is _____.
10. A(n) _____ can exhibit amazing mental powers and is able to memorize huge amounts of information.
11. One _____ of my new job is health insurance, and another is two weeks of paid vacation.
12. Even though Daniel had not been to Paris in many years, he still had a clear _____ in his mind of what his hotel looked like.

PREVIEW

You are going to read an article about Daniel Tammet, an autistic savant. Before you read, look at the statements. Check (✓) three things about Daniel that you think you will read in the article.

- | | |
|---|--|
| _____ 1. He can't drive a car. | _____ 4. He has lots of friends. |
| _____ 2. He has trouble remembering things. | _____ 5. He has invented his own language. |
| _____ 3. He loves going to the beach. | _____ 6. He lives with his parents. |

READ

Read the article about Daniel Tammet on the next page. Create a chart like the one below to take notes.

TAKE NOTES	
Main Ideas	Details
Tammet is good at math and counting	started after epileptic fit at age 3 obsessed with counting – even counts stitches figures out cube roots quickly sees numbers as shapes, colors + textures
Tammet is an autistic savant	extraordinary mental abilities most struggle with language - not Daniel created own language speaks 8 languages incredible memory

 Go to **MyEnglishLab** to view example notes.

A GENIUS EXPLAINS

By Richard Johnson



Daniel Tammet

- 1 **D**aniel Tammet is talking. As he talks, he studies my shirt and counts the stitches. Ever since the age of three, when he suffered an epileptic fit¹, Tammet has been obsessed with counting. Now he is twenty-six and a mathematical genius who can figure out cube roots quicker than a calculator and recall pi to 22,514 decimal places. He also happens to be autistic, which is why he can't drive a car, wire a plug, or tell right from left. He lives with extraordinary ability and disability.
- 2 Tammet is calculating 377 multiplied by 795. Actually, he isn't "calculating": there is nothing conscious about what he is doing. He arrives at the answer instantly. Since his epileptic fit, he has been able to see numbers as shapes, colors, and textures. The number two, for instance, is a motion, and five is a clap of thunder. "When I multiply numbers together, I see two shapes. The **image** starts to change and evolve, and a third shape emerges. That's the answer. It's mental imagery. It's like maths without having to think."
- 3 Tammet is a "**savant**," an individual with an **astonishing**, extraordinary mental ability. An **estimated** 10 percent of the autistic population—and an estimated 1 percent of the non-autistic population—have savant abilities, but no one knows exactly why.
- 4 Scans of the brains of autistic savants suggest that the right hemisphere might be **compensating** for damage in the left hemisphere. While many savants struggle with language and comprehension (skills associated primarily with the left hemisphere), they often have amazing skills in mathematics and memory (primarily right hemisphere skills). Typically, savants have a limited vocabulary, but there is nothing limited about Tammet's vocabulary.
- 5 Tammet is creating his own language, strongly influenced by the vowel and image-rich languages of northern Europe. (He already speaks French, German, Spanish, Lithuanian, Icelandic, and Esperanto.) The vocabulary of his language—"Mänti," meaning a type of tree—reflects the relationships between different things. The word "ema," for instance, translates as "mother," and "ela" is what a mother creates: "life." "Päike" is "sun," and "päive" is what the sun creates: "day." Tammet hopes to launch Mänti in academic circles later this year, his own personal exploration of the power of words and their inter-relationship.

¹ **epileptic fit:** (also referred to as an epileptic seizure) a brief symptom of epilepsy which may include loss of consciousness, convulsions, or losing muscle tone and slumping to the ground

continued on next page

- 6 Last year, Tammet broke the European record for recalling pi, the mathematical constant², to the furthest decimal point. He found it easy, he says, because he didn't even have to "think." To him, pi isn't an abstract set of digits; it's a visual story, a film projected in front of his eyes. He learnt the number forwards and backwards and, last year, spent five hours recalling it in front of an adjudicator³. He wanted to prove a point. "I memorised pi to 22,514 decimal places, and I am technically **disabled**. I just wanted to show people that disability needn't get in the way."
- 7 Tammet is softly spoken and shy about making eye contact, which makes him seem younger than he is. He lives on the Kent coast, but never goes near the beach—there are too many pebbles to count. The thought of a mathematical problem with no solution makes him feel uncomfortable. Trips to the supermarket are always a chore. "There's too much mental stimulus. I have to look at every shape and texture. Every price and every arrangement of fruit and vegetables. So instead of thinking, 'What cheese do I want this week?', I'm just really uncomfortable."
- 8 Tammet has never been able to work 9 to 5. It would be too difficult to fit around his daily routine. For instance, he has to drink his cups of tea at exactly the same time every day. Things have to happen in the same order: He always brushes his teeth before he has his shower. "I have tried to be more **flexible**, but I always end up feeling more uncomfortable. **Retaining** a sense of control is really important. I like to do things in my own time and in my own style, so an office with targets and bureaucracy just wouldn't work."
- 9 Instead, he has set up a business on his own, at home, writing email courses in language learning, numeracy, and literacy for private clients. It has had the fringe **benefit** of keeping human **interaction** to a minimum. It also gives him time to work on the verb structures of Mänti.
- 10 Few people on the streets have recognised Tammet since his pi record attempt. But, when a documentary about his life is broadcast on Channel 5 later this year, all that will change. "The highlight of filming was to meet Kim Peek, the real-life character who inspired the film *Rain Man*. Before I watched *Rain Man*, I was frightened. As a nine-year-old schoolboy, you don't want people to point at the screen and say, 'That's you.' But I watched it and felt a real connection. Getting to meet the real-life Rain Man was inspirational."
- 11 Peek was shy and introspective, but he sat and held Tammet's hand for hours. "We shared so much—our love of key dates from history, for instance. And our love of books. As a child, I regularly took over a room in the house and started my own lending library. I would separate out fiction and non-fiction, and then alphabetise them all. I even introduced a ticketing system. I love books so much. I've read more books than anyone else I know, so I was delighted when Kim wanted to meet in a library." Peek can read two pages simultaneously, one with each eye. He can also recall, in exact detail, the 7,600 books he has read. When he is at home in Utah, he spends afternoons at the Salt Lake City public library, memorising phone books and address directories. "He is such a lovely man," says Tammet. "Kim says, 'You don't have to be handicapped to be different—everybody's different.' And he's right."
- 12 As a baby, he (Tammet) banged his head against the wall and cried constantly. Nobody knew what was wrong. His mother was **anxious**, and would swing him to sleep in a blanket. She breastfed him for two years. The only thing the doctors could say was that perhaps he was understimulated. Then, one afternoon when he was playing with his brother in the living room, he had an epileptic fit.
- 13 "I was given medication—round blue tablets—to control my seizures and told not to go out in direct sunlight. I had to visit the hospital every month for

² **mathematical constant:** a special number that is usually a real number and is considered "significantly interesting in some way"

³ **adjudicator:** a judge or arbitrator, especially in a dispute or competition

continued on next page

regular blood tests. I hated those tests, but I knew they were necessary. To make up for it, my father would always buy me a cup of squash⁴ to drink while we sat in the waiting room. It was a worrying time because my dad's father had epilepsy and actually died of it, in the end. They were thinking, 'This is the end of Daniel's life.' "

14 He remembers being given a Ladybird book called *Counting* when he was four. "When I looked at the numbers, I 'saw' images. It felt like a place I could go where I really belonged. That was great. I went to this other country whenever I could. I would sit on the floor in my bedroom and just count. I didn't notice that time was passing. It was only when my mum shouted up for dinner or someone knocked at my door, that I would snap out of it."

15 One day his brother asked him a sum⁵. "He asked me to multiply something in my head—like 'What is $82 \times 82 \times 82 \times 82$?' I just looked at the floor and closed my eyes. My back went very straight, and I made my hands into fists. But after five or ten seconds, the answer just flowed out of my mouth. He asked me several others, and I got every one right. My parents didn't seem surprised. And they never put pressure on me to perform for the neighbours. They knew I was different but wanted me to have a normal life as far as possible."

16 Tammet could see the car park of his infant school from his bedroom window, which made him feel safe. "I loved assembly because we got to sing hymns. The notes formed a pattern in my head, just like the numbers did." The other children didn't know what to make of him and would tease him. The minute the bell went for playtime, he would rush off. "I went to the playground, but not to play. The place was surrounded by trees. While the other children were playing football, I would just stand and count the leaves."

17 Tammet may have been teased at school, but his teachers were always protective. "I think my parents must have had a word with them, so I was pretty much left alone." He found it hard to socialise with anyone outside the family, and, with the advent of adolescence, his shyness got worse.

18 After leaving school with three A-levels (History, French and German, all grade Bs), he decided he wanted to teach—only not the **predictable**, learn-by-rote type of teaching. For a start, he went to teach in Lithuania, and he worked as a volunteer. "It was also the first time I was introduced as 'Daniel' rather than 'the guy who can do weird stuff in his head.' It was such a pleasant relief." Later, he returned home to live with his parents and found work as a maths tutor.

19 When he isn't working, Tammet likes to hang out with his friends on the church quiz team. His knowledge of popular culture lets him down, but he's a shoo-in when it comes to the maths questions. "I do love numbers," he says. "It isn't only an intellectual or aloof thing that I do. I really feel that there is an emotional attachment, a caring for numbers. I think this is a human thing—in the same way that a poet humanises a river or a tree through metaphor, my world gives me a sense of numbers as personal. It sounds silly, but numbers are my friends."

Note: This article originally appeared in *The Guardian*, a British news publication. Several words in the article are written using British spelling and terms, which is sometimes different from American usage.

⁴ **squash:** fruit syrup mixed with sugar and water or carbonated water

⁵ **sum:** (in British English) a calculation

MAIN IDEAS

Articles and textbooks often contain paragraph headings. A paragraph heading is like a title for the paragraph. It tells readers what they can expect to read about. Choose the best paragraph heading for each section in the article.

1. Paragraphs 1 and 2
 - a. Daniel Tammet—mathematical genius
 - b. Daniel Tammet's abilities and disabilities
 - c. Math—how he does it
2. Paragraphs 4 and 5
 - a. The autistic brain
 - b. Manti—Daniel's language
 - c. Not the typical savant
3. Paragraphs 7 and 8
 - a. Everyday life can be challenging
 - b. Overstimulation can be a problem
 - c. Daniel's daily routine
4. Paragraphs 10 and 11
 - a. Kim Peek and Daniel's similarities
 - b. Kim Peek and Daniel's love of books
 - c. Daniel and Kim Peek connect
5. Paragraphs 14 and 15
 - a. Daniel starts counting
 - b. Daniel's math skills emerge
 - c. Numbers as images
6. Paragraphs 16 and 17
 - a. Daniel's love of singing
 - b. Daniel's shyness
 - c. Problems in school

DETAILS

1 Reading One gives information about Daniel's abilities and disabilities. Read the categories on the left in the chart. Then write the details and examples from the box next to the correct categories. Finally, identify each detail or example as either an ability or a disability. Use your notes to help you. Share your completed chart with a partner.

He feels uncomfortable in the supermarket.

He can recall pi to 22,514 decimal points.

He is able to read a lot of books.

He doesn't go to the beach because there are too many pebbles to count.

He can easily remember key dates in history.

~~He has invented his own language.~~

He must drink his tea at exactly the same time every day.

He has trouble making eye contact.

He always has to brush his teeth before he showers.

He speaks eight languages.

~~He can calculate cube roots faster than a calculator.~~

It is hard for him to socialize with anyone outside his family.

He can multiply 377×795 in his head.

The thought of a mathematical problem with no solution makes him uncomfortable.

CATEGORY	DETAILS OR EXAMPLES	ABILITY	DISABILITY
Math	1. <i>He can calculate cube roots faster than a calculator.</i>	X	
	2.		
	3.		
	4.		
Language	1. <i>He has invented his own language.</i>	X	
	2.		
	3.		
Memory	1.		
	2.		
Social Interaction	1.		
	2.		
	3.		
Need for Order	1.		
	2.		

2 Look at your notes and at your answers in Preview. How did they help you understand the article?

Understanding Assumptions

An **inference** is an **educated guess** about something that is **not directly stated** in a text. *A Genius Explains* includes quotes from Daniel Tammet and Kim Peek that show what others might assume about the two men's disabilities. What assumptions can you infer from these quotations?

Look at the example and read the assumption and the explanation.

"I just wanted to show people that disability needn't get in the way." (*paragraph 6*)

Assumption: People think that someone with a disability cannot do as much as someone without a disability.

Some people assumed that Daniel's disability would cause him to have problems in other areas of his life. By showing people that he could achieve remarkable things, even though he was "technically disabled," Daniel wanted to show that their assumptions were wrong. His disability wasn't going to hold him back.

1 Read the quotes from Daniel and Kim. Complete the sentences with assumptions that people have made about them.

1. Daniel: "It was also the first time I was introduced as 'Daniel' rather than 'the guy who can do weird stuff in his head.'" (*paragraph 18*)

Others didn't think that Daniel was _____

2. Kim: "You don't have to be handicapped to be different—everybody's different." (*paragraph 11*)

Others think that _____

3. Daniel: "It sounds silly, but numbers are my friends." (*paragraph 19*)

Other people probably think that numbers _____

4. Daniel: "It isn't only an intellectual or aloof thing that I do. I really feel that there is an emotional attachment, a caring for numbers." (*paragraph 19*)

Other people probably assume that Daniel's relationship to numbers _____

5. Daniel: "I like to do things in my own time and in my own style, so an office with targets and bureaucracy just wouldn't work." (*paragraph 8*)

Other people might expect Daniel to _____

2 Discuss your answers with a partner. Point out sentences, words, or phrases that helped you find the answers.

DISCUSS

Work in a small group. Choose one of the questions. Discuss your ideas. Then choose one person in your group to report the ideas to the class.

1. Which of Daniel's abilities would be advantageous? Which would be less advantageous? Why? Have you ever met anyone with this combination of advantage and disadvantage?
2. William James, the American psychologist and philosopher (1842–1910) said, "Genius means nothing more than the faculty of perceiving in an unhabitual way." How does this quotation apply to Daniel Tammet?

 Go to **MyEnglishLab** to give your opinion about another question.

USE YOUR NOTES

Use your notes to support your answers with information from the reading.

READING TWO | 10,000 Hours to Mastery

PREVIEW

- 1 Look at the title of the reading and the picture. Write two questions that you think will be answered in this reading.

- 2 Look at the boldfaced words in the reading. Which words do you know the meanings of?

- 1 Read the article about Malcolm Gladwell's book, *Outliers: The Story of Success*. As you read, guess the meanings of the words that are new to you. Remember to take notes on main ideas and details.

10,000 HOURS TO MASTERY by Harvey Mackay

- 1 For years, I have preached the importance of hard work, determination, **persistence**, and practice—make that perfect practice—as key ingredients of success. A nifty new book seems to support my theory.
- 2 Malcolm Gladwell has written a fascinating study, *Outliers: The Story of Success* (Little, Brown & Co.), which should make a lot of people feel much better about not achieving instant success. In fact, he says it takes about ten years, or 10,000 hours, of practice to attain true **expertise**.
- 3 “The people at the very top don’t just work harder or even much harder than everyone else,” Gladwell writes. “They work much, much harder.” Achievement, he says, is talent plus preparation. Preparation seems to play a bigger role.
- 4 For example, he describes the Beatles: They had been together seven years before their famous arrival in America. They spent a lot of time playing in strip clubs in Hamburg, Germany, sometimes for as long as eight hours a night. Overnight sensation? Not exactly. Estimates are the band performed 1,200 times before their big success in 1964. By comparison, most bands don’t perform 1,200 times in their careers.
- 5 Neurologist Daniel Levitin has studied the formula for success extensively and shares this finding: “The **emerging** picture from such studies is that 10,000 hours of practice is required to achieve the level of mastery associated with being a world-class expert in anything. In study after study of composers, basketball players, fiction writers, ice skaters, concert pianists, chess players, master criminals, and what have you, the number comes up again and again. Of course, this doesn’t address why some people get more out of their practice sessions than others do. But no one has yet found a case in which true world-class expertise was accomplished in less time. It seems it takes the brain this long to **assimilate** all that it needs to know to achieve true mastery.”
- 6 Two computer giants, Bill Joy, who co-founded Sun Microsystems, and Bill Gates, co-founder of



The Beatles

Microsoft, also were proof of the 10,000-hour theory.

- 7 As Gladwell puts it, “Practice isn’t the thing you do once you’re good. It’s the thing you do that makes you good.”
- 8 Consider these thoughts from successful folks in all walks of life:
- 9 • “No one can arrive from being talented alone. God gives talent; work **transforms** talent into genius.”—Anna Pavlova, ballerina.
- 10 • “I know the price of success: dedication, hard work, and an unrelenting devotion to the things you want to see happen.”—Frank Lloyd Wright, architect.
- 11 • “The way to learn to do things is to do things. The way to learn a trade is to work at it. Success teaches how to succeed. Begin with the determination to succeed, and the work is half done already.”—Mark Twain, writer and humorist.
- 12 Do you detect a theme here?
- 13 The abilities these people possessed were far-ranging, yet the formula for success was the same: hard work and lots of it. I don’t know anyone who has succeeded any other way. Some people just make it look easy. Of course, you probably didn’t see the first 9,999 hours of hard work. And you don’t just have to work hard; you have to work smart, too.
- 14 **Mackay’s Moral:** Some people dream about success, and others wake up and do something about it.

- 2 Compare your notes on main ideas and details with a partner’s. How can you improve your notes next time?

➡ Go to the **Pearson Practice English App** or **MyEnglishLab** for more vocabulary practice.

Taking Notes by Marking Important Information

When you mark a text, you identify important information. This helps you read more carefully. You can also look back at the information you marked to help you study for tests and complete assignments.

You can underline or highlight information. Only mark the important words. For example, these marks focus on the author's use of experts' words (or appealing to authority) to support his thesis that success is based on hard work, determination, and persistence.

Malcolm Gladwell has written a fascinating study, *Outliers: The Story of Success* (Little, Brown, & Co.), which should make a lot of people feel much better about not achieving instant success. In fact, he says it takes about ten years, or 10,000 hours of practice to attain true expertise.

- 1 Mark the expert's words in this paragraph that support the author's thesis that success is based on hard work, determination, and persistence. Share your answers with a partner.**

"The people at the very top don't just work harder or even much harder than everyone else," Gladwell writes. "They work much, much harder." Achievement, he says, is talent plus preparation. Preparation seems to play a bigger role.

- 2 Look at Reading Two again. Mark the information that you think is most important.**

 Go to **MyEnglishLab** for more note-taking practice.

COMPREHENSION

- 1 Complete each statement according to information in the article. Use your notes from Reading Two to help you. Discuss your answers with a partner.**

1. According to Gladwell, achievement is _____
2. The Beatles were different from most other bands because _____
3. Regarding success, Daniel Levitin says that _____
4. Levitin believes success takes so long to achieve because _____

- 2 Review the boldfaced words from the reading with a partner. Use a dictionary or ask your teacher for any meanings you still do not know.**

2. [Tammet] lives on the Kent coast, but never goes near the beach—there are too many pebbles to count. The thought of a mathematical problem with no solution makes him feel uncomfortable. Trips to the supermarket are always a chore. There's too much mental stimulus. I have to look at every shape and texture. Every price and every arrangement of fruit and vegetables. So instead of thinking, 'What cheese do I want this week?', I'm just really uncomfortable. (*paragraph 7*)
3. Peek was shy and introspective, but he sat and held Tammet's hand for hours. We shared so much—our love of key dates from history, for instance. And our love of books. . . . I've read more books than anyone else I know, so I was delighted when Kim wanted to meet in a library. Peek can read two pages simultaneously, one with each eye. He can also recall, in exact detail, the 7,600 books he has read. . . . He is such a lovely man, says Tammet. Kim says, 'You don't have to be handicapped to be different—everybody's different.' And he's right. (*paragraph 11*)
4. He remembers being given a Ladybird book called *Counting* when he was four. When I looked at the numbers, I 'saw' images. It felt like a place I could go where I really belonged. (*paragraph 14*)

🖱️ Go to **MyEnglishLab** for more skill practice.



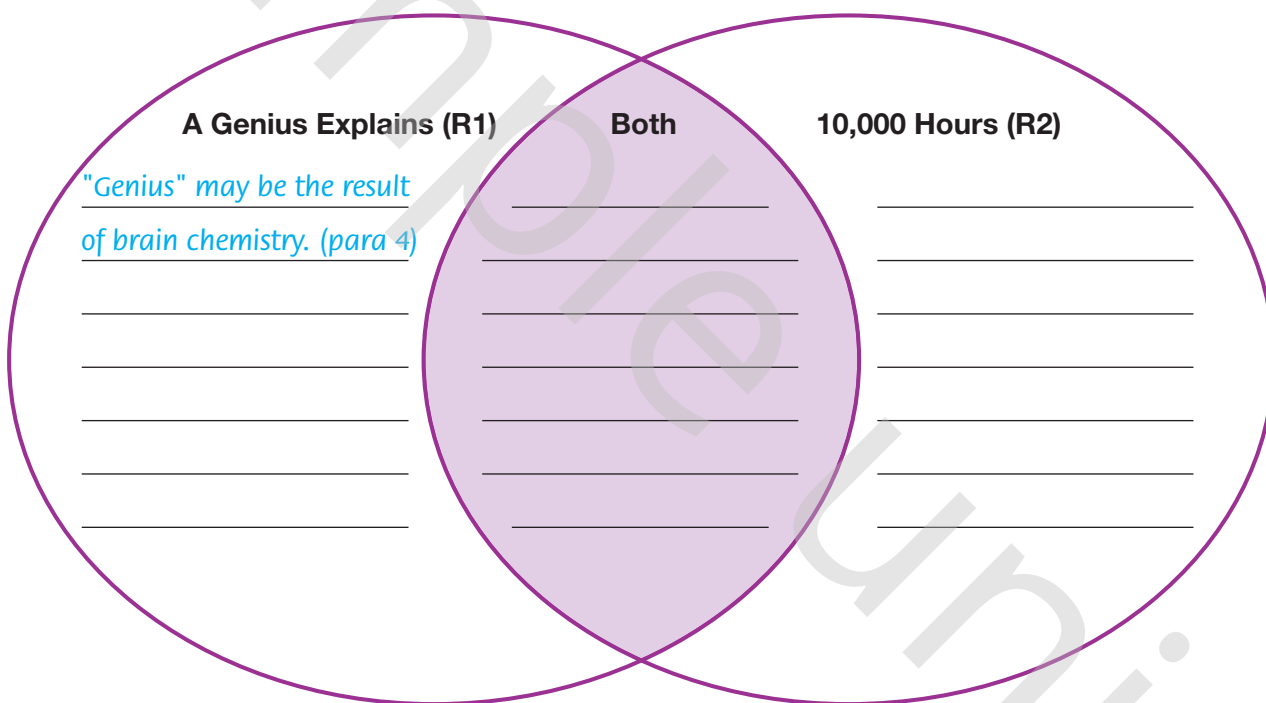
ORGANIZE

Reading One (R1) and Reading Two (R2) both talk about genius. A Venn diagram can be used to show where the ideas about genius are found. Read the statements in the box. Write the statement in the correct part of the diagram. Include the paragraph number where the information is found.

USE YOUR NOTES

Review your notes from Reading One and Two. Use the information in your notes to complete the chart.

1. "Genius" may be the result of brain chemistry.
2. A person can be a genius and also be disabled.
3. People at the top (experts) work harder than other people.
4. Genius = talent + hard work.
5. "Genius" is being studied by scientists.
6. Expertise requires a lot of practice.
7. Special talents can also cause problems.



SYNTHESIZE

Look back at the readings about Daniel Tammet and Malcolm Gladwell's theory and at the work you did in Organize. Based on this information, write two paragraphs. One paragraph will be about Daniel Tammet. The other paragraph will be about Malcolm Gladwell's idea of what makes a person an expert, including examples of some of the people he mentions. You may also write a third paragraph discussing any similarities between the two readings.

👉 Go to **MyEnglishLab** to check what you learned.

3 FOCUS ON WRITING

VOCABULARY

REVIEW

Complete the word scramble puzzle. Rearrange the letters to form vocabulary words from the unit. Use the circled letter from each word to find the bonus word.

1. e a i t C t r n o n i	<u>i n t e r a c t i o n</u>	communication or collaboration
2. l i a a m S t s i e	_____	This is what takes the brain so long to do, according to Dr. Levitin.
3. g a s o s n i t n i h	_____	amazing or surprising
4. f r o a m t r n s	_____	to change
5. e p i r d b t e a l c	_____	Because of his need for structure, Daniel Tammet's life is this.
6. p e i e e x S t r	_____	what you may acquire after thousands of hours of practice
7. f n i t b e e	_____	an advantage
8. n m r i e g g e	_____	starting to appear
9. u n x a o i s	_____	nervous or eager
10. m p n o e s a t e c	_____	to make up for a weakness
11. b l d s i e d a	_____	unable to perform certain activities

Bonus Word (This is the quality you might need to have to complete this puzzle!)

EXPAND

- 1 Complete the chart with the correct word forms. Some categories can have more than one form. Use a dictionary if necessary. An X indicates that you do not need to put a form in that category.

NOUN	VERB	ADJECTIVE	ADVERB
		predictable	
		estimated	X
		1. astonishing 2.	X
	X	anxious	
		flexible	
interaction			
	transform	1. 2. 3.	X
	retain		X
benefit			X
		disabled	X
1. expertise 2.	X		
	assimilate		X
		emerging	X
		persistent	
	compensate	X	X

- 2 Complete the sentences with the words in the boxes. You may need to change the word form.

expertise

flexible

persistence

predictable

transform

- According to Anna Pavlova, work has the _____ effect of turning talent into genius.
- A lack of _____ is one of the symptoms of ASD.
- Daniel Tammet's life is very _____ ; he always drinks his tea at the same time.
- Gladwell believes that to achieve mastery you must _____ in your practice and never give up.
- Gladwell says it takes about ten years to attain true world-class _____ .

anxious

compensate

emerging

estimated

interaction

6. Mathematical problems with no solution cause a feeling of _____ for Daniel Tammet.
7. Scientists _____ that there are fewer than 100 autistic savants alive today.
8. Daniel Tammet's choosing to work at home instead of in an office is a type of _____ for the fact that he needs structure.
9. Tammet also chooses to work at home because he has trouble with social _____.
10. The symptoms of ASD usually begin to _____ when a child is two or three years old.

CREATE

APPLY Rewrite the sentences by replacing the underlined word with the form of the word noted in parentheses. Make any necessary grammatical changes.

1. Because I know Daniel Tammet well, I can predict how he will react in certain situations. (adjective)
Because I know Daniel Tammet well, how he will react in certain situations is very predictable.
2. Many people who suffer from ASD have problems with flexibility. (adjective)

3. According to Gladwell, the transformation of talent into expertise requires at least 10,000 hours. (verb)

4. A lack of structure can cause anxiety for Daniel Tammet. (adjective)

5. For many people with ASD, being able to interact socially is difficult. (noun)

6. Brain scans of autistic savants suggest that there might be compensation being done by the right hemisphere for damage to the left. (verb)

7. The retention of large amounts of information is usually not a problem for autistic savants. (verb)
-
-
8. Daniel Tammet memorized pi to 22,514 decimal places to show that, although he is technically disabled, it doesn't stop him from being successful. (noun)
-
-

👉 Go to the **Pearson Practice English App** or **MyEnglishLab** for more vocabulary practice.

GRAMMAR FOR WRITING

1 Read the sentences and answer the questions.

- By the time Daniel started school, he **had** already **had** his first seizure.
 - Daniel **had** just **graduated** from school when he traveled to France to live with a family.
 - Before Daniel moved to Lithuania, he **had lived** with a family in France.
- a. In the first sentence, did Daniel start school first, or did he have a seizure first?
 - b. In the second sentence, did Daniel travel to France before he graduated?
 - c. In the third sentence, which happened first: Daniel's move to Lithuania or living with a family in France?
 - d. What helped you decide the order of events in these sentences?

Past Perfect

The **past perfect** form of a verb is used to show that something happened before a specific time or event in the past.

The past perfect is formed with **had + the past participle**

Past Perfect and a Specific Time or Event in the Past

To show something happened before a specific time in the past, use the past perfect with **by** + a certain time in the past.

Past Perfect with Two Past Events

When talking about two events that happened in the past, use the past perfect to show the first event that happened (the earlier event). The simple past is often used to show the second event. The event in the past perfect happened before the event in the simple past.

The Beatles **had** already **performed** thousands of times before they came to America.

By age thirteen, Daniel **had** already **learned** how to play chess.

Before Daniel published his memoir, he **had** already **created** his website *Optimnem*.
(First, Daniel created his website. Then he published his memoir.)

Time words

After and **as soon as** are used to introduce the first event (past perfect).

Before and **by the time** are used to introduce the second event (simple past).

When can be used to introduce either the first or second event. Notice the difference.

As soon as Daniel **had learned** Lithuanian, he was able to communicate more easily. (First, he learned Lithuanian. Then he communicated more easily.)

The Beatles **had performed** more than 1,200 times **by the time** they came to America. (First, they performed over 1,200 times. Then they came to America.)

Daniel **had cooked dinner when** Kim Peek arrived. (First, he cooked dinner. Then Kim Peek arrived.)

Daniel cooked dinner **when Kim Peek had arrived**. (First, Kim Peek arrived. Then Daniel cooked dinner.)

Adverbs often used with Past Perfect – *Already, Just, Never, Yet, and Ever*

In addition to using time words, **already**, **just**, and **never** are often used in affirmative sentences with the past perfect to emphasize the event that happened first.

Yet and **ever** are usually used in negative sentences or in questions. **Yet** is used for something that hasn't happened until this point, but likely will happen in the future.

Daniel **had just graduated** when he decided to travel to France. (He graduated and immediately decided to travel to France.)

Daniel **had already learned** to play chess before he graduated from secondary school. (First, he learned to play chess. Then, he graduated.)

It was 2002. Daniel Tammet **hadn't yet broken** the record for memorizing pi. (Not in 2002, but he would in the future.)

The Beatles **hadn't ever been** in America before 1964. (Never / not ever before 1964. Maybe they went after that, but the sentence doesn't address that.)

Punctuation with the Past Perfect

As in all sentences with two clauses, when the sentence begins with the dependent clause (the clause beginning with the time word, such as *after*, *before*, etc.), use a comma to separate it from the main clause.

When the sentence begins with an independent clause, do not use a comma.

Before Daniel published his memoir, he had already created his website *Optimnem*.

Daniel had already created his website *Optimnem* **before he published his memoir**.

2 Each of these sentences talks about two events that happened in the past. Which event happened first? Write 1 for the first event and 2 for the second event.

1. By the time Malcolm Gladwell wrote *Outliers*, he had already published two other books.
____ Malcolm Gladwell wrote *Outliers*.
____ Malcolm published two other books.
2. Before the Beatles became famous, they had worked in Hamburg, Germany.
____ The Beatles became famous.
____ The Beatles worked in Hamburg, Germany.
3. Daniel Tammet went to the playground as soon as the school bell had rung.
____ Daniel went to the playground.
____ The school bell rang.
4. Frank Lloyd Wright had already married his first wife when he opened his architecture firm.
____ Frank Lloyd Wright married his first wife.
____ Frank Lloyd Wright opened his architecture firm.
5. Anna Pavlova had decided to live in London by the time she performed *Sleeping Beauty* in New York City.
____ Anna Pavlova decided to live in London.
____ Anna Pavlova performed *Sleeping Beauty* in New York City.
6. Before Mark Twain published *The Adventures of Huckleberry Finn*, he had already worked as a riverboat pilot on the Mississippi River.
____ Mark Twain published *The Adventures of Huckleberry Finn*.
____ Mark Twain worked as a riverboat pilot on the Mississippi River.
7. After Malcolm Gladwell had worked for the *Washington Post*, he started working for *The New Yorker* magazine.
____ Malcolm Gladwell worked for the *Washington Post*.
____ Malcolm Gladwell started working for *The New Yorker* magazine.
8. When Daniel Tammet met Kim Peek, Peek had already read over 7,000 books.
____ Daniel Tammet met Kim Peek.
____ Kim Peek read over 7,000 books.
9. Anna Pavlova moved to London as soon as she had started her own ballet company.
____ Anna Pavlova moved to London.
____ Anna Pavlova started her own ballet company.
10. By the time Mark Twain started working as a riverboat pilot, he had worked as a printer in New York and Philadelphia.
____ Mark Twain started working as a riverboat pilot.
____ Mark Twain worked as a printer in New York and Philadelphia.

- 3 **APPLY** Study the timeline of Daniel Tammet's life. Use the information in the timeline to complete the sentences using the past perfect or simple past.

DANIEL TAMMET'S LIFE	
1979 – born in East London, England	1999 – returns to England
1983 – has first seizure	2002 – creates website, <i>Optimnem</i>
1984 (September 7) – starts school	2004 (May) – breaks record for memorizing pi
1984 (September 20) – sister, Claire, born	2004 (September) – learns Icelandic language in one week
1988 – starts learning foreign languages	2005 – appears on American TV shows
1990 – starts secondary school	2006 – publishes memoir, <i>Born on a Blue Day</i>
1992 – learns to play chess	2008 – moves to France
1995 (June 10) – graduates from secondary school	2009 – second book, <i>Embracing the Wide Sky</i> , becomes a bestseller in France
1995 (July 22) – travels to France to live with family	2012 – third book is published
1998 – moves to Lithuania to teach English	2016 – writes first book in French, <i>Mishenka</i>

- After Daniel had had his first seizure, he started school.
- Before Daniel learned to play chess, _____.
- As soon as _____, his sister, Claire, was born.
- _____ by the time he moved to France.
- By 2005, _____.
- When _____.
- Daniel had already _____.
- _____ before _____.
- _____ as soon as _____.

- ➡ Go to the **Pearson Practice English App** or **MyEnglishLab** for more grammar practice. Check what you learned in **MyEnglishLab**.

In this unit, you read about different geniuses and how they achieved their expertise.

You are going to *write a summary paragraph about a genius. This person can be alive now or from the past. Be sure to include why this person is considered a genius and how he or she achieved expertise.*

For an alternative writing topic, see page 31.

PREPARE TO WRITE: Group Brainstorming

Group brainstorming is a good way to get ideas for writing. In brainstorming, you think of as many ideas as you can. Don't think about whether the ideas are good or bad. Just write down all ideas.

- 1 **Work in a small group. Brainstorm a list of geniuses. The person can be from any time period or culture. Don't stop to discuss the genius. Focus on thinking of as many examples as possible.**

1. _____	6. _____
2. _____	7. _____
3. _____	8. _____
4. _____	9. _____
5. _____	10. _____

- 2 **Now work individually. Choose one genius that you find interesting and want to write about. Research this person to find information about his or her life and achievements. Be sure to include why this person is considered a genius and how he or she achieved expertise. Take notes about what you find out. Make sure the notes are in your own words and not copied word-for-word.**

WRITE

Writing a Summary Paragraph

A **paragraph** is a group of sentences that are related and deal with a single topic. A **summary paragraph** identifies and extracts the main idea from a text, leaving out less important details. All summary paragraphs have a **topic sentence** with a **controlling idea**.

The **topic sentence** is an essential part of all well-written paragraphs. The topic sentence controls the content of the rest of the paragraph. This control helps the writer focus on supporting ideas in the paragraph that are directly related to the topic sentence. The first step in writing a topic sentence is to choose a topic and find a point of view or **main idea** about it.

Topics

Mozart

Autistic savants

Malcolm Gladwell

Main Idea

Mozart is considered a prodigy.

Autistic savants have specific abilities or skills.

Malcolm Gladwell has written a fascinating book.

continued on next page

The next step is to narrow the main idea even more by finding a **controlling idea**. The controlling idea is the idea you want to explain, illustrate, or describe in the paragraph. It makes a specific statement about a topic. The controlling ideas in the topic sentences below are underlined.

Main Idea

Main Idea + Controlling Idea = Topic Sentence

Mozart is considered a prodigy.

Mozart is considered a prodigy because he achieved huge musical accomplishments at a very young age.

Autistic savants have specific abilities or skills.

Although autistic savants have specific abilities or skills, they may have other limitations, especially problems with social interactions.

Malcolm Gladwell has written a fascinating book.

Malcolm Gladwell has written a fascinating book, which emphasizes the importance of hard work.

1 Read this paragraph about autistic savants. Then answer the questions.

Autistic savants have specific abilities or skills, but they are not without certain limitations in other areas of life. An autistic savant is a person with an unusual ability, skill, or knowledge that is much more developed than that of an average person. In fact, many savants have highly developed mathematical skills. Others are able to retain large amounts of information in their memory. For example, some autistic savants can recite entire dictionaries or telephone books word-for-word. Still others are able to draw detailed maps of an area after flying over it once in a helicopter. Despite the fact that the autistic savant has these specific abilities or skills, he or she may have difficulties with other types of mental or physical tasks and social interactions. For instance, some savants may have trouble doing simple tasks, such as tying their shoes or driving a car. Additionally, an autistic savant may have problems talking to people or even making eye contact. So, despite their advanced skills and abilities in certain areas, savants may encounter difficulty with seemingly simple tasks.

1. What is the topic of this paragraph? _____

2. The first sentence is the topic sentence. What two ideas are presented in this sentence?

3. How does the content of the rest of the paragraph relate to the topic sentence?

2 Each paragraph is missing a topic sentence. Choose the topic sentence that best fits the paragraph.

1. Daniel suffered an epileptic seizure when he was very young, which may be the cause of his savant abilities. Soon after, when he was four, his mother gave him a counting book, and his love of mathematics was born. From an early age, he has been able to solve complicated mathematical problems in his head. Recently, he has been able to memorize pi to 22,514 digits.
 - a. Daniel Tammet is very good at math and has a great memory.
 - b. Daniel Tammet is an autistic savant with exceptional memory and mathematical abilities.
 - c. Daniel Tammet is an autistic savant who loves solving mathematical problems.
2. What Levitin has found is that it appears that 10,000 hours of practice are required to reach world-class expertise in any field. In fact, he has found no world-class expert who has not put in at least that many hours of preparation. He believes that this is because it takes that much time for the brain to assimilate everything necessary to reach this level of expertise.
 - a. Daniel Levitin, a neurologist, has extensively studied what is needed to reach success.
 - b. Reaching world-class expertise requires a lot of time and practice.
 - c. Daniel Levitin believes that it takes the brain a long time to assimilate the information necessary to be an expert.
3. Parents create these hothouse kids because they are attempting to create a “genius.” They may begin by playing classical music for the hothouse child when he or she is still in the crib. The parents start working with their children on math and language skills at an early age, using flashcards. They also enroll their children in music and dance lessons, often as early as age three or four. In addition, they try to get their kids into the most academically challenging preschools.
 - a. Hothouse kids learn math and music at an early age.
 - b. Parents take a variety of approaches to ensure that their kids become geniuses and can get into the best preschools.
 - c. “Hothouse kids” is a term used to define children whose parents push them to learn more quickly and earlier than a “typical” child by providing a rich educational environment.

3 Read the paragraphs. The underlined topic sentences are incomplete because they do not have a controlling idea. Rewrite each topic sentence to include both a topic and a controlling idea.

1. Wolfgang Amadeus Mozart was a genius. For one thing, Mozart was a child prodigy who was playing the violin and piano by age four and composing by age six. Another reason that he is considered a genius is that he was able to create more than 600 compositions—including symphonies, chamber music, sonatas, and choral music—in his thirty-four-year lifetime. Additionally, he is said to have been able to compose entire symphonies in his head. He could imagine the sounds of all the different instruments without using a piano to help him compose. He was not only the best pianist of his day in Europe but also one of the top three or four violinists.

2. Scientists debate the importance of nature versus nurture. In other words, the debate of nature versus nurture asks the question: “What part does nature—the genetic information that you have inherited from your parents—play in your development? And, conversely, what part does environment—what you eat, where you went to school, how your parents raised you—play?” In an effort to understand the importance of each of these factors, there have been many studies using twins who were separated at birth. While these studies are not conclusive, there were instances where the separated twins had developed in a remarkably similar manner. Nevertheless, the reasons for this may also have to do with environment (nurture). Even though they were raised by different families, the environments could have been quite similar.
-
-

3. Malcolm Gladwell is a talented author. His book *Outliers* was published in 2008 and was number one on the *New York Times* bestseller list for eleven straight weeks. It followed *The Tipping Point*, which was published in 2000. *The Tipping Point* addresses the individual’s ability to change society. This non-fiction bestseller was followed by *Blink* in 2005. *Blink* is about thinking. Why are some people able to make brilliant decisions in the blink of an eye while others seem to always make the wrong decision? *Blink* also was a non-fiction bestseller.
-
-

4 Use your outline and your notes from Prepare to Write on page 26 and Organize on page 18 to write the first draft of your summary paragraph. Make an organizer to help you plan your ideas.

- Make sure to include a clear topic sentence and content that supports it.
- Write a topic sentence that introduces the genius that you are going to write about and includes a controlling idea.
- Use the past perfect and time words to show the correct order of events.

REVISE: Identifying and Correcting Sentence Fragments

1 Choose the correct sentence.

- a. When Mozart, who was a child prodigy, wrote his first composition for piano.
- b. Before he went to Lithuania, Daniel Tammet had started to study the language.
- c. Malcolm Gladwell who wrote the book *Outliers*.

Sentence Fragments

Sentence fragments are incomplete sentences. They are often lacking a subject or verb. Other fragments may be dependent clauses that are not connected to an independent clause. These fragments are usually introduced by a relative pronoun (*that, who, which, whom, etc.*) or a subordinating conjunction (*after, although, because, since, when, etc.*). Look at the fragments and their problems.

Sentence Fragment

Problem

Because he could speak seven languages.

This is a dependent clause introduced by *because* (subordinating conjunction). There is no independent clause.

The book that Malcolm Gladwell wrote.

This is a subject. There is no main verb for the sentence.

Spoke seven languages fluently by the time he was twenty-one.

There is no subject.

Living in a large red house in France.

This is a subject. There is no main verb for the sentence.

There are a variety of strategies for correcting sentence fragments.

- Connect the fragment to the sentence before or after it.
- Change the punctuation.
- Add a subject or a verb.
- Add more information and rewrite it as a complete sentence.
- Remove the subordinating conjunction or relative pronoun.

2 Write **F** if the item is a fragment. Write **C** if the item is a complete sentence.

- ___ 1. Although autistic savants have many extraordinary skills and abilities.
- ___ 2. Gladwell has written an interesting book, which emphasizes the importance of hard work in achieving success.
- ___ 3. Before Daniel received his counting book when he was four years old.
- ___ 4. Before he had an epileptic seizure, there was no evidence that Daniel had extraordinary math abilities.
- ___ 5. Because Dr. Levitin says that at least 10,000 hours of practice are needed to achieve success.
- ___ 6. The book that Kim Peek was reading before he met Daniel Tammet at the library.
- ___ 7. Practicing as much as ten hours a day before the math competition.
- ___ 8. Einstein was voted the “Person of the Twentieth Century” by *Time* magazine after he received the Nobel Prize for Physics.

3 Work with a partner. Use the strategies in the box above to correct each item you identified as a sentence fragment in Exercise 2.

4 Now go back to the first draft of your paragraph.

- Make sure your supporting paragraphs do not include any sentence fragments.
- Try to use the grammar and some of the vocabulary from the unit.

 Go to **MyEnglishLab** for more skill practice.

EDIT: Writing the Final Draft

APPLY Write the final draft of your paragraph and submit it to your teacher. Carefully edit it for grammatical and mechanical errors, such as spelling, capitalization, and punctuation. Consider how to apply the vocabulary, grammar, and writing skills from the unit. Use the checklist to help you.

FINAL DRAFT CHECKLIST

- ☐ Does the paragraph fully describe why the person is considered a genius and how he or she achieved expertise?
- ☐ Is there a topic sentence with a controlling idea that introduces the genius?
- ☐ Is the paragraph free of sentence fragments?
- ☐ Do you use the past perfect correctly?
- ☐ Do you use vocabulary from the unit?

ALTERNATIVE WRITING TOPIC

APPLY Daniel Levitin states that it takes 10,000 hours of practice to achieve true world-class expertise. Nevertheless, many people have put in that amount of practice in their fields and still have not achieved world-class expertise. Why do you think they were not successful? What makes the experts different from the others who have also put in 10,000 hours of practice? Explain. Use the grammar and vocabulary from the unit.

CHECK WHAT YOU'VE LEARNED

Check (✓) the outcomes you've met and vocabulary you've learned. Put an X next to the skills and vocabulary you still need to practice.

Learning Outcomes

- ☐ Understand assumptions
- ☐ Take notes by marking important information
- ☐ Distinguish voice in quotations
- ☐ Use past perfect
- ☐ Identify and correct sentence fragments
- ☐ Write a summary paragraph

Vocabulary

- | | |
|--|---|
| <input type="checkbox"/> anxious | <input type="checkbox"/> flexible AWL |
| <input type="checkbox"/> assimilate | <input type="checkbox"/> image AWL |
| <input type="checkbox"/> astonishing (<i>adj.</i>) | <input type="checkbox"/> interaction |
| <input type="checkbox"/> benefit (<i>n.</i>) AWL | <input type="checkbox"/> persistence |
| <input type="checkbox"/> compensate AWL | <input type="checkbox"/> predictable AWL |
| <input type="checkbox"/> disabled (<i>adj.</i>) | <input type="checkbox"/> retain AWL |
| <input type="checkbox"/> emerging (<i>adj.</i>) AWL | <input type="checkbox"/> savant |
| <input type="checkbox"/> estimate (<i>v.</i>) AWL | <input type="checkbox"/> transform AWL |
| <input type="checkbox"/> expertise AWL | |

 Go to **MyEnglishLab** to watch a video about child prodigies, access the Unit Project, and take the Unit 1 Achievement Test.