

OLYMPIADS SCHOOL – SAT PREP – HOMEWORK 1

NAME (FIRST AND LAST): _____ GRADE: _____

DAY, TIME, TEACHER: _____

Command of Evidence

(<https://collegereadiness.collegeboard.org/sat/inside-the-test/key-changes>)

“The Evidence-Based Reading and Writing section and the SAT Essay ask you to interpret, synthesize, and use evidence found in a wide range of sources. These sources include informational graphics, such as tables, charts, and graphs, as well as multiparagraph passages in the areas of literature and literary nonfiction, the humanities, science, history and social studies, and on topics about work and career.”

Improve your evidence-based reading skills by reading two very different source texts, “Crosstown Traffic: The Bedbug Genome,” and an excerpt from Amy Tan’s novel, *The Joy Luck Club*.

Passage 1 (Non-Fiction)

<http://www.newyorker.com/tech/elements/crosstown-traffic-the-bedbug-genome>

FEBRUARY 2, 2016

Crosstown Traffic: The Bedbug Genome

BY ELIZABETH KOLBERT

Scientists have assembled the first complete genome of bedbugs, which existed in some form even before humans were around to invent beds.

In the great contest that is life, the common bedbug, *Cimex lectularius*, qualifies as a winner. This is true not just in the Donald Trumpian sense of being extremely difficult to get rid of but in the long-term evolutionary sense of surviving multiple geological epochs. A creature that looked very much like a bedbug was scuttling around during the time of the dinosaurs; a sort of proto-bedbug has been found in amber that’s almost a hundred million years old. It’s not clear what that bug fed on, but it’s believed that long before modern humans—and therefore beds—existed, *Cimex lectularius* sucked on bats’ blood. When humans took to living in caves, bedbugs descended from the bats and began feeding on people. (There are still bedbugs that prefer bats, and scientists have proposed that the lineage that prefers humans is in the process of becoming a separate species.)

Today, researchers from the American Museum of Natural History and Weill Cornell Medicine announced that they had

Why does the writer describe life as a “great contest,” and why does the common bedbug qualify as a winner?

<p>assembled the complete genome of <i>Cimex lectularius</i>. The same team is working on the cockroach genome; both projects are part of an effort to better understand so-called “living fossils.” A paper on the bedbug genome is appearing today in the journal <i>Nature Communications</i>.</p> <p>“Bedbugs are one of New York City’s most iconic living fossils,” George Amato, one of the paper’s authors and the director of the museum’s Sackler Institute for Comparative Genomics, noted. The bedbug genome turns out to consist of almost seven hundred million base pairs. This is significantly larger than the fruit-fly genome (a hundred and twenty million base pairs), but not nearly as large as the locust genome (six billion base pairs). In addition to sequencing the bedbug’s genome, the researchers also looked at gene expression over the bug’s life cycle, which spans five instar stages. From this, they concluded that the “first blood meal of the bedbug is the most dynamic period of the bedbug’s transcriptional activity.”</p> <p>Bedbugs are so-called true bugs. Members of this group also include cicadas, aphids, and leafhoppers, and all share a common arrangement of mouthparts. As anyone who has suffered an infestation knows, bedbugs use their mouthparts, or proboscises, to seek out blood vessels. Then they inject anticoagulants into their victims, to prevent themselves from, in effect, choking. The researchers found that bedbugs possess several classes of genes that code for anticoagulant proteins, including for proteins usually associated with snake venom. This doesn’t mean that bedbugs are any more closely related to snakes than other insects, just that they’ve come up with some of the same strategies.</p> <p>“What we’re really finding is a structural motif—something about the sequence of amino acids that is probably involved in preventing blood from clotting in the same way a snake venom protein is, but doesn’t share an evolutionary history,” Mark Siddall, another author of the paper and a curator at the Museum of Natural History, explained.</p> <p>The ancient Greeks were already complaining about bedbugs in the fifth century B.C.; references to bedbugs appear in Aristophanes and then in Aristotle. The bugs seem to have travelled with humans along ancient trade routes; by the seventh century A.D., they were in China, and by the eleventh century in Germany. From Europe, bedbugs migrated to North America and Australia with the colonists.</p>	<p>← What is the main purpose of this paragraph?</p> <p>Why does the writer remark, “This doesn’t mean that bedbugs are any more closely related to snakes than other insect”?</p> <p>←What is the purpose of this paragraph?</p>
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Bedbugs suffered a population crash in the mid-twentieth century, with the introduction of pesticides like D.D.T. But they have since evolved resistance to many of the chemicals used against them, and their numbers have roared—or, if you prefer, snuck—back up. A recent study by researchers at Virginia Tech and New Mexico State University found that bedbugs have already evolved resistance to neonicotinoids, a class of pesticides that has been in use for only twenty years or so. (The study shows that it takes something like five hundred times the amount of neonicotinoids to kill bedbugs from populations that have been exposed to the chemicals as it takes to kill bugs from populations that have never been exposed.) The researchers who put together the bedbug genome identified several genes that may be involved in pesticide resistance; this information could potentially be used to create more effective bug killers.

“It turns a light on for people to begin in a logical way to explore these areas that we’ve identified,” Amato said.

By combining the information from the genome with information from DNA swabs taken from New York City subway stations, the researchers were also able to map relationships among the city’s bedbug populations. This effort suggests that even bedbugs have a hard time getting across Manhattan.

“We found more north-south connectivity for the bedbugs than we found east-west,” Siddall observed. “And that’s reflecting what we already know to be true.”

What word could replace “evolved” (underlined) without changing the meaning of the sentence?

← What purpose does the sentence in parenthesis serve? And why is it in parenthesis?

Why do you think the writer ends her article by quoting Mark Siddall’s observation about the “north-south connectivity”?

Passage 2 (Fiction)

My mother placed my first trophy next to a new plastic chess set that the neighborhood Tao society had given to me. As she wiped each piece with a soft cloth, she said, "Next time win more, lose less."

"Ma, it's not how many pieces you lose," I said. "Sometimes you need to lose pieces to get ahead."

"Better to lose less, see if you really need."

At the next tournament, I won again, but it was my mother who wore the triumphant grin.

"Lost eight piece this time. Last time was eleven. What I tell you? Better off lose less!" I was annoyed, but I couldn't say anything.

I attended more tournaments, each one farther away from home. I won all games, in all divisions. The Chinese bakery downstairs from our flat displayed my growing collection of trophies in its window, amidst the dust-covered cakes that were never picked up. The day after I won an important regional tournament, the window encased a fresh sheet cake with whipped cream frosting and red script saying, "Congratulations, Waverly Jong, Chinatown Chess Champion." Soon after that, a flower shop, headstone engraver, and funeral parlor offered to sponsor me in national tournaments. That's when my mother decided I no longer had to do the dishes. Winston and Vincent had to do my chores.

"Why does she get to play and we do all the work," complained Vincent.

"Is new American rules," said my mother. "Meimei play, squeeze all her brains out for win chess. You play, worth squeeze towel."

By my ninth birthday, I was a national chess champion. I was still some 429 points away from grand-master status, but I was touted as the Great American Hope, a child prodigy and a girl to boot. They ran a photo of me in *Life* magazine next to a quote in which Bobby Fischer said, "There will never be a woman grand master." "Your move, Bobby," said the caption.

Why was the narrator annoyed? Explain by discussing evidence from the text.

Why does the narrator add, "and a girl to boot"?

The day they took the magazine picture I wore neatly plaited braids clipped with plastic barrettes trimmed with rhinestones. I was playing in a large high school auditorium that echoed with phlegmy coughs and the squeaky rubber knobs of chair legs sliding across freshly waxed wooden floors. Seated across from me was an American man, about the same age as Lau Po, maybe fifty. I remember that his sweaty brow seemed to weep at my every move. He wore a dark, malodorous suit. One of his pockets was stuffed with a great white kerchief on which he wiped his palm before sweeping his hand over the chosen chess piece with great flourish.

In my crisp pink-and-white dress with scratchy lace at the neck, one of two my mother had sewn for these special occasions, I would clasp my hands under my chin, the delicate points of my elbows poised lightly on the table in the manner my mother had shown me for posing for the press. I would swing my patent leather shoes back and forth like an impatient child riding on a school bus. Then I would pause, suck in my lips, twirl my chosen piece in midair as if undecided, and then firmly plant it in its new threatening place, with a triumphant smile thrown back at my opponent for good measure.

I no longer played in the alley of Waverly Place. I never visited the playground where the pigeons and old men gathered. I went to school, then directly home to learn new chess secrets, cleverly concealed advantages, more escape routes.

But I found it difficult to concentrate at home. My mother had a habit of standing over me while I plotted out my games. I think she thought of herself as my protective ally. Her lips would be sealed tight, and after each move I made, a soft "Hmmmph" would escape from her nose.

"Ma, I can't practice when you stand there like that," I said one day. She retreated to the kitchen and made loud noises with the pots and pans. When the crashing stopped, I could see out of the corner of my eye that she was standing in the doorway. "Hmmmph!" Only this one

What was the narrator's state of mind during the chess game with the American man? How do you know?

came out of her tight throat.

My parents made many concessions to allow me to practice. One time I complained that the bedroom I shared was so noisy that I couldn't think. Thereafter, my brothers slept in a bed in the living room facing the street. I said I couldn't finish my rice; my head didn't work right when my stomach was too full. I left the table with half-finished bowls and nobody complained. But there was one duty I couldn't avoid. I had to accompany my mother on Saturday market days when I had no tournament to play. My mother would proudly walk with me, visiting many shops, buying very little. "This my daughter Wave-ly Jong," she said to whoever looked her way.

One day, after we left a shop I said under my breath, "I wish you wouldn't do that, telling everybody I'm your daughter." My mother stopped walking. Crowds of people with heavy bags pushed past us on the sidewalk, bumping into first one shoulder, then another.

Analysis

1. When does **the writer** (not the narrator) deviate from standard American English, and why does she do that?

2. How does **the narrator** (not the writer) represent her childhood relationship with her mother?

Writing and Language Test

<https://collegereadiness.collegeboard.org/sat/inside-the-test/writing-language>

The SAT Writing and Language Test asks you to be an editor and improve passages that were written especially for the test — and that include deliberate errors.

Important:

It's About the Everyday

When you take the Writing and Language Test, you'll do three things that people do all the time when they write and edit:

1. Read.
2. Find mistakes and weaknesses.
3. Fix them.

The good news: You do these things every time you proofread your own schoolwork or workshop essays with a friend.

It's the practical skills you use to spot and correct problems — the stuff you've been learning in high school and the stuff you'll need to succeed in college — that the test measures.

Quick Facts

- All questions are multiple choice and based on passages.
- Some passages are accompanied by informational graphics, such as tables, graphs, and charts — but no math is required.
- Prior topic knowledge is never tested.
- The Writing and Language Test is part of the Evidence-Based Reading and Writing section.

What the Writing and Language Test Is Like

To answer some questions, you'll need to look closely at a single sentence. Others require reading the entire piece and interpreting a graphic. For instance, you might be asked to choose a sentence that corrects a misinterpretation of a scientific chart or that better explains the importance of the data.

The passages you improve will range from arguments to nonfiction narratives and will be about careers, history, social studies, the humanities, and science.

Sentence Improvement Exercise

Pay attention to the underline parts of the sentences. They all contain a specific type of flaw or grammatical error. For each sentence, choose the option (A, B, C, or D) that corrects the underlined part. In addition, identify the type of error by filling in the "Error type" blank with a term from the word bank below.

Error Type Bank

wordiness

run-on sentence

parallelism error

dangling modifier

subject-verb agreement and parallelism error

1. Free from British rule after the American Revolution, a strong central government was an idea that many of the representatives attending the Constitutional Convention were wary of.

A. the idea of a strong central government made wary many of the representatives attending the Constitutional Convention
 B. many of the representatives attending the Constitutional Convention were wary of a strong central government
 C. many representatives at the Constitutional Convention felt wary toward a strong central government
 D. many representatives at the Constitutional Convention, wary of a strong central government

Answer:____ **Error type:**_____

2. Being cleaner and longer-burning compared with bituminous coal, anthracite was the first coal widely used in the United States for both domestic and industrial purposes.

A. Both cleaner and more longer-burning compared to
 B. Cleaner and longer-burning than
 C. By burning longer and more clean than
 D. Cleaner as well as longer-burning, unlike

Answer:____ **Error type:**_____

3. At graduation, the speaker assured us that our many courses in the liberal arts had prepared us equally well for the challenges of working and further study.

A. had prepared us equally well for the challenges of work and of further study
 B. has supplied the preparation for challenging work along with further study
 C. leaves us prepared for the challenges of work and further study both
 D. were the preparation for making the challenges of work or further study easier

Answer:____ **Error type:**_____

4. The fruit fly is often used to study genetic mechanisms, because it reproduces rapidly scientists can observe the effects of experiments on several generations.

A. mechanisms, since it reproduces rapidly,
 B. mechanisms, since, with its rapid reproduction,
 C. mechanisms; because it reproduces rapidly,
 D. mechanisms; then rapid reproduction allows

Answer:____ **Error type:**_____

5. This legend about Admiral Nelson, like other naval heroes, are based only partially on fact.

A. like those of other naval heroes, are
 B. like other naval heroes, is
 C. like legends about other naval heroes, are
 D. like legends about other naval heroes, is

Answer:____ **Error type:**_____

THE END