

# Higher Order Thinking Question Stems for Mathematics

*NCTM Professional Standards for Teaching Mathematics*

## **Questions that help students work together to make sense of mathematics:**

1. What do other think about what \_\_\_\_\_ said?
2. Do you agree? Disagree?
3. Does anyone have the same answer but a different way to explain it?
4. Would you ask the rest of the class that question?
5. Do you understand what they are saying?
6. Can you convince the rest of the class that that makes sense?

## **Questions that help students rely more on themselves to determine whether something is mathematically correct:**

1. Why do you think that?
2. Why is that true?
3. How did you reach that conclusion?
4. Does that make sense?
5. Can you make a model to show that?

## **Questions that help students learn to reason mathematically:**

1. Does that always work?
2. Is that true in all cases?
3. Can you think of a counterexample?
4. How could you prove that?
5. What assumption are you making?

## **Questions that help students learn to conjecture, invent, and solve problems:**

1. What would happen if ....? What if not?
2. Do you see a pattern?
3. What are some possibilities here?
4. Can you predict the next one? How about the last one?
5. How did you think about the problem?
6. What decision do you think she should make?
7. What is alike and what is different about your method of solution and his/hers?

## **Questions that help students to connect mathematics, its ideas, and its applications:**

1. How does this relate to.....?
2. What ideas that we have learned before were useful in solving this problem?
3. Have we ever solved a problem like this before?
4. What uses of mathematics did you find in the newspaper tonight?
5. Can you give me an example of...?