MATERIALS

The following is a suggested list of materials needed to complete this challenge. The quantity will depend on the number of students participating. Alternatives can be used if necessary.

- Digital scale or balance (1)
- Measuring tape (1)
- Rulers (1 per team)
- Ream of paper
- Oatmeal canister (used as a test chamber)
- Flashlight
- Ultraviolet reactive (“solar”) beads
- General building supplies for teams to assemble their radiation shields. These could include:

aluminum foil
balloons
skewers or stirrers
binder clips
bubble wrap
buttons or beads
cardboard or cardstock
clothespins
cloth
coffee filters
cotton balls
empty paper towel/toilet paper tubes
glue sticks
mini foil pie plates
modeling clay
paper bags
paper clips
pennies
pipe cleaners
plastic cups
plastic eggs
plastic wrap
craft sticks or tongue depressors
rubber bands
scissors
staplers and staples
straws
string
masking, electrical, transparent and duct tapes

Pre-Activity Set-Up:

- To construct a test chamber, cut a quarter size hole in the center of the base of the oatmeal canister opposite the open end. This will be used to test the amount of visible light shining through the students’ designs.
- Determine a unit cost for each of the materials available. These values can be raised or lowered to adjust the level of challenge difficulty. Teams should itemize their budget using the Budget Planning Worksheet on page 39.