Exploration, SES #4
The class explores individually with lenses and mirrors of various types and sizes.

"How is a lens like the frame we were looking at before?"
DS records observations about each lens, and then wonders about swapping out lenses, changing the kind of frame, and using what we observed in the frame explorations to apply to this observer, frame, object relationship. He measures the distance between each of these factors in the setup in Figure 1 using lenses, and determines when the object looks the clearest (Fig. 2). DS notes that he can be far away from the object and frame and still see it well, and that this arrangement of lenses might work well for viewing something up close. The challenge would be how to see something really far away.


Fig 1


Fig 2

MC experiments with pairing lenses together (Fig 3), and then observes the effects of a convex mirror and the distance at which these effects take place (Figure 4). She notices that the words on the first aid kit appear upside down at some distances through this lens.


Figure 3


Figure 4

YY sets up a series of mirrors in order to see the same object in each of multiple mirrors. She measures and experiments with the angles (Figure 5). She also then explored the convex mirror's effects on an object, a small purse. She notices that close up, the object is clear and right-side up, further away, the object gets distorted and then appears upside down, and then even further away, the object is both upside down and appears to be smaller (figures 6-7).

Figure 5

Figure 6

Figure 7

Figure 8

TA begins by measuring the width and thickness of various lenses and mirrors, finding one that is concave by about 2mm and setting up the materials in this arrangement (Figure 8-9). She notices that various combinations of lenses and distances result in the image in the mirror appearing different sizes. She measures the ratios of the apparent image size to the distance between the lens and mirror.

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