Questions to try in class

These questions became my script in class. I tried to limit my responses to students to using only these questions. My class changed instantly. There were animated discussions and student queries and discussions that had mathematical content. It became an exciting environment. If you want your classroom to change, try this experiment. Asking the "Why" question is revolutionary and growth producing, both for you and your students.

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?"
"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 your idea makes sense?"

Helping student 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?"

Helping students learn to reason mathematically.
"Does that always work?"
"Is that true for all cases?"
"Can you think of a counterexample?"
"How would 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 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?"
"Compare your method of solution to hers. What is alike and what is different?"

Helping 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 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 ...?"

* This page is an exact copy of page 3 of the Professional Standards for Teaching Mathematics, NCTM, March 1991.

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