

Lab Procedure Cards

Light

1. Place a mirror at the edge of the protractor. Use a laser pointer to shine a light from one angle of the protractor and determine at which angle it is being reflected.

Angle of Incidence: 20° 60° 80° 40° 70° 10° 50° 30°

Angle of Reflection: _____ _____ _____ _____ _____ _____ _____

2. Place a hinged mirror at the edge of the protractor. Move the hinged part to the degree specified, and place a teddy bear in front of the mirror. Count how many reflected images you see.

Angle: 10° 30° 50° 70°

of Images _____ _____ _____ _____

3. Set the mirror at 90° . Place a letter against the mirror and draw the letter as it is reflected (you should draw all four reflections of the letter exactly as you see them).

Hit the Target

1. Place a laser pointer on the table and a target somewhere behind it. Use mirrors to create at least **three** “bounces” before the light hits the target.
2. Draw how you did it.
3. Combine with another group and try to make **six** “bounces.” Draw how you did it.

Refraction

1. Place a coin in an opaque cup and adjust your eyes so you can no longer see the coin. Without moving your eyes, slowly add water to the cup until you can see the coin. Draw what you did and write your discovery.
2. Using four transparent cups, pour 50 ml, 100 ml, 150 ml, and 200 ml of water into each cup. Place a pencil in each cup and draw what you see. Write your discovery about what each pencil looks like in different amounts of water.
3. Using four transparent cups, place 100 ml each of water, vegetable oil, Karo syrup, and alcohol in a cup. Place a pencil in each cup and draw what you see. Write your discovery about what each pencil looks like in liquids of different thicknesses (viscosity).
4. Dry off the pencils and clean up the materials