Optics

Event Description: Teams must participate in an activity involving positioning mirrors Co direct a laser beam towards a target. Teams must also be tested on their knowledge of geometric and physical optics.

Construction Parameters: See next page for checklist.

Competition Procedure:
1. The objective is to reflect a laser beam with mirrors around barriers towards the Target Point.
2. The event supervisor must select a Target Point location that is the same for all teams. Teams must not be informed of the location until it is Their turn to compete in Part II of the event.
3. All mirrors must be placed in a home position designated by the event supervisor before each team is permitted to see the LSS.
4. When a Team is ready to begin, the event supervisor must give a countdown of "3, 2, 1 start" aid start a timer. Event Supervisors must give teams a warning when 3 minutes have elapsed.
5. Competitors must make all measurements, calculations, and mirror placement/alignment within a 4 minute time period. Competitors may choose to use between 1 and 5 moveable mirrors.
6. Timing must stop when 4 minutes have elapsed or the competitors remove the material covering the face of one mirror. Competitors must not make any additional adjustments to Che mirrors at that point other than to remove the other mirror coverings. The supervisor must not remove the coverings.
7. Competitors must not mark on or modify the LSS.
8. Competitors must not Touch the laser or change its orientation and/or position.
9. The laser must not be turned on unfit timing stops. Once turned on, the event supervisor must mark on the paper mounted above the metric scale where the laser strikes it to record the results. Competitor tools/templates may remain on the LSS during this process.
10. The supervisor must verify with the team the correct recording of Part II data on the team scoresheet.

Possible Volunteer Duties:
➢ **Time 4 minutes for the laser shoot**
➢ **Give 3 minute warning to teams during the laser shoot**
➢ **Calculate and/or record scores**
  o **NOTE: Event supervisor should double check all scores**
➢ **Help the event supervisor in other ways as needed**