

## MYSTERY ARCHITECTURE

**DESCRIPTION:** Students will be given a mystery set of materials to build a freestanding tower as tall as they can. The tower should be constructed to support a tennis ball at its top.

**TEAM SIZE:** 1 or 2 students

**APPROXIMATE TIME:** 30 minutes

### **COMPETITION:**

1. Each team of students will be given a container of building materials. All teams will receive exactly the same materials. The materials might include: straight pins, paper cups, drinking straws, paper clips, tape, string, paper, etc. The actual materials may be anything that the supervisor deems appropriate.
2. Each team will have a maximum time of 20 minutes to construct a tower to support the tennis ball at its highest point. The top of the tennis ball must be higher than any part of the structure.
3. Only those materials supplied in the container, may be used to construct the tower. No other materials or adhesives may be part of the finished tower. Students may bring scissors, a ruler and a pair of pliers to use as tools while building the tower. **Teams will be provided a tennis ball to use while building, and it will match the ball used by the event supervisor.** *The measurements of an "official" tennis ball are: Diameter: 2 1/2 inches (6.5 centimeters); Weight: 2 - 2 1/16 ounces (56.7 - 58.5 grams).*
4. The students will inform the judges when they finish their tower. Measurements will be made at the point of construction. Students will not be required to move their tower. The overall height and width of the structure (across its widest points) will be measured before placing the tennis ball on it. These measurements will be used to rank towers that are unable to support the ball, and as a tie-breaker. The tower must be completely free standing. It cannot be attached to, or receive additional stability or support from any surface or object (e.g., a table, floor, wall or ceiling).
5. Students will then place the tennis ball provided by the event supervisor on the top of their tower. Students are allowed up to 10 seconds to place and stabilize the ball on the top of the tower. The tower must remain standing long enough to complete the height measurement.
6. No coaching of the students will be allowed during the competition. Remember, we are assessing the STUDENT'S ability to think on their feet.

### **SCORING:**

1. The height of the tower will be measured as precisely as possible by the judges. Since no building materials are to extend above it, the top of the tennis ball will be considered the highest point of the tower.
2. All towers that support the tennis ball will be ranked above those that do not. The towers in each of these groups will be ranked according to their height. Tallest tower first, the shortest tower last.
3. In the event of a tie, the winner of the tie will be the tower with the smaller base measurement.

If a rule clarification is posted on the Macomb Science Olympiad website, the supervisor will score this event accordingly. Please visit: [www.macombso.org/mystery](http://www.macombso.org/mystery).