



ENGINEERING

This team competition demonstrates creative ability, collaboration and attention to detail to construct an invention in the spirit of Rube Goldberg. Teams use items from a specified list. Teams will be given an invention prompt at the beginning of the competition and 2 hours to construct their invention. The invention must have at least 5 steps. A step is defined as a power - whatever force causes the next reaction to take place. Teams will write an explanation to communicate the elements of the invention and creative concepts. Teams will be required to interact with judges and respond to questions during the competition.

TIME LIMIT: 2 hours



COMPETITION GUIDELINES

1. Each school may enter one team of 3-5 students.
2. Teams will be given 2 hours to construct the invention.
3. The invention must be constructed on a piece of plywood 24 inches by 48 inches. This piece of plywood will be separate from the material container. No part of the invention may be off the board. The invention may be no higher than 4 feet.
4. The team must use items from the specified list. Materials must fit into an 18 gallon plastic storage container with lid. Tools do not have to be placed in the container.
5. Safety glasses are required for each team member.
6. All construction must be done on-site. At check in, the team must show that no steps have been preassembled. Each construction piece is to be separate. Electricity will not be available. Tools must be battery operated.
7. Objects may be attached to the board and/or to each other during the competition using adhesives, thumb tacks, nails, screws, wire, string, or tape.
8. The team gets one free touch to activate their invention. Deductions will be taken for the number of times assistance is required.
9. Judges will score the build based on the complexity of the process and steps, creativity, critical thinking and communication.



APPROVED MATERIAL LIST

The following five items must be included in the team's container of approved materials: golf ball(s), calculator, solo cup, nail, and toy car. The team must use items from the specified list of materials below. Materials must fit into a 18 gallon container with lid. Teams will be responsible for all materials needed for the build, including tools, and plywood board. Safety glasses are required and must be furnished by the competing teams.

Thread spool

Cans

Toothpicks

Toothbrushes

Paper clip

Sandwich bag

Wood scraps

Dowels

Tubing

Pulleys

Craft sticks

Plumbing parts

Mouse trap

Boxes

Matchbox car

Newspaper

Greeting card

Playing cards

Battery operated tools

Hammer

Marbles

Aluminum Foil

CDs

PVC Pipes

Mini-blind slats

Paper plates

Wire

String

Tape

Nails

Screws

Adhesives

Balloons

Springs

Bells

Rubber bands

Paper fasteners

Cardboard Tubing

Straws

Wheels

Tea strainer

Modeling clay

Tiles

Tinker Toys

Zip ties

Magnets

Scissors

Legos

Construx

Balls (plastic, metal, rubber)

Cups

Plastic toys

Battery powered fan

Cardboard

Cork

Spoons

Plastic bottles

Dried beans

Straight pins

Clothes pins

Ruler

Wind-up toys

Lincoln logs

Bottles

Shoe laces

Spaghetti noodles

Dominoes

Wire hangers

Pipe cleaners



EDUCATIONAL CONNECTIONS

- Engineering and Innovation
- Communication and Collaboration
- Critical Thinking and Problem Solving
- Mechanical Engineering

Students will investigate, find solutions, designs, and strategies from infinite number of possibilities using inquiry, collaboration, and process based learning.



HOW TO ENTER

- Visit www.betaclub.org/events/conventions and follow directions.
- The entry must be completed and submitted by the deadline date.
- Bring 24" x 48" piece of plywood, tools, safety glasses, and container of materials to Convention



NATIONAL ELIGIBILITY
All Trophies Awarded
at State Convention