GERMANNA
ACADEMIC CENTER FOR EXCELLENCE

How to Write an Effective Generative AI Prompt

Generative Artificial Intelligence (GenAI) is a helpful educational tool. It is important to note that there are steps involved in composing effective prompts that optimize productive output responses from GenAI. This handout provides tips for writing effective prompts and includes examples specific to various academic subject areas.

For information about what GenAI is and how it works, please see the Academic Center for Excellence's handout, "An Introduction to Generative AI."

Tips for Writing Effective Prompts

Step 1: Provide specific background information.
Provide as much background information as possible with specific details of what output is needed. Use correct grammar and punctuation, and avoid using acronyms. For math and science courses, define the type of equation being used.

- A good prompt will be more than one simple sentence. It may require several sentences to provide the GenAI with the necessary information to provide the desired output.
- A good prompt tells the GenAI what the writer already knows and then explains what the writer needs to know. For example, tell GenAI if you are a pre-calculus student so that it does not respond with higher level calculus information.

Step 2: Provide clear instructions and then refine them.
Think of this process more as a chain of prompts. What additional information can be provided to the GenAI to improve the output based on the previous response? It is a conversation that develops and is refined with each additional response.

- Be concise with questions. For example, asking GenAI to explain a particular error response on a supplied code segment for a Software Design course (ITP 100) will be more effective than asking "What is wrong with my code?"
- Specify what type of output is needed. For example, tell the GenAI if a list, table, or narrative would be preferable.
- For math and science courses, use parentheses to denote the proper order of operations when writing formulas and functions. Parentheses also need to be used to separate the numerator and denominator in rational equations as well as around exponents that include expressions.

Step 3: Think critically.

- Ask who, what, when, where, and why questions.
- Always verify sources or links provided in the GenAI response with library databases or other scholarly sources. The student is fully responsible for the accuracy of work submitted.
- If calculations are involved, always check the performed calculations.

Sample prompts are provided below. Students may copy and paste the full prompt into their preferred GenAI tool to view a sample response. Remember that no two responses will be exactly the same.

Example 1: Writing

"I am a college student in an American literature class. We are reading *The Great Gatsby*, and I need to write a thesis statement that focuses on the symbolism of the green light. I know that the green light refers to money and represents Daisy's side of the peninsula, and I believe it is connected to the American Dream. Provide feedback on how this thesis sounds. 'The green light in *The Great Gatsby* symbolizes the money that Gatsby desires, the love that he cannot reach, and his fight for the American Dream.'"

The sample prompt follows the steps, as shown by the following language used in the prompt:

1. Specific Background Information
   - "college student in an American literature class"
   - "reading *The Great Gatsby*"
   - "a thesis statement that focuses on the symbolism of the green light"
   - "I know the green light means money and represents Daisy's side of the peninsula"
   - "I believe it is connected to the American Dream."
2. Clear Instructions and Chain Prompt Writing
   - "Provide feedback on how this thesis sounds."
   - "Only provide bullet points."
   - "The green light in *The Great Gatsby* symbolizes the money that Gatsby desires, the love that he cannot reach, and his fight for the American Dream."

3. Critical Thinking
- Verify that the changes suggested actually relate to the story.
- Make sure the output vocabulary represents your own voice. If you cannot explain what a word means, that is not representative of your voice.
- Search for examples from the novel to support any new symbolism suggested by GenAI.

Example 2: Conducting Research

"I need to conduct academic research on the topic of concussions in high school sports. Suggest some search terms I can use for library databases to yield the most effective resources for my topic."

The sample prompt follows the rules, as shown by the following language used in the prompt:

1. Specific Background Information
- "academic research"
- "the problem of concussions in high school sports"
2. Clear Instructions and Chain Prompt Writing
- "Suggest some search terms"
- "for library databases"
- "to yield the most effective resources"
3. Critical Thinking
- Verify that the provided search terms are relevant to the topic by testing them in any of Germanna's library databases.

Example 3: Math and Science

"I am a college student in pre-calculus. Provide an example of factoring an equation. Explain the steps involved in finding the solution. Provide ten practice problems with an answer key."

The sample prompt follows the rules, as shown by the following language used in the prompt:

1. Specific Background Information
- "college student in pre-calculus"
2. Clear Instructions and Chain Prompt Writing
- "Provide an example of factoring an equation."
- "Explain the steps involved in finding the solution."
- "Provide ten practice problems with an answer key."

3. Critical Thinking
   - Verify all solutions provided.

Example 4: Networking and Programming

"I am a college student taking ITN 101: Introduction to Networking. We are discussing the process of byte conversion and creating IPv4 and IPv6 addresses. From my understanding, IPv6 models use letters instead of numbers to prevent IPv4 addresses from being reused. Provide a table of letters and the numbers they represent in an IPV6 address. Explain when they would be applied during byte conversion. Create practice problems so I can test my knowledge."

The sample prompt follows the rules, as shown by the following language used in the prompt:

1. Specific Background Information
   - "college student taking ITN 101: Introduction to Networking"
   - "byte conversion and creating IPv4 and IPv6 addresses"
   - "IPv6 models use letters instead of numbers to prevent IPv4 addresses from being reused."
2. Clear Instructions
   - "a table of letters and the numbers they represent"
   - "Explain when they would be applied during byte conversion."
   - "Create practice problems"
3. Critical Thinking
   - Test the provided problems to verify credibility.

Additional Resources

Visit the Academic Center for Excellence for more information on how to appropriately and effectively use generative AI tools.

Generative AI web page
Generative AI Citation Guide handout
An Introduction to Generative AI handout
Using Generative AI as an Academic Tool handout
An Introduction to Generative AI interactive module