

THE ART OF QUESTIONING IN MATHEMATICS

From The NCTM Professional Teaching Standards

HELP STUDENTS WORK TOGETHER TO MAKE SENSE OF MATH

- “What do others think about what _____ said?”
- “Do you agree? Disagree? Why or why not?”
- “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 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?”
- “Does that make sense?”
- “Can you make a model and show that?”

HELP STUDENTS TO LEARN TO REASON MATHEMATICALLY

- “Does that always work? Why or why not?”
- “Is that true for all cases? Explain?”
- “Can you think of a counter example?”
- “How could you prove that?”
- “What assumptions are you making?”

HELP STUDENTS LEARN TO ANALYZE, INVENT, AND SOLVE PROBLEMS

- “What would happen if _____? What if not?”
- “Do you see a pattern? Explain?”
- “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/she should make?”
- “What is alike and what is different about your method of solution and his/hers?”

HELP STUDENT CONNECT MATHEMATICAL IDEAS AND APPLICATIONS

- “How does this relate to _____?”
- “What ideas that we have learned before were useful in solving this problem?”
- “Have we ever 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 _____?”