

# ***The Art of Questioning in Mathematics***

## **NCTM Professional Standards**

***Help 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?***
- ***Would you ask the rest of the class that question?***
- ***Do you understand what they are saying?***
- ***Can you convince the rest of us that that makes sense?***

***Help students 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?***
- ***Does that make sense?***
- ***Can you make a model to show that?***

***Help students learn to reason mathematically:***

- ***Does that always work?***
- ***Is that true for all cases?***
- ***Can you think of a counterexample?***
- ***How could you prove that?***
- ***What assumptions are you making?***

***Help students learn to conjecture, invent, and solve problems:***

- ***What would happen if...? What if not?***
- ***Do you see a pattern?***
- ***What are some possibilities here?***
- ***Can you predict the next one? What about the last one?***
- ***How did you think about the problem?***
- ***What decision do you think he should make?***
- ***What is alike and what is different about your method of solution and hers?***

***Help students to connect mathematics, its ideas, and its applications:***

- ***How does this relate to...?***
- ***What ideas that we have learned before were useful in solving this problem?***
- ***Have we every solved a problem like this one before?***
- ***What uses of mathematics did you find in the newspaper last night?***
- ***Can you give me an example of...?***