



Helping Hand Design Competition

Teams are required to purchase their own materials and build their prosthetic prior to arrival at the competition.

Objective

The object of this competition is to design and build an arm that can lift a tennis ball, ping pong ball, a 16 oz solo cup filled with water, a 3 oz dixie cup, a 6 in paper plate, and a cotton ball from a surface to a container. *The operator must remain at least 5 inches away from the items when picking them up and placing them in the container.* Teams will demonstrate the arms usability by picking up these various objects in a specified amount of time.

Design Constraints

- You may not use your materials to scoop or attach the objects to your hand.
 - Example: You cannot use tape to pick up an object.
- Your hand must be mechanical.
 - You cannot manually move the hand to open and close around components.
 - Think about how your hand moves to grab and drop objects.

Rules

- Contestants get two tries to place each object into their designated container.
- The operator is defined as the human operating the designed arm.
- The operator must remain 5 inches away from the object during the testing. There will be a clear designated line 5 inches from the object and the container for the object that the operator will not be able to cross. This includes the hand of the operator.
- Only arms that abide by the design constraints and allowable materials are allowed to compete.

Allowable Materials

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|-------------------|------------------|----------|
| • String/Yarn | • Straws | • Tape |
| • Clothes pins | • Paperclips | • Glue |
| • Wire Hangers | • Plastic spoons | • Wood |
| • Cardboard | • Rubber bands | • Velcro |
| • Popsicle sticks | • Paper products | |

Judging Criteria

- 100 pts – Each object the hand can lift and move to the container.
- 50 pts – Lifting an object but not making it to the container.
- 10 pts – bonus for picking up cup and not spilling any water before it is placed in its designated location.
- Tie goes to the team who can complete the task in the least amount of time and then if still tied, it goes to most aesthetic.