

## Michigan State Science Olympiad Ping Pong Parachute (Trial) Event

*Unless changed below, all rules for the ping Pong Parachute event as described in the 2021 Science Olympiad Rules Manual apply to this event.*

Each competing school may test and video a maximum of two Pong Parachute devices for the state competition. Schools must pre-select which one or two devices they will test before their 50 minute time period begins.

### Important Notes:

1. In order to offer this event in a remote format, adjustments have been made. It is impractical to expect all schools to test their devices in a gymnasium of a standard height. As such, the time aloft score will be adjusted to accommodate gym height.
2. Time aloft score = (time aloft in seconds / gym height in feet) .
  - a. A 20 second flight in a 30 foot gym = 20/30; time aloft score = 0.67
  - b. A 20 second flight in a 40 foot gym = 20/40; time aloft score = 0.50

In order to compete, you must have access to the following before beginning your video:

- One or two Ping Pong Parachute devices built by members of your team (any student from this season who is an active team member).
- A launching device, air pump, pressure gauge, and timing devices as described in the 2021 Rules Manual
- A suitable inside area for conducting and recording your flights. This will generally be a gymnasium.

### Procedure for video submission of Ping Pong Parachute event entry

**Log in to [scilympiad.com](http://scilympiad.com)**, select the Ping Pong Parachute event, and begin the event (You have 60 minutes from this point to enter information, complete your video, and submit your video link).

Enter your team name, team number, and competitors' names in the test page.

Write the verification word in large print on a sheet of paper.

### **Start the video**

Show the paper with the verification word from scilympiad.

*announce* your Team Name and Number: eg. "Riverview Highschool, C19"

1. Clearly state the height of the gym (in feet and inches) directly above the location of your launch. You cannot measure to a truss and then launch between the trusses. Tell how you determined your gym height (eg. counting cinder blocks, laser tool).
2. Show that your rocket(s) meets the construction parameters as stipulated in the rules. If any of these cannot be clearly seen in your video, your device will be assumed to have construction violations and the launches will not be registered (you'll be dq'd).
  - Pressure vessel is a single 1-liter or less plastic carbonated beverage bottle with a nozzle opening of approximately 2.2 cm. Show the bottle label.
  - The structural integrity of the pressure vessel has not been compromised.

- The nose of the rocket is rounded such that no portion of the nose cone can touch the inside top of a normal bottle cap.
  - Only tape is used to attach fins or other components to the outside of the pressure vessel.
  - Nothing is added to or placed on the inside of the pressure vessel.
  - Fins and all other added parts are all at least 5 cm above the pressure vessel's opening.
  - The payload system is a standard ping pong ball attached to a parachute assembly.
3. Show your practice log. Leave the video still for several seconds so that when paused the log can easily be read. The log must be made according to rule #4 in the rulebook. The log should verify the pressure you choose for the gym height you have measured. Make sure your team name and number are visible.

Point your camera at the 5 minute timer so that the digits appear clearly in the frame, then START the timer.

1. Load your first rocket onto the launcher and pressurize the vessel.
2. Very clearly show the pressure gauge is at or below 65 psi.
3. Place your camera such that the launcher, the rocket, and the entire flight including the ceiling and landing area are clearly in view. It is critical that the instant of launching and the instant of the payload touchdown can be seen.
4. Conduct your launch according to Rule 5a through 5i in the Rules manual.
5. Have two or three individuals time your flight. Assuming no timing mishaps, show the time on each stopwatch on your video. These times will be confirmed by the event supervisor timing the launch on the video.
6. State if you observed any competition violations that would put your launch in Tier 2 (payload system did not separate from the rocket) or Tier 3 (the rocket or any part of the parachute payload system contacted the ceiling).

Repeat steps 1-6 for your second launch.

Point your camera at the 5 minute timer so that the digits appear clearly in the frame, then STOP the 5 minute timer.

**Thank event supervisor**

**Stop the video**

**Go back to scilympiad.com.**

- A. Enter the gym height that you stated in the video.
- B. Enter the time score for each flight that you expect to receive.
- C. Enter the tier in which you expect your time score to be placed.

**Enter the web address or link to where your video can be viewed.** This can be Youtube, Google Docs, or any venue that is available to the general public. *Remember to give viewing permission to anyone that has the link.*

**Stop or Finish the test**