

An Orion spacecraft with astronauts aboard is heading to Mars. On the outside of the spacecraft are several compartments for stowage of supplies and other vital equipment. These stowage compartments are sealed, with pressure and temperature conditions similar to those inside the spacecraft where the astronauts live.

The astronauts suddenly hear an alarm indicating a problem with one of the external compartments. They perform a spacewalk a few days later to investigate the problem and find that one of the stowage compartments has been punctured by a micrometeorite. It is the compartment that contains tomato seeds – the tomato seeds that will be used to grow food in specially sealed greenhouses after the crew lands on Mars.

The hole in the stowage compartment is patched by the spacewalking astronauts. However the hole has exposed the seeds in the compartment to the harsh space environment (-80 degrees Celsius and almost no atmospheric pressure) for several days. Yikes! Although the stowage compartment has been repaired, the astronauts are now wondering "How will this affect the seeds that will be used to grow tomatoes on the surface of Mars?"

We will be growing two different types of seeds - the seeds that were in this stowage compartment (non-control group) and a control group of seeds that have always been on Earth.

---

Tomatosphere is sponsored by [Let's Talk Science](#), the [Canadian Space Agency](#), [Heinz Canada Ltd](#), [HeinzSeed](#), [Stokes Seeds](#), the [University of Guelph](#), and [First the Seed Foundation](#).