7.2 Nuclear Reactor Game (From old KLA Science Syllabus 1999)

Aim
This is an outside game, which as well as challenging students teamwork and skills, teaches the difference between balanced and unbalanced forces.

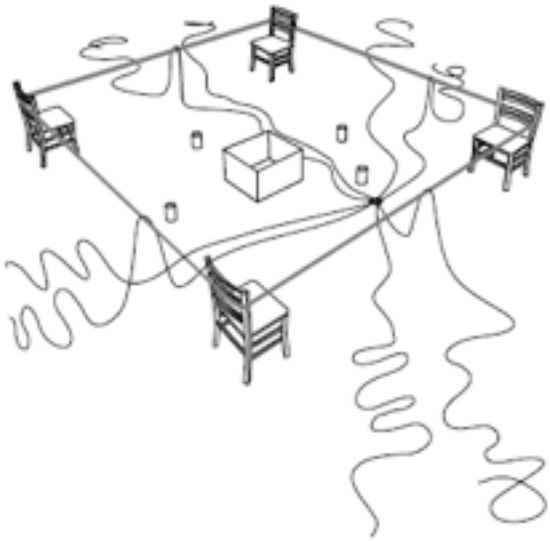
Equipment
Large open box
4 soft drink cans (with some weight about 50mls of water inside)
One Large rubber band (that will stretch easily over a can but close on it when relaxed).

8 pieces of strong string each 2.5m long

4 chairs
Rope or ribbon barrier about 13m long

Method

1. Setup the Nuclear Reactor area as shown in the diagram. It should be about 3m square with chairs in each corner and a rope tied around the chairs about 80cm high.
2. Tie each string to the large rubber band. Make the knots so that there are pairs close together on a north, east, south and west side of the band.
3. Once tied , put the band in the middle of the reactor and have two strings extend to each side of the barrier, one above the barrier, one below the barrier.



4. Students work together in teams of eight. One student on each string. The goal is to get each can (Fuel rods) into the reactor (Box) as quickly as possible.

Students may not enter the area inside the boundary, as this is highly radioactive!

Results

Discuss the forces needed, to effectively complete the task. How was balanced forces applied?