

The Bean Game

Common to most social studies, science and environmental education curricula are standards that address the effects of interactions between humans and natural systems, limiting factors, carrying capacities, the relationship between scarcity and choice, and the distribution of natural resources. Cheryl Dow and Tracy Benson from the Waters Foundation, Systems Thinking in Schools project created a role-play simulation that helps students experience many of these essential curricular concepts. "The Bean Game" traces the effects of multi-generational families over time as each generation (great great grandparent great grandparent, grandparent and child) decides what resources they will need to live healthy, prosperous lives. The game is structured so that each family has access to a different kind of consumption utensil (e.g. spoon, small cup, tweezers) in order to access and consume resources (represented as pinto beans) from a large tub that holds the world's resources. Knowing that the game does not incorporate renewable resources, students quickly see a rapid depletion over time and the effects of mental models, greed and the type of utensil has on the rapid depletion of world resources. Typically, at first family members get competitive and try to take as many beans (resources) as they can. A fun-loving animosity develops between families who have utensils that enable them to collect many beans (small cups) versus those who have clear limitations (tweezers). Towards the end of the simulation the youngest generation is faced with an alarming depletion of available resources therefore generating an emotional reaction that fuels a lively debrief. A stock-flow map is a helpful tool when debriefing this simulation. Students first map the system they experience, a system void of renewable resources (see below in black), and then add leverage actions to the map that would help sustain the system (red). Students leave with a sense of empowerment knowing that they have an effect on both the outflow (consumption of resources) and the inflow (renewable resources). The experience of this game and debrief will hopefully increase their awareness and impact their future behaviors.

