

The Fission Game

Purpose: To demonstrate how a large atomic nucleus can be split into two smaller particles, which produces energy for nuclear power.

- 1) Each student gets two balloons (neutrons) to hold and they stand together in a close-packed group.
- 2) When hit with a balloon that is in the air, the student will “fission” by throwing their two balloons into the air.
- 3) The reaction starts with a balloon (source neutron) being thrown into the group by a volunteer.
- 4) Add “control rods” (a person who grabs balloons out of air making them unavailable to cause fission) one at a time. Discuss how adding control rods affect the chain reaction: more control rods = slower reaction. Keep increasing the number of rods until reaction proceeds very slowly or not at all.
- 5) Discuss chain reaction, critical, sub/supercritical, and reactor control.
- 6) If there is enough time, discuss how you use fission to make electricity, then discuss different electricity generation types.