

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)
- Mailing tube, oatmeal canister, or small coffee can (used as size constraint)
- 2 - 2 cm plastic people (for example, Lego® or Playmobil®)
- Grid Paper
- General building supplies for teams to assemble their CEVs. These could include:



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

Pre-Activity Set-Up:

- Select a size constraint (for example, a mailing tube, oatmeal canister, or coffee can). Share the selected size constraint with your students. Have students fill in the blank for the size constraint on the student pages located in the student journal section.
- Determine a unit cost for each of the materials available. Based on these unit costs, decide the maximum budget each team has to design their model. This value can be raised (budget increase) or lowered (budget cut) to adjust the level of challenge difficulty. Teams should itemize their budget using the Budget Planning Worksheet on page 39.