Grade Level:
Grades 5 - 12

Activity Time:
30 minutes

Preparation Time:
15 minutes

Grouping:
Pairs

*Adapted from
http://www.eweek.
org/2002/discover
e/activities/archive
.shtml

Radioactive Golf Balls

Objectives:
- To work in teams to solve a problem
- To work within a very tight deadline

Materials:
For each group of students, you will need:
1) 2 brown paper lunch bags
2) 5 golf balls (placed inside one of the paper bags)
3) 4 4" pieces of string
4) 4 drinking straws
5) 2 skewers
6) 4 paper clips
7) 4 rubber bands
8) 5 Post-It notes
9) 3 push pins
10) 1 pencil
11) 1' tape

To test the devices, you will need:
1) Tape measure
2) Stopwatch

Directions:
1. Break the class into teams of 2 and hand them their materials.
2. Tell the group that the golf balls are radioactive and the object of the game is to move all the golf balls from one paper bag to the other without touching the golf balls or tilting their bag.
3. Each group has 20 minutes to construct a device that can transport 1 golf ball at a time using only the supplies provided. The teams may alter the supplies in any way necessary.
4. Place both bag #1 and bag #2 on the floor approximately 8 feet apart. The bags are to sit on the ground with the opening toward the ceiling. To ensure that the bags do not move tape both bags to the floor.
5. No part of a person's body or clothing may touch the golf balls. If a person touches a ball, or if a ball gets dropped, there is a contamination leak! The leader (you) must return the contaminated ball back to bag #1.
6. The team that moves all their balls in the shortest amount of time wins.
7. Have a discussion on the differences of each team's device. Which device was successful? Which ones weren't, and why? Did having a time limit affect their end product? At the end, make sure to point out that there is no single way to get the task done – there are many methods that will work.