Summary of our Optics Inquiry

Light leaves sources in all directions traveling in straight lines

Lenses and mirrors change the path of light

Mirrors reflect light

Lenses refract light (bend the path of light)

Convex and concave elements affect light differently: they converge or diverge the light rays

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<th>LENS</th>
<th>CONVERGE</th>
<th>DIVERGE</th>
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<tr>
<td>CONVEX</td>
<td>CONVERGE</td>
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<tr>
<td>CONCAVE</td>
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Images are formed where light is brought to a focus

Lenses:

The law of refraction: Light going through glass is bent in the direction where the glass is thicker
The focal length of a lens is where parallel light rays are focused

A single convex lens forms an inverted image

The greater the curve of a lens, the shorter the focal length

How big the image is (its magnification) is determined by the curvature of the lens, and the distance between the lens and the image

*Lens closer to the image – smaller image*
Mirrors:

The law of reflection: the angle of incidence equals the angle of reflection

Flat mirrors:

The image in a single mirror appears to be behind the mirror
Mirrors at right angles bounce the light back towards the source

Because you have two reflections you see the opposite of what you see in a single mirror (You see yourself as others see you)

Multiple mirrors like this are used in things like bike reflectors

Curved mirrors:

More strongly curved concave mirrors have smaller focal lengths “just like lenses”

Concave mirrors form two types of images

Convex mirrors form one type of image