

Lens Optics Soundtrack

This is the soundtrack for the Lens Optics video. It is "keyed" to the frame. Some of the soundtrack begins with one scene and continue into the next one.

Scene	Voice Track
1.	This video is part of a web-based package on the Lens Optics experiment. It introduces the apparatus that will be used to perform the experiment.
2 - 3	<p>Here is the apparatus for the Lens Optics experiment.</p> <p>There is an optical bench on which all the other components are mounted. The laboratory has various types of optical benches, which all serve the same purpose: they provide a stable base on which the components may be mounted. So your apparatus may not look exactly like this one.</p> <p>All optical benches have a high quality metal rule for measuring the horizontal position of components that are mounted on the bench.</p>
4 -5.	<p>There are mounts that attach the other components to the bench.</p> <p>Here is a mount with nothing on it.</p> <p>We can place the mount on the bench and then attach a component to it.</p>
6 - 7	The light source is mounted here. It contains a simple incandescent light bulb.
8 -9	The object is mounted here. It consists of a piece of thin paper with an arrow and some lines drawn on it. It will be lit from the light source. You will need to be careful not the tear the paper. You may change the position of the object by sliding the mount back and forth on the bench.
10 - 11.	Here is a thin lens. It is held in place with a lens holder attached to the mount.
12 - 13.	Here is a white screen for viewing the image of the object that will be formed by the lens. If the room is darkened, we can see the image change as we slide the screen back and forth. You will want to adjust the position so the image is as sharp and clear as possible.
14.	You will measure the position of the image by reading the position of, say, the left-hand side of the mount with the metal scale.
15	<p>You can similarly measure the position of the mount holding the lens.</p> <p>In the experiment you will want to know the distance from the center of the lens to the position of the image when the image is sharp and clear. This is related to the difference of readings of the scale for the mounts for the lens and for the image screen. But it may not be exactly the same number.</p> <p>This is because the offset of the center of the lens from the left-hand side of its mount may not be the same as the offset of the image screen from the left-hand side of its mount.</p>
16 - 17	This rod is almost exactly 20.00 cm long. When it is placed between and just in contact with the lens and the image screen, then you know that the distance between the screen and the center of the lens is almost exactly 20.00 cm plus one-half the thickness of the lens.
18.	As just discussed, you will need to know the thickness of the lens.
19.	Being careful not to scratch the lens, you may measure its thickness with a vernier caliper.
20.	This completes the video introduction to the Thin Lens apparatus. There is still important information to learn about this experiment from the associated web page.