



The Plan for Chunk 14: Optics

- A. (5 pts) Measuring Angles: (1) watch the video  (2) complete the Part A practice on the provided worksheet.
- B. (8 pts) Law of reflection: (1) watch the Law of Reflection Video and take notes, also follow along on the Law of Reflection notes page below the image of the protractor  This is on the back of the worksheet for Part A. (2) complete the B(2) Practice Reflection below Part A.
- C. (8 pts) Plane (flat) mirror image formation:

View the Law of Reflection PowerPoint and take notes, just like it was in class. The animation from 0:44 – 1:13 is very important, you need to describe what happens and sketch the final diagram as shown at 1:13. Also keep in mind that you could replace the arrow with yourself (or anything else) and it would work the same, which is how you see your reflection in a normal mirror. Your notes will be checked for approval of this part.

- D. (17 pts) Complete the curved mirror tutorial. There are printed copies in the classroom and you can access it online at <http://theteterszone.net/tutorials/cavemirr/crvtut1.html>
- You will do your work on the Curved mirror diagram (front and back)
 - Part 1: pp. 1-7 should be done on the front side of the diagram and approved before moving on to Part 2
 - Part 2: pp. 8-13 should be done on the back side of the diagram
- E. (12 pts) Complete the curved mirror practice sheet. The back page will not give you any real images, but recall how a virtual image appears with a plane mirror (Part C) and you can figure out what to do. The last mirror is a convex mirror, you will need to be creative with your easy rays.
- You can view the Curved Mirror PowerPoint online to check your diagrams and for assistance if you get stuck.

Each part must be completed by a specific date. Write these dates in the first row as provided by your teacher. Any work approved on time will receive a *1 point bonus*.

Dec 5	Dec 5	Dec 5	Dec 6	Dec 6	Dec 7	Dec 7	Dec 8
Part A	Part B	Part C	Part D (1)	Part D (2)	Part E	Part F	Part G
Dec 8	Dec 9						
Part H	Part J						
Part I							

F.(4 pts) Complete the mirror image properties chart below. This chart simply lists the behavior of all types of mirrors together into one place. This chart should be completed based on the mirror ray diagrams you have completed up to this point. Basically, list the L.O.S.T. properties that you see when you look in various mirrors.

	Object location	Image Location	Image Orientation	Image Size	Image Type
1	Plane (flat) mirror				
2	Concave mirror Beyond C				
3	Concave mirror @ C				
4	Concave mirror $C \leftrightarrow f$				
5	Concave mirror @ f				
6	Concave mirror $f \leftrightarrow \text{apex}$				
7	Convex mirror				

G. (16 pts) Law of Refraction

- Watch each of the four videos to complete the Refraction Diagrams page. 🎧

After A-G is approved, choose either H or I to complete as your last task.

- _____ H. *(10 pts) Mirror and Lenses Inquiry – compare image formation of curved mirrors with lenses. Materials and instructions are available in the classroom only.
- _____ I. *(10 pts) Reflection Lab – This lab is designed to verify the law of reflection by having you draw the light rays you see on paper. The procedure is on the same paper as the setup and there is a sample video to help you understand what to look for in the mirror. 🎧
The materials are available in the classroom only.
- _____ J. (10 pts) Optics Quiz - This will be given at the end and you may use all the work you have completed. This will cover all parts listed above.

All of the work you complete is the summative assessment for this chunk. All work should be approved as you work through the Optics Chunk. You will only turn in this paper with all of your work at the end of the chunk. Be sure to get your work approved as you complete it on a daily basis. Any work completed by the deadlines provided will earn a *1 point bonus*. *You must have all of parts A-G signed off before you can do your choice of part H or I.

There are 90 points available (+9 bonus)...you must complete all nine parts and take the quiz at the end...your Chunk Test score will be based on a maximum score of 90 points.