

STEM Writing

Tutors commonly perceive that there is a stronger sense of “correct vs. incorrect” in STEM (Science, Technology, Engineering, and Math) subjects than in other disciplines, which can affect their confidence when tutoring. But you don’t need to be a content expert to tutor confidently and effectively. Think about other subjects: it’s second nature to help a student analyze a book, even if you haven’t read it.

If you are equipped to help students with humanities writing, you’re equipped to help them with STEM writing, too. The following tips are designed to help you realize your ability to do so. After all, at its core, STEM writing isn’t so different from other forms of writing—it’s about posing a question and exploring the answer.

Tip #1:

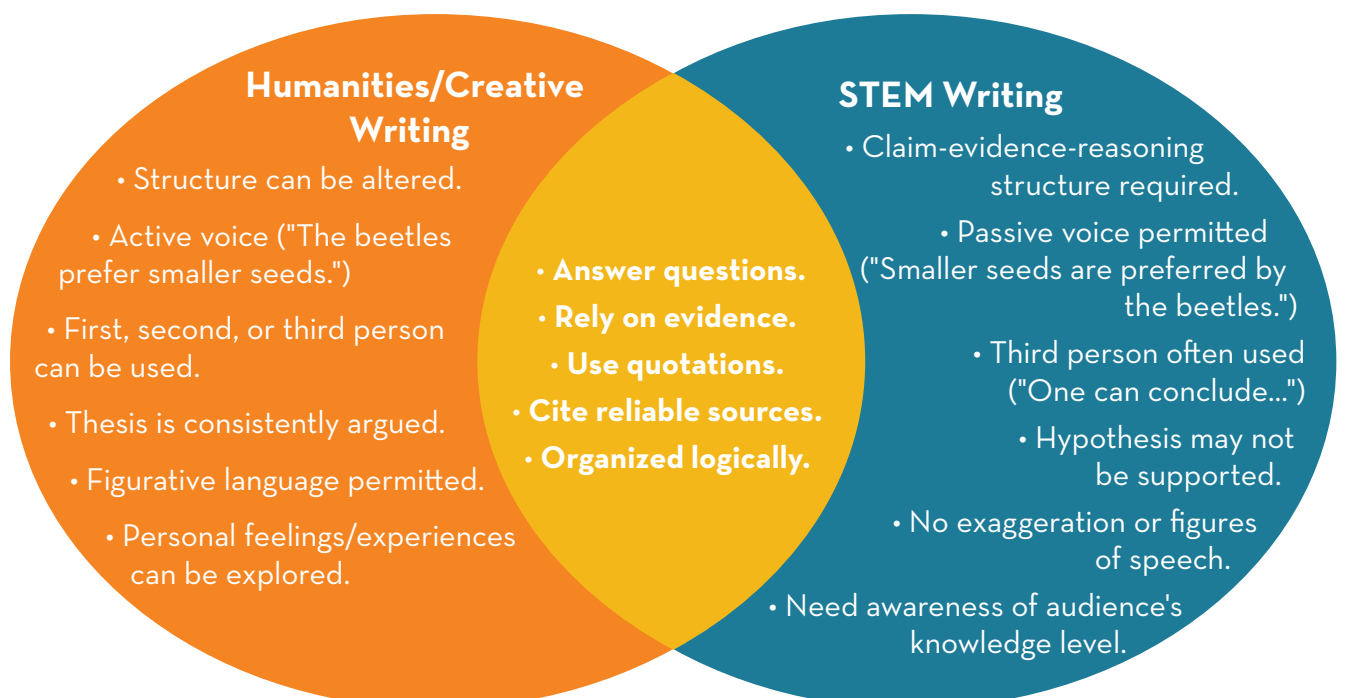
Recognize which writing conventions are transferrable.

All great pieces of writing, whether in the humanities or STEM fields, share fundamental conventions that make them effective. For example, essayists, history researchers, and biologists all understand that building an argument requires asking a central question, finding evidential support, and creating an organized structure. The diagram below explores these shared conventions.

Tip #2:

Recognize which writing conventions are unique to STEM.

Conversely, there are certain conventions that are specific to STEM writing. For example, STEM writing adheres more strictly to the classic “claim-evidence-reasoning” structure than other types of writing. Additionally, STEM teachers sometimes condone the use of conventions like passive voice and third-person perspective in order to encourage objectivity. The diagram below explores these unique conventions.



Tip #3:

Let the student take the lead.

You may not be familiar with a given scientific or mathematical concept, but a lack of subject-specific knowledge can actually be used as a strength to help students come to a greater understanding of the concept at hand. Encourage students to take the lead and inform you about their assignment or project by asking guiding questions and employing helpful strategies to get students started.

What to Say:

"I don't remember how to approach this; can you show me?"

"Why did you decide to [insert action taken by student]?"

"Can you break down the steps in your process?"

"How would you explain this to someone who has never heard of it?"

What to Do:

Take notes as a student explains, then use these notes as a resource.

Have students underline/highlight key steps and phrases in their notes.

Go through the problem or experiment step-by-step to catch inconsistencies.

Look for opportunities for students to collaborate and help each other.

Tip #4:

Accept that content-specific mistakes can happen.

Your role is to ensure that students' writing is clear, that their argument is well-structured and supported, and that they answer the question being posed. Focus on these responsibilities and don't get lost in the content. If a student misunderstands a STEM concept and unknowingly provides incorrect information to you, it is not your responsibility to know better. By helping students develop their ideas and making their writing stronger, you've fulfilled your purpose as a tutor.

Additional Resources:

For further tips on STEM writing, check out:

- ["Guide to Science Writing,"](#) University of Toronto
- ["Improving STEM Students' Writing,"](#) Marshall University Tutor Handbook
- ["Lab Report Template,"](#) Biology Corner