Math: Math Questions

What if math caused students to ask big questions?

Maggie wanted her kindergarten math class to be more engaged in math and to realize that there are big questions about life, values, and faith to think about that can be connected with math.

"I gave each child a number, and they stood in random order in a line along the hall. I counted with the children very slowly (1,2,3,4,...), and they arranged themselves in the correct order. I then asked the following questions:

- Are we in the right order? What number are we at?
- Would we go up to a bigger number if Mrs. Verma's class joined in?
- What would happen if the whole school joined in? And if the people who live down the street came? Could we just keep on adding people?
- What if we had all the people in the world? What else could we add?

"I took a class photo (with permission) and added it to the math display along with the question, "I wonder if numbers go on forever?" When we got back to the classroom, we made number lines out of paper and did our usual number work on this subject. At the end of the lesson we came together on the carpet and talked about the big question. I used Steve Turner's poem "God Is Still Making Up Numbers" (PDF) to stimulate their thinking and to make links to what we were doing in Bible class."

What's going on here?

Maggie <u>saw</u> math as a way of stimulating thinking about <u>big questions</u> about life and faith and making space for <u>wonder</u>.

She <u>engaged</u> learners in asking big <u>questions</u> and encountering them in varying ways (listening to the poem, creating a number line, and pondering a range of

questions), <u>applying</u> them to the immediate setting, and making <u>connections</u> between faith and math.

Maggie <u>reshaped her practice</u> by choosing <u>questions</u> and a poem that offered a <u>faith</u> <u>example</u> and could <u>connect</u> math to Bible or religion class. She used the <u>displays</u> and planned for where the students <u>stood or sat</u> in order to <u>connect</u> this to students' experience and guide their engagement.

What does this have to do with faith, hope, and love?

<u>Faith</u> reaches beyond the finite. Christians put their faith in a God who is described as love and who is eternal. Jesus is described as the A to Z of everything; he and his <u>love</u> never end. This endless aspect of God gives <u>hope</u> for the future as it lies with God, who goes on forever and who loves humanity. Human things are limited and finite; God is infinite.

What difference does it make?

The way Maggie designed the lesson not only led to greater engagement but also brought the big questions inherent in the subject to the surface and connected math to Bible or religion class. Maggie's foregrounding of big questions in math gave her students permission to discuss this type of questions in a context other than religion class.

Where could we go from here?

Other aspects of math can raise big questions and be taught in a way that brings them to the surface. For example, patterns in math can prompt students to ask, "How did the patterns get there?" We can go through the curriculum and ask ourselves, "What big questions could this subject stimulate? How do they <u>connect with faith</u>? How could my teaching bring this to the surface?"

Digging deeper

Maggie encouraged her class to think about <u>big questions</u> about life and faith in math. Sometimes, but not always, a failure to think about these questions is a result of apathy, which is a lack of interest and involvement in the world. Apathy is not being fully alive. Jesus said he came to bring fullness of life (<u>John 10:10</u>), and eagerness to explore big questions can arise from faith. At other times not asking questions is because we need to be given permission emotionally to do this in unfamiliar contexts.

The glory of God is a man fully alive. Irenaeus

Curiosity and questioning are not the opposite of faith; they can grow out of and feed faith by setting us off in search of answers. Big questions can be asked not only from outside but also from within a relationship with God. Curiosity is not idle speculation, and questioning is not doubt; they are part of being alive to God's world. In the Bible people ask the big questions, like "Why do the wicked prosper?" (Job 21:7).

Curiosity and asking questions can be part of a <u>wonder</u> at God's world and taking God, others, and the world seriously. Curiosity can be seeking answers as part of a lived faith.

The first key to wisdom is defined, of course, as assiduous and frequent questioning. Peter Abelard

The important thing is not to stop questioning. Curiosity has its own reason for existing. One cannot help but be in awe when he contemplates the mysteries of eternity, of life, of the marvelous structure of reality. Albert Einstein

For Christians, questions are asked within a framework of faith, from within a relationship. That does not mean the hard questions about key issues of faith cannot be asked. To use St. Anselm's phrase, it is a matter of "faith seeking understanding."

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