

SMART Showcase School Profile

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Math Is Something to Sing About at Port Hope High

By Jane Chamberlin Grove

Sandy Fischl knows that when students can sing a quadratic equation, she's done her job. Singing isn't exactly a requirement in Fischl's math classes at [Port Hope High School](#) in Ontario, Canada, but learners have to be prepared to be creative, do a little experimenting and get interactive. Because that's how Fischl thinks students learn math best.

When Fischl started teaching 28 years ago, the blackboard and chalk approach was the norm. It was more difficult to connect the various topics in her curriculum because it was hard to apply math concepts and make them seem real to her students.

That approach changed when Fischl's superintendent discovered the SMART Board™ interactive whiteboard four years ago and purchased two for the high school. At the time, the school's scores on standardized provincial tests were on the low side for the applied courses, including math. Fischl was given a SMART Board interactive whiteboard, and she resolved to go cold turkey – "I decided I would put it right in the middle of my blackboards and just dive in and not use my blackboards for anything."

Interactive lessons for all

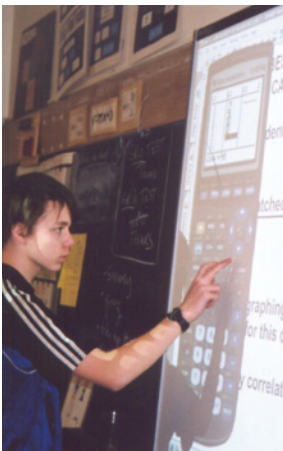
Port Hope now has 13 SMART Board interactive whiteboards, and they are used in all departments. Fischl is just one of many teachers at her school using SMART products to make learning more creative and interactive. As a SMART Showcase School, Port Hope hosts educators from all over Ontario as they attend classes, take part in workshops and talk with teachers about using SMART products. Fischl is preparing to share her full complement of math lessons with teachers at other schools. "I'm almost to the point where I'm comfortable sharing my entire course lessons," she says. "Then teachers can take them and make them their own."

Lesson sharing within Port Hope is already second nature. Fischl's lessons, created in SMART Notebook™ collaborative learning software, are on her own school's common drive and used constantly. These highly visual, participatory lessons appeal to students by using humor, creativity, interaction and real-world relevance. "If the kids can experiment and actually play with manipulatives, they're going to be engaged, and learn and improve," says Sandy.

Part of the reason Fischl's lessons work so well is that they speak to students in one of their favorite languages – digital-ese. "I think these kids are wired to use all this technology and can relate better to this type of learning. They're more confident when they're using technology because it's familiar to them." And it's easier to make lessons appealing when you use the SMART Board interactive whiteboard, says Fischl. "The lessons are colorful, and there are graphics and 3-D demonstrations. You just can't do that on a blackboard or overhead."

Making math real

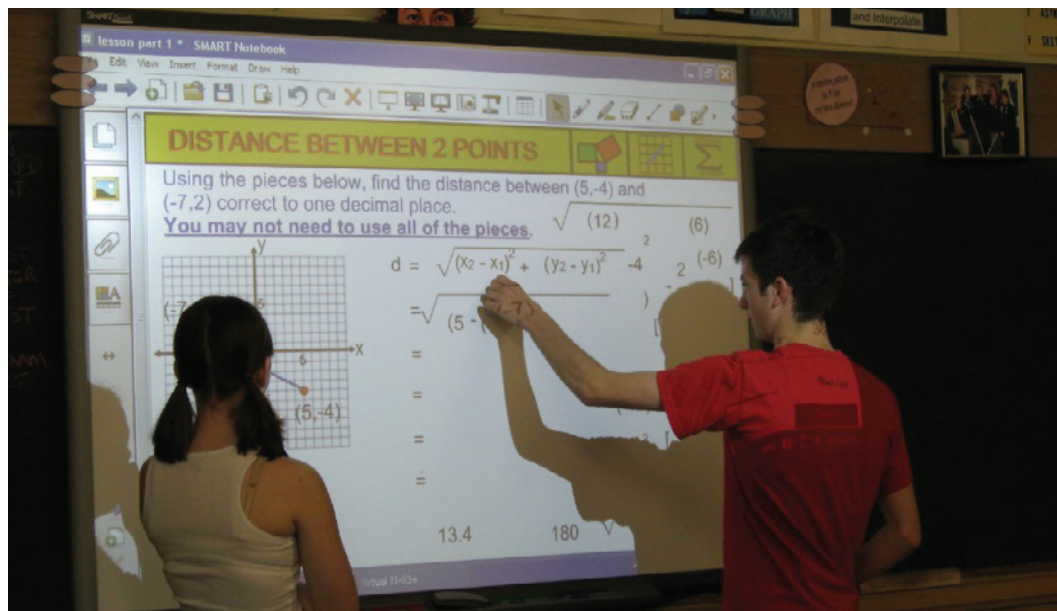
Like many of her Port Hope colleagues, Fischl is proficient at using technology to create lessons that actively engage students. She often opens her classes with fun, interactive math starters displayed on the SMART Board interactive whiteboard, and she also uses the interactive whiteboard to demonstrate



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Math Teacher
Port Hope High School
Port Hope, Ontario, Canada



If you would like to visit Port Hope High School to talk with educators about their success and see firsthand how they're putting SMART products to work, visit the [SMART Showcase School](#) section of our education website. From this page, you can also find a [Showcase School or District in your area](#).

content in ways that captures students' imagination. A favorite is her volume demo, where she puts a virtual fish in a virtual fish tank to see how much the water level will rise.

Giving students examples of real-world math problems not only engages them, it also helps them conceptualize better. "If I'm reading a problem about a particular bridge," says Fischl, "and we need to find out how high it is off the river, I can Google the exact bridge and the students can see that it's real life we're looking at, not just a triangle or parabola being drawn on a blackboard."

Fischl knows that humor never fails to draw students into a math topic. She often shows videos on the interactive whiteboard, and one that leaves a lasting impression is about the quadratic formula. The video features a silly song that tenth-grade students love to sing. "Two years later, when I have the same students in grade 12, I ask them what the formula is and they don't say it. They sing it – exactly the way it was done in the video, with the same phrasing and everything!"

Fischl finds that transformational geometry lends itself particularly well to highly visual SMART Notebook lesson activities. She uses the software's Flip Tool and Cloning Tool to take a graph of a function and alter its shape and size. "It's so slick," she says. "When I discovered how to do that I was just amazed. I used to just use overheads, layering them over one another. But with the SMART Board, you can actually see it moving. Students really like it."

Proof for the learning equation

The increased interactivity and creativity in Port Hope classrooms has had a major impact on the school's success. "Our provincial math test scores have jumped dramatically," she says. "The year before I got the SMART Board, I had 28 percent of applied students working at provincial standard. After the SMART Board it went up to 52 percent. Since then it's grown every year. For our academic students, it went from 61 percent to 88 percent." These increases can't be attributed solely to the use of SMART products, but Sandy feels a strong link can be made between the SMART Board interactive whiteboard and student success.

Students at Port Hope also recognize the benefits of having SMART products in the classroom. One of Fischl's math students, Jordan Andrews, wrote that "the SMART Board helps keep students' attention. By keeping that attention in a creative ... atmosphere, mathematics becomes clearer and stays with the students."

The school's improved test scores certainly indicate that information is staying with students better, now that the SMART Board interactive whiteboard is in use in many Port Hope classrooms. And if the ability to get musical about the quadratic formula is any indication, Fischl's students are proof that a creative approach to math takes learning to new levels. **EC**

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