

AI as a Learning Partner: A Guide to Effective Prompting

A practical reference for parents, students, and community members on using Artificial Intelligence in education, by Bob Dorsett and Google Gemini.

1. Active Learning vs. Quick Answers

Large Language Models (LLMs) work best when used as collaborative study partners or patient tutors. The goal of effective prompting in education is not to obtain immediate answers, but to create an interactive dialogue that helps students understand concepts step-by-step.

2. The 3-Step Prompting Framework

Step 1: Set the Stage with Context, Role, and Guardrails

Tell the LLM who you are and what role it should take. Set clear ground rules before starting the lesson.

- **Your Role & Level:** Share your grade level or background (e.g., *"I am an 10th-grade student learning college algebra."*).
- **The LLM's Role:** Assign a focused, supportive persona (e.g., *"Act as an encouraging math tutor who specializes in conceptual understanding."*).
- **The Guardrails:**
 - Explicitly instruct the LLM not to solve problems for you (e.g., *"Do not give me direct answers immediately. Guide me with hints, questions, and step-by-step feedback so I can solve the problems myself."*).
 - Require that the LLM provides references to any factual statements. Then check those references yourself.

Step 2: Define the Learning Task Clearly

Structure the practice session. A repeatable sequence builds genuine mastery.

1. **Show a Worked Example:** Ask the LLM to demonstrate one representative problem, clearly explaining the reasoning behind each step.
2. **Guided Practice:** Request a similar practice problem, and explain your thinking step-by-step in your own words.
3. **Targeted Feedback:** Have the LLM evaluate your work first by using Socratic hints. Then have the LLM clarify misunderstandings and provide positive suggestions.
4. **Progressive Difficulty:** Continue practicing similar problems until you feel confident. Then ask the LLM to increase the challenge level.

Step 3: Iterate, Reflect, and Refine

Prompting is an ongoing dialogue. When an explanation isn't clicking, ask for clarification or a new approach:

- **Request Everyday Analogies:** *"Explain this concept using a real-world analogy from sports or everyday life."*
- **Simplify Complexity:** *"Explain that step more simply, as if I were in 8th grade."*
- **Probe Reasoning:** *"Why did you choose that specific formula in Step 2 instead of another method?"*

3. Ready-to-Use Prompt Starters for Students & Parents

Learning Goal	Sample Prompt Template
Socratic Tutoring	"I am studying [topic]. Please act as my tutor. Ask me one practice question at a time. After I respond, tell me what I got right, explain any mistakes, and give me the next question. Do not reveal the final answers until I have completed my attempt.."
Concept Breakdown	"I am having trouble understanding [concept]. Can you explain it in three stages: first in simple terms, then with a concrete example, and finally connecting it to [related topic]?"
Self-Quiz & Review	"Generate a 5-question multiple choice quiz on [subject/topic] suitable for [grade level]. Wait for my answers before displaying the score and detailed explanations."
Writing Feedback	"Review my short essay draft below. Do not rewrite it for me. Instead, give me three specific suggestions to improve clarity, organization, and content."

4. Essential Best Practices & Safety Reminders

- **Always Verify Important Facts:** LLMs occasionally generate plausible-sounding but incorrect information (hallucinations) or miscalculate multi-step math problems. Always cross-check facts with class textbooks, teacher notes, or reputable reference sources.
- **Protect Student Privacy:** Never enter sensitive personal information—such as student full names, home addresses, phone numbers, school student ID numbers, or passwords—into any public AI tool.
- **Use AI to Augment, Not Replace:** The most effective learning happens when students actively think, write, and reason for themselves. Use AI to clarify confusion and spark curiosity, not as a shortcut to bypass homework.