

YES I CAN! SCIENCE

**Susan Stiff
Dr. Thomas Stiff
And
Diane Hammond***

ABSTRACT

The United States program to land a man on the moon in the 1960's owes much of its success to the huge wave of public support that penetrated deep into the education system. It was the feeling of being on the threshold of a major historical scientific event that fueled huge investments in both science education and scientific enterprise. We will always recall our excitement, as students, teachers, or parents, as the space program dispelled our doubts, broadened our boundaries, and fired our imaginations into the future. A successful mission to land humans on Mars requires the same national and international "spirit of scientific high adventure".

The objective of the YES I Can! Science Project at York University in Toronto, Canada, is to bring curriculum-based Science resources into the classroom. The intent of these resources is to provide teachers with exciting and scientifically accurate educational tools to inspire their students, and to rekindle and refocus the spirit and excitement of yesterday into the endless possibilities of tomorrow.

In this presentation, YES I Can! Science team members will describe the evolution of this extraordinary national project, share relevant resources, and discuss the direction Science education is taking for students around the world through this exciting project.

BACKGROUND

Initially funded by Industry Canada and currently hosted by the Faculty of Pure and Applied Science, York University, Toronto, Canada, the mandate of the Yes I Can! Science project is to design and develop a database of curriculum resources and make it freely available to K-12 Science teachers around the world. The database contains the following resource types:

- classroom lesson plans;
- labs, demonstrations and classroom activities;
- assessment tools, performance indicators; and
- background information for teachers.

All resource types are directly linked to curriculum outcomes.

* Faculty of Pure and Applied Science, York University, Toronto, Canada, Web site: <http://yesican.yorku.ca>, email at science@yesican.yorku.ca. Susan Stiff is Project Manager, Dr. Thomas Stiff and Diane Hammond are Curriculum Consultants

MARS “EXPEDITION”

Virtual expeditions offer teachers the opportunity to take a constructivist approach to the teaching and learning of Science. Students of all ages are able to join the larger scientific community in real-life experiences linked to curriculum outcomes. Expeditions kindle interest and excitement of Science and motivate teachers and students alike.

The Yes I Can! Science MARS “expedition” site is designed to support the goals of both the Mars Society and the Haughton-Mars Project. Students and teachers are linked directly to both sites through a classroom interface. The intent is not to duplicate the work of either the Mars Society or the Haughton-Mars Project, but rather to deliver information from both organizations in an educational context.

Through the Yes I Can! Science site, teachers are provided with an overview of the Mars Arctic Research Station, the use of Haughton Crater as a Mars analog and the goals of the scientific research underway. The “Classroom” segment of the site links teachers to the field reports and updates from the Haughton-Mars project and supporting classroom activities with particular emphasis on the following grades and subjects:

- Grade 4 Soils, Rocks, Minerals and Erosion
- Grade 6 Space
- Grade 7 Earth’s Crust
- Grade 8 Water Systems
- Grade 9 Space Exploration
- Grade 10 Sustainability of Ecosystems
- Grades 11, 12 Earth Processes, Earth Resources, Earth Systems, and Historical Geology

Teachers are directed to access the science reports from the Haughton-Mars Project site and then use the Yes I Can! Science database to find appropriate background information and classroom activities. Based on a train metaphor, each “Station House” of the “Data Engine” allows the teacher to search the curriculum outcomes and linked resources in a unique way. Participants of this session will be treated to a demonstration of the functionality of this database.

The exceptional idea behind York University's YES I Can! Science database is that by allowing keyword searches within a specific grade and subject area, teachers across Canada and around the world are able to align the resources they find inside the database to their own regional, local, or school curricula.

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