

22. Busta Slime

Classroom Activity: To design and construct a machine that can transport 1L of "radioactive slime" (a.k.a hair gel in a bottle) from the floor to a container on the table. The budget to build the device is \$25 and the containers must not be moved during testing. The machine can only be started with one action, after which it has to be fully automated.

Grade(s): 10, 11 and 12

Course(s) and Strand(s): Science

Science, Grade 10 Academic

C. Chemistry: Chemical Reactions

Science, Grade 10 Applied

C. Chemistry: Chemical Reactions and Their Practical Applications

Physics, Grade 11 University

C. Forces

Physics, Grade 12 University

B. Dynamics

Physics, Grade 12 College

B. Motion and its applications

F. Hydraulic and Pneumatic Systems

See supplementary document *Ontario Curriculum Alignment for Engineer-in-Residence Secondary Classroom Activities: Science and Technological Education* for relevant overall and specific expectations.

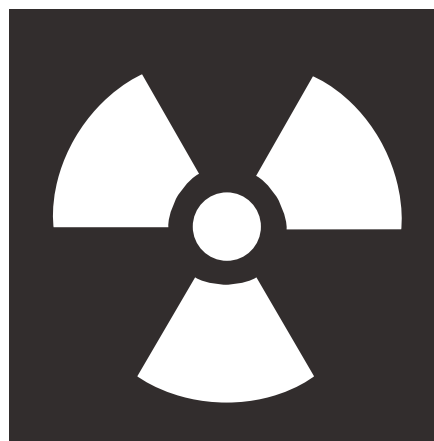
Type of Activity: Classroom (small group work)

Assessment Categories:

- Knowledge and Understanding
- Thinking and Investigation

Preparation:(time varies)

Time needed to complete the task: varies - testing took one class



Activity Description:

The problem is posed to the students: Build a machine for \$25 that will transport the "radioactive slime" from the floor to the container. The machine has to operate automatically once started. Students may use everyday materials and some science lab equipment to build and test their "slime busting" machines.

Tips:

- One method is to mix vinegar and baking soda in a 4L pop bottle. This generates gas with enough pressure to send the bottle of slime through a plastic tube into a beaker on a desk.
- Another method employs a sling shot mechanism to send the slime bottle into the container on the desk. A back stop on the recipient container ensures the slime will land in the container.