



TOMATOSPHERE™

Tomatosphere™ uses the excitement of space exploration to teach the skills and processes of scientific experimentation and inquiry. Students investigate the effects of the space environment on the growth of food that will inevitably support long-term human space travel.

The program, operated by *First the Seed Foundation in the United States*, involves over 22,500 Kindergarten to Grade 12 classrooms across Canada and the United States.

In 2012, Tomatosphere™ was honored by Canada's *National Science and Engineering Research Council* as the best project promoting science in Canada.

Tomatosphere™ has strong connections to science curriculum and helps students develop science process skills through inquiry. The project enables students to make a contribution to real-life research related to the development of seeds with a high germination rate for prolonged space travel.

This year, students in the class of \_\_\_\_\_ will have the opportunity to contribute to this project by incorporating the Tomatosphere™ experiment into the regular science curriculum. Food availability and life support are major limiting factors in extended space exploration. Plants will be needed to provide a source of fresh, nutritious food and to produce a vital life support system - including oxygen, fresh water and carbon dioxide uptake. Scientists need to know if space travel affects plant germination and plant growth, before these extended missions can take place.

The tomato seeds used in the experiment are a plum tomato seed from traditional, conventional sources and have **not been altered** through any means (including biotechnology). They are a variety of seed from HeinzSeed - H9478 F1.

Students will use two groups of seeds – a control/untreated group and a group of seeds that have been to the International Space Station and returned to Earth. This is called a “blind test” in that we will not know the origin of the seeds (i.e. which group is which) until we complete the experiment and submit our results.

The students will observe:

- The time required for each seed to successfully germinate.
- The percent of successful germination in each treatment.

Students will learn about the exciting world of science, space exploration, agriculture, food and nutrition. The exciting connection for the students is the emphasis on the life support environment that is required in space. However, applications from this experiment are also made to the sustainability of life here on Earth.



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Parents/guardians who are interested in finding out more details about the Tomatosphere™ program can visit the website of *First the Seed Foundation* at <http://www.firsttheseedfoundation.org> the organization which coordinates the Tomatosphere™ program in the United States.



FirstTheSeedFoundation.org