

Lab/Web lab

Lenses observations

1. With the light boxes (place a solid black piece in the back and use a black piece with 3 slits in the front. Make sure the wings are closed), and place the concave and then the convex lens in front of the 3 lines- move around until you can identify if the light beams are converging or diverging with each.

Concave lens observations	
Convex lens observations	

2. With the Convex lense, Look at the object provided on the table. What observations did you make. Change the distance you are looking at the lense to the object- move it closer and farther away- what did you notice?

Concave lens observations	
Convex lens observations	

3. Open the following link <https://www.acs.psu.edu/drussell/Demos/RayTrace/Lenses.html>

Note what happens to the objects image as it is brought closer to the concave lens	
Note what happens to the objects image as it is brought closer to the convex lens	

Lenses:

1. Open <https://www.youtube.com/watch?v=uQE659ICjqQ> Watch this 7 min video. It will help! Note 5 takeaways from the video

1.
2.
3.
4.
5.

2. <http://www.passmyexams.co.uk/GCSE/physics/concave-lenses-convex-lenses.html>

Open this tutorial for both convex and concave lenses

Convex lens:

Draw/ imbed picture:	
Things to remember:	
example 1 summary	
example 2 summary:	
Watch the video on magnifying glasses- summarize	

Concave lens:

Draw/imbed picture:	
Things to remember:	

3. Open <http://www.passmyexams.co.uk/GCSE/physics/reflection-and-refraction.html> summarize how submarines see above the water

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4. Scroll to the bottom and click next

<http://www.passmyexams.co.uk/GCSE/physics/use-of-lenses-for-correcting-vision-eyesight.html>

Summarize long/farsighted	
How is it corrected?	
Summarize short sighted	
How is it corrected?	

Questions: - use your friend google

How does a telescope work (include what type of lens)	
What kind of lense is our eye?	
How does a microscope work? (include what type of lens)	

Image location (for all of your answers below- highlight in yellow!)

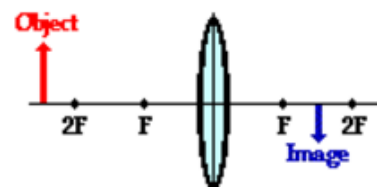
A **virtual image** is formed if the object is located LESS than one focal length from the converging lens. (convex)

light rays are converging to a point after refracting through the lens. In such cases, a **real image** is formed. Real images are produced when the object is located a distance GREATER than one focal length

<http://www.physicsclassroom.com/class/refrn/Lesson-5/Converging-Lenses-Object-Image-Relations> for more indepth review of these

Look at each situation and describe the image

1. Lens type _____



Converging or diverging rays

Image location: Real or Virtual

Image orientation: RSU or USD

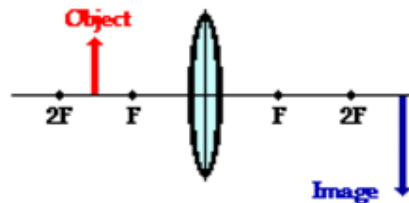
Image size: Larger, Smaller or Same

2. Lens type _____

Image location: Real or Virtual

Image orientation: RSU or USD

Image size: Larger, Smaller or Same

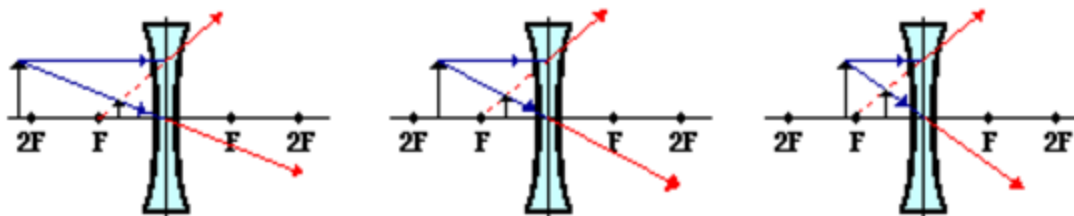
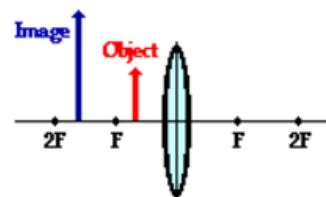


3. Lens type _____

Image location: Real or Virtual

Image orientation: RSU or USD

Image size: Larger, Smaller or Same



4. For all three images below the results are (the object is the tall arrow)

Lens type _____

Converging or diverging rays

Image location: Real or Virtual

Image orientation: RSU or USD

Image size: Larger, Smaller or Same

Video

Watch Some V-Sauce on Illusions

https://www.youtube.com/watch?v=Iw8idyw_N6Q (10 min)

Observation 1	
Observation 2	
Observation 3	
Observation 4	

