SEVEN OAKS SCHOOL DIVISION
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Scientific Methods

How Students Experience Science in the Seven Oaks School Division

The world around us is one big science lesson – at least it is for students in the Seven Oaks School Division.

"Our focus is more on the development of students as life long learners," says Rick Kraychuk, a teacher at West Kildonan Collegiate. "The problem-solving and critical thinking skills they develop will help them to better understand the world in which they exist."

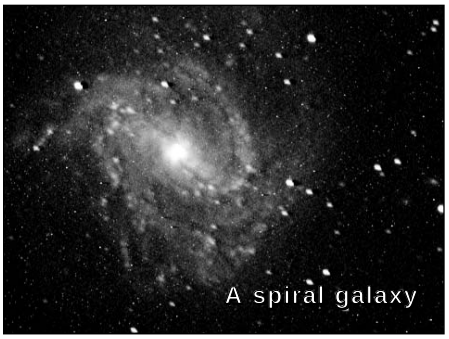
Students in Seven Oaks School Division have plenty of opportunities to develop their science skills. The entire division emphasizes "hands-on" experience, encouraging students to apply their scientific knowledge in a number of ways.

Some Far Out Lessons

One example of hands-on learning can be found in the Remote Telescope Project, which brings the study of the stars down to Earth.

"The re-introduction of Astronomy has provided an opportunity for students to actually take 'real-time' images of bodies in the night sky," explains teacher Rob Edwards, also of West Kildonan Collegiate. "Using the Internet and a program developed at the Charles Sturt University in Australia, students can take control of a 12-inch reflecting telescope located in Australia, point it at chosen objects and take a picture.

"The picture is recorded according to the exposure time set by the student and shown on the monitor the moment it's taken. The student can 'talk', via a computer notepad, to an astronomer shadowing the session at the telescope. Any problems or questions the student has can be answered immediately – all from half a world away!"



A spiral galaxy

Sombrero Galaxy – 70 million light years away

Magic Makers and Space Explorers

Maples Collegiate has its own unique way of spotlighting science: the Maples Magic traveling science magic show.

Students research, optimize and develop flashy chemical reactions into live stage performances for early and middle years students. The show lasts approximately one and a half hours, which also includes a workshop session.

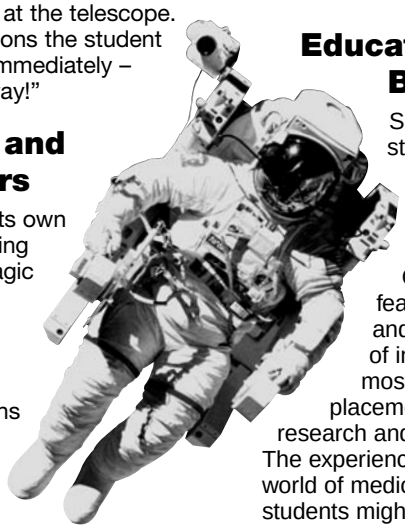
During the workshop, students create their own "chem-magic" by either trying some of the demonstrations or constructing a "make and take" chemistry activity under the guidance of the Maples Magic team.

This year Maples Magic is giving six performances inside and outside the division. They are also presenting a workshop to teachers on how to create a Maples Magic show in their own schools. (Please forward any questions to Melanie Richard or Conrad Datzkiw at Maples Collegiate.)

Other Maples students learn about the magic of space exploration – thanks to the Maples Space Exploration Academy.

"The Maples Space Exploration Academy is an interdisciplinary program that includes courses such as Physics, Mathematics, English, History and Topics in Science," says Jeff Cieszecki, one of the teachers involved with the Academy. "Students also participate in a number of space-related activities."

These activities include the Planetary Society's "Red Rover Goes to Mars" essay contest (the winner spends a week with NASA's Jet Propulsion Lab), NASA's S'COOL weather project (where students complete observations used in evaluating satellite weather images) and rocket building to help study Newton's Laws.



Education is the Best Medicine

Some students look to the stars for their science lessons while others look a little closer to home. The inter-disciplinary Bio-Med Internship Program at Garden City Collegiate features enriched biology and chemistry classes, tours of industrial laboratories and – most significantly – student placement at various science, research and health care facilities. The experience adds new insights to the world of medicine that many Grade Twelve students might not otherwise receive.

"In high school, students may have an idea of what a career in medicine would be like," says Garden City teacher Gerald Rosner. "This experience gives them a better sense of the reality, seeing real people as they do their jobs."

Young Scientists At Work

Of course, science learning isn't limited to high school. A great deal is happening in the division's elementary schools as well.

"Currently, the focus is on the new "Design Process" aspect of the curriculum," says Vice-Principal Howard Ryant of the science classes at École Constable Edward Finney School. "Students are asked to solve technological problems by designing solutions and building them.

"For example, Grade Three students are building bridges. Grade Five students are designing weather instruments. Grade Two and Four students are designing animal habitats. Kindergarten students are experimenting with making paper."

The End Result

Science also teaches lessons that extend beyond the subject matter.

"Aside from the obvious goals of the discipline, we work towards assisting the development of students' language skills, understanding of numbers, social and communication skills and their use of technology," says Rick Kraychuk.

Gabe Kraljevic, also of West Kildonan Collegiate adds, "Healthy skepticism, attention to accuracy and truth in communicating facts are all hallmarks of science, and we hope that students can also develop these attributes in their everyday lives."

An Experiment in Excitement

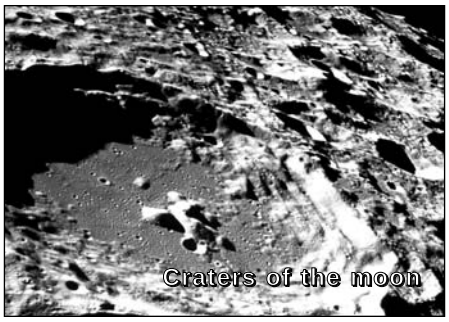
An All-New Science Camp Will Bring Science to Life for Grade Four Students

This May, Grade Four students from the entire Seven Oaks School Division will be part of a whole new learning experience – one that will put the "fun" into the fundamentals of science.

This year, the division will present its first ever Science Camp. Over the course of a week, every Grade Four student throughout the division will get to spend a day at the Manitoba Museum and the Planetarium.

The day will be filled with activities designed for fun… while building on the lessons taught in the classroom.

"We want to make learning relevant by connecting it to the expanding world of students," says Howard Ryant, Vice-Principal of École Constable Edward Finney School and one of the camp organizers. "That's why we chose the planetarium and museum as our sites. We want students to know that what they learn in the classroom has applications in the real world."



Craters of the moon

From Idea to Reality

The idea for a science camp was first presented by Terry Bilyk, Vice-Principal of West St. Paul School, who wanted to give Grade Four students an opportunity to be immersed in a science-based learning experience.

"Typically Grade Five classes go to arts camp and have that experience. Grade Six is a transition year for many schools and a year when many students get to take part in outdoor camp experiences," explains Bilyk. "We wanted Grade Four students to have the opportunity to embrace what they're learning in science and to run with it."

Learning by Doing

"All activities will be drawn from the Grade Four curriculum, focusing on Light; Rocks, Minerals and Fossils; Habitats and Communities; and Sound," explains Ruth Shrofel, Principal of R.F. Morrison School and the third of the camp's trio of organizers. "We also hope to interact with the planetarium and museum coordinators as scientists working in their field every day."

Students will tackle activities with a homemade toolkit (a plastic bag containing such items as elastic bands, scissors, tape, beans and rice) and with what they've learned in class. A typical camp day will start in the planetarium with a presentation about light, followed by a hands-on workshop where students will experiment with lenses and bending light.

Next up is a scavenger hunt that will have students solving puzzles and scouring the museum – with proper supervision of course – to find their answers. Rather than being hidden, answers will be based on museum displays so students will have to use a combination of reading and observation skills to finish their lists.

The day ends with students learning about sound by making their own percussion, wind and string instruments… followed by an impromptu "concert" where students use their musical creations.

Real Science for the Real World

Museum and planetarium staff will play an integral part in the camp experience, both as teachers and as role models.

"Kids still often have an image of what a typical scientist is," says Terry Bilyk. "They think of scientists as people wearing lab coats and carrying test tubes. The staff at the museum and the planetarium will be introduced as scientists to give them a broader perspective of who scientists are and what they do.

"We want students to see that science is not a scary subject. We need more kids interested in science and in being the scientists of the future. We hope this experience helps them look at science in a different and more exciting way."

Animal skull

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