

Effective Questioning⁶

You can promote discourse and stimulate student thinking through effective questioning. This, in turn, develops the habits of mind suggested by the Standards for Mathematical Practice. Here is a list of questions from the *Professional Standards in Teaching Mathematics*, grouped into categories that reflect the mathematical practices.

- ◆ **Helping students work together to make sense of mathematics:**
 - “What do others think about what Janine said?”
 - “Do you agree? Disagree?”
 - “Does anyone have the same answer but a different way to explain it?”
 - “Do you understand what they are saying?”

- ◆ **Helping students to rely more on themselves to determine whether something is mathematically correct:**
 - “Why do you think that?”
 - “Why is that true?”
 - “How did you reach that conclusion?”
 - “Can you make a model to show that?”

- ◆ **Helping student learn to reason mathematically:**
 - “Does that always work?”
 - “Can you think of a counterexample?”
 - “How can you prove that?”
 - “What assumptions are you making?”

- ◆ **Helping students learn to conjecture, invent, and solve problems:**
 - “What would happen if...? What if not?”
 - “Do you see a pattern?”
 - “What is alike and what is different about your method and her method to solve the problem?”
 - “Can you predict the next one? What about the last one?”

- ◆ **Helping students to connect mathematics, its ideas, and its applications:**
 - “How is this process like others that you have used?”
 - “How does this relate to _____?”
 - “Have you ever solved a problem like this before?”
 - “Can you give me an example of _____?”

⁶ Adapted from *NCSM Great Tasks for Mathematics, 6-12* by Schrock, Norris, Pugalee, Seitz, and Hollingshead, 2013
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