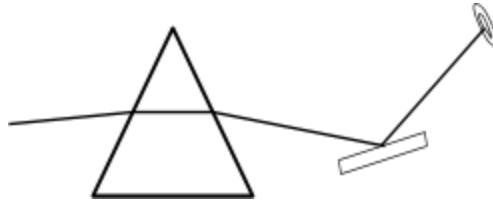


Laser Light Show



Objective:

To hit a target with a laser spot by placing a plane mirror in the appropriate position. The laser light will pass through a clear triangular prism, so teams may wish to determine the index of refraction of the prism material to help predict the path of the light.

Rules:

1. The timer begins when the team receives its triangular prism and laser pointer. Teams are given the opportunity to determine the index of refraction of the prism material, and protractors, rulers, and calculators will be available for use.
2. The team hands in the prism and laser pointer in exchange for a template indicating where the incident laser, prism, and target will be placed.
3. The team may draw on the template. The team must include a line to indicate where the reflective surface of the mirror is to be placed so that the laser spot will hit the target.
4. The timer stops when the team is ready to position the mirror.
5. The score is the horizontal distance from the center of the target to the laser spot. Smallest distance wins.
6. All teams in which the laser beam fails to hit the mirror will tie for last place.

Tiebreaker: the shortest time will serve as a tiebreaker.

Time limit: 15 minutes.