

Lab write up: Finding our Inner Light(er). Where's the matches?

What to include in your geometric optics and reflection poster.

Playful drawings that show you engaging with the three lab activities

- The flat mirror lab which introduced terms such as incident and reflected rays and the idea of 'image' vs 'object' (along with their, respective measured distances, D_o and D_i)
- The spherical mirror lab which had you placing candles at various positions and then seeing with your eyes where the 'image' came into focus on a screen.
- The spherical experiment in which you had the object (probably a pen) held CLOSE to the mirror and then estimating what distance behind, the 'Virtual Image' formed.
- The experiment in which we went outside to attempt to measure directly, the focal length of the mirror.

Technical drawings (called Ray Diagrams) that represent each of those same experiments, noting measured values for image distance, object distance, drawing 'Normals' (which we used to measure angles from). These would be like the drawings Clark did on the board. Note: these drawing should also include the 'uncertainty' in the measurements.

A Key which describes each of the 'key' terms we learned about.

Incident Ray and angle. Reflected Ray and angle, The Normal, The image location and image distance (d_i), the Object location and distance (D_o). The differences between Virtual Images and Real Images. The Image/Object and Focal Length Equation.

A math section that shows the equation (above) in use to determine what the focal length f , must have been as well as the uncertainty in that calculation.

A drawing (such as Clark did) which illustrates the final value for your calculations of focal length, including the uncertainty in those values and comparisons of the 'overlap' of the ranges of uncertain values.

A reflection (yes, a pun!) on how your awareness of optics, how we talk about it, how we measure it, and how we account for 'uncertainty' in our measurements and calculations has changed as a result of this lab. (this could be a poem, a short paragraph, or even a song?)

Color! Drawings! Neat writing, Nice art (including supplemental pictures? A child looking at their reflection in pond? A person examining themselves in the mirror in the morning? Wondering what other people see in them? Be creative!