

Thinking Thursday: Encouraging Critical Thinking in Math

>> With Ontario's renewed math strategy, there is a provincial focus on helping students gain the math knowledge and skills they need for the future. This is also a focus at the York Catholic District School Board and at St. Michael the Archangel Catholic Elementary School.

Mathematics and mathematical thinking have been important cornerstones in St. Michael the Archangel's school improvement plan, and inspiration behind their school's Thinking Thursday math initiative.

>> Every year, schools get together and they put together their school improvement plans. And also when we did that back in the fall, we basically were able to look at provincial board and school data that indicated that in the area of thinking, our students were not performing as well as in the other categories, in knowledge and application, let's say. So we decided that we needed to come together and create a plan to be able to give students an opportunity to practice their thinking skills -- critical thinking skills, planning skills, critical thinking skills, through mathematics. So we decided that putting together options for students to practice problem-solving skills would give them that opportunity to do that.

>> Every Thursday, classes work on different open-ended math questions that promote collaborative communication, creative processes and critical thinking to problem-solve.

>> Thinking Thursday is a day of the week that we pose a thinking type question to the children. They come together collaboratively and in a small group to work out the problem of the day.

>> Thinking Thursday kind of developed over time. It was more of a, let's throw out questions that -- not necessarily on what you're focusing right now in the classroom or in your textbook or in your math program, but questions in that where the students can work together and pull out the information that's needed and solve the problem together. Then it slowly evolved into something that was this three-act math task which, in the end, it's working out really well, because it starts with this provocation, which is a video or a picture, something that is relatable, something that they can relate to in everyday life, something authentic.

>> A Thinking Thursday three-act math task is a three-part activity structure that caters to patient problem-solving, reasoning, proving and reflection. Students work in groups to collaboratively solve the problem. In act one, the teacher introduces a provocative visual or video with real-world relevance, and steers the conversation. Students discuss their observations and decide on a mathematical question to focus on about the situation. In act two, the teacher provides information that students think they need, and guidelines for



exploration. The students identify information needed to answer questions, as multiple methods are tried and tested. In act three, the teacher compares and connects students' ideas and reveals the answer. The students discuss the strategies and solutions they used.

Thinking Thursday is particularly beneficial for students with LDs, because of the use of explicit instruction and allowing for variation in how a math problem can be solved.

>> It's really important with students with LDs, because with that explicit teaching from the teacher and that modelling on how to solve the Thinking type Thursday questions, being able to extract the most important information, being able to then choose the manipulative that will best help solve that problem, and then being able to manipulate and transfer it into their learning is really important.

>> We also wanted to make sure that we give students opportunities to practice lots of different strategies, and to hear the teachers talk about how they might approach the problem from sort of a thinking and a planning perspective. So a lot of that rich dialog, a lot of that sort of learning floats on a See and Talk has been very helpful to our students with LDs.

>> Thinking Thursday is structured in a way that allows students with LDs to use their strengths to solve a math problem. Students with varying abilities have the opportunity to come together, learn new strategies from their peers and share their own ideas. Thinking Thursday first started as an educator-led initiative with the ultimate goal of empowering students to take ownership of their own learning.

>> One of the important parts around the Thinking Thursdays is the fact that when we first started the process, that we were talking a lot about the fact that we were looking at guided practice, a lot of think-alouds, a lot of initially more teacher-directed. But as our Thinking Thursdays would run their course at the school, that eventually there would be more of a focus on releasing the responsibility of the learning to the students. So I think that's a really important sort of feature of the initiative at our school, because it allowed for a lot of that direct instruction that we know our students with LDs often times need. It allowed them opportunities to work with their peers as well, so we have mixed ability groupings. Often times, there are sometimes our LD students, sometimes other students, but they can sort of take turns in terms of leading the group activities.

One of the things that's made Thinking Thursdays successful at our school and for it to catch on the way it did was, we spent a lot of time promoting Thinking Thursdays with not only the staff, but also with the students. So trying to create a bit of a buzz in the school through morning announcements, through posting student work up in the hallways so that students could see what other classes were doing. We also made sure it was a regular feature in our newsletter so



that parents knew not only what we were going to do Thinking Thursday, but how we were connecting what we were doing to our school improvement plan. The most important is to, if you can, create a good buzz about the program, but then also to make sure that the teachers have what they need to be able to implement and [INAUDIBLE]. So they need the support as well.

>> For more information about Thinking Thursday, visit LDatSchool.ca.

