**Cooperative Group Problem Solving**

**HIT THE TARGET!**

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**TASK:**

How will you place three mirrors to hit the target?

**Documentation of the Challenge:**

1. Picture of the set up and the materials available. [C]
2. Statement that describes the problem. [C]
3. Brainstorming and Planning with reasoning for the plan. Theory must be used to support the plan. You must ensure that your plan in described using all the concepts you know from the course. [T/I][A][K/U][C]
4. Measurements and Analysis. Measure any variables you may need to measure. Document appropriately. Complete your theoretical calculations to position your mirrors to complete the task. Draw a detailed ray diagram for your set up. [T/I][K/U][C]
5. Conclusions and Error Discussion. State how you will position the mirrors. Discuss if your mirror positions seem reasonable. Test your design. Measure how far off you are from hitting the target and discuss any errors. Provide a solution to the problem. State how you would improve your results. [K/U][T/I][C]

**Teacher Instructions:**

The documentation process is the same for all activities of this type. This allows students to improve their communication skills throughout the course.

For this activity, students will have access to: measuring tape, ruler, protractor, pencil, paper

Once the group has determined where to place the mirrors in the room and provided a detailed ray diagram for their chosen orientation of mirrors, they can test their design. The teacher will provide you with three mirrors.