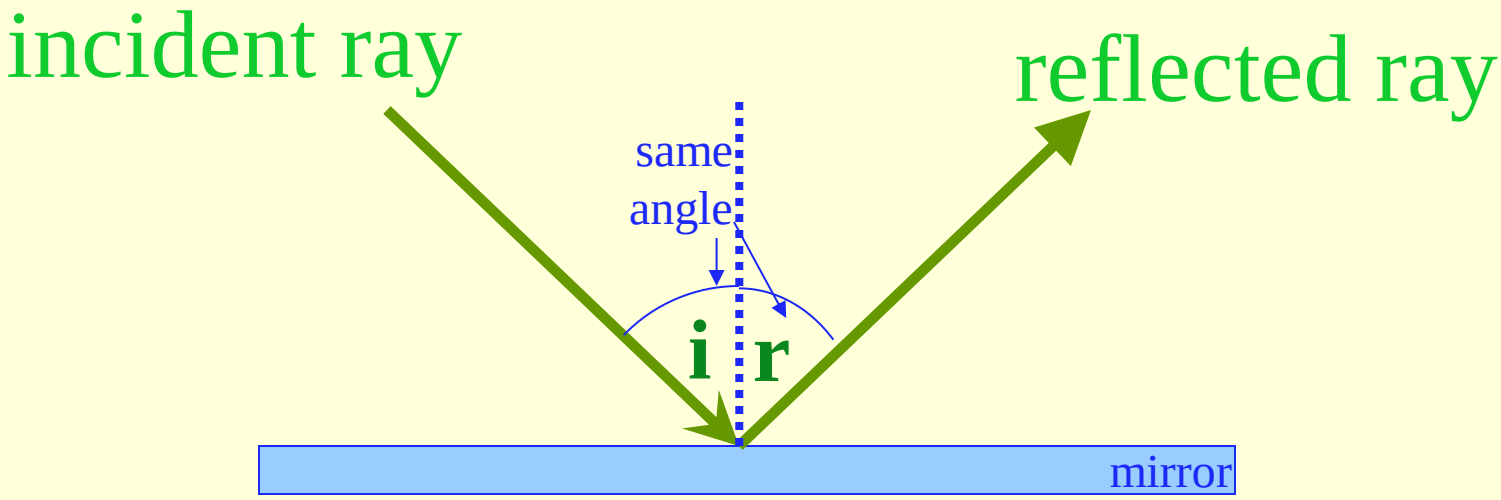
MIRRORS & LENSES

Law of Reflection

$\angle_i = \angle_r$



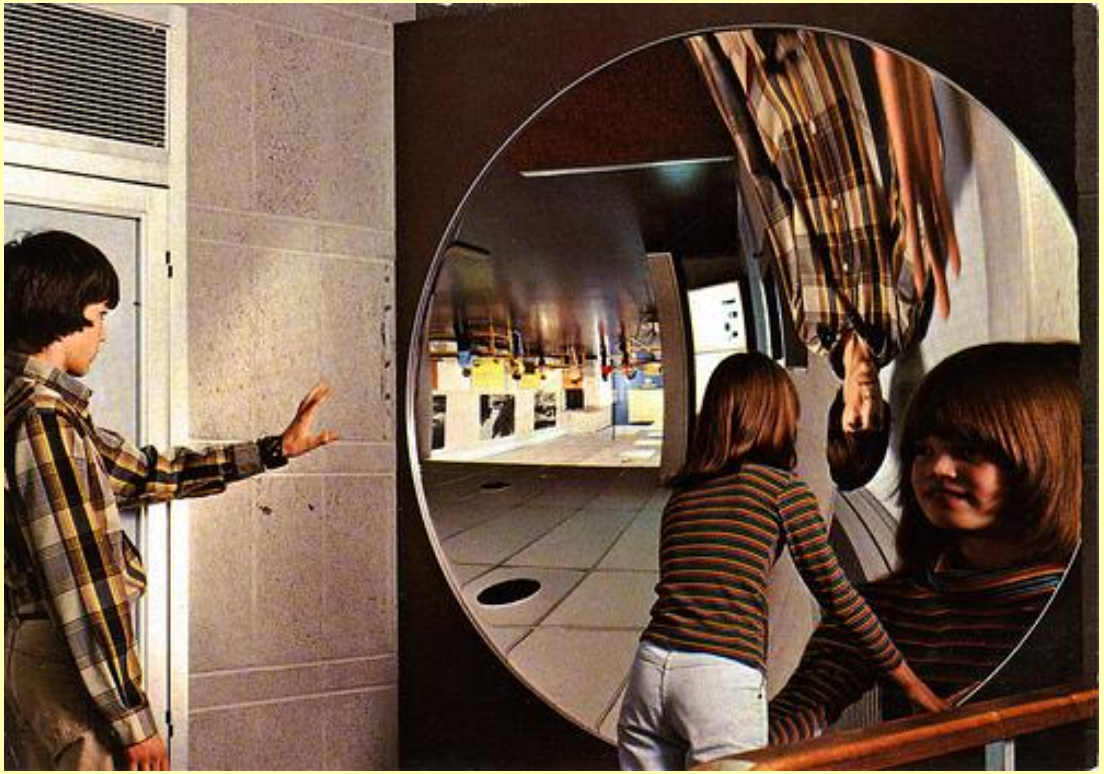
Curved mirrors

Concave

Convex

Concave Mirrors

- Curves inward (like a cave)
- Uses: Make-up mirrors, telescopes



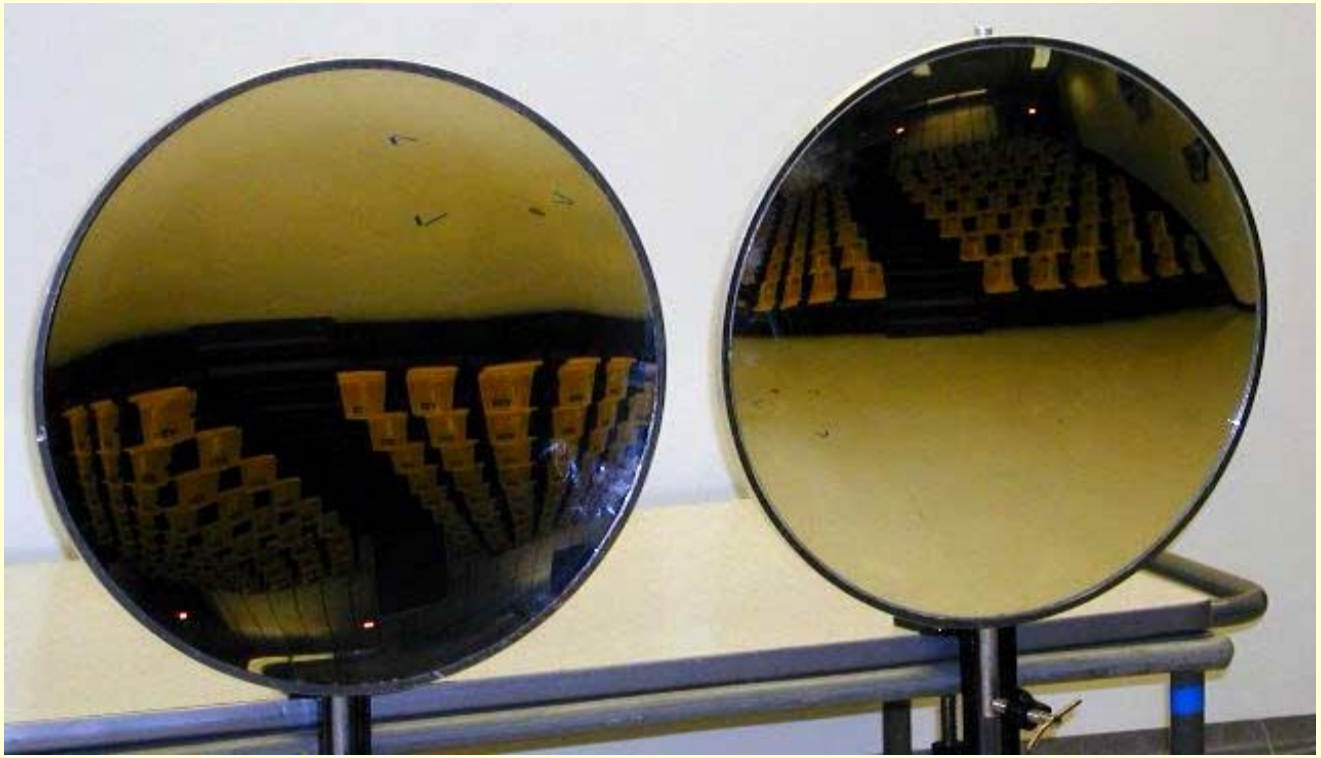
Convex Mirrors

- Curves outward
- Reduces images

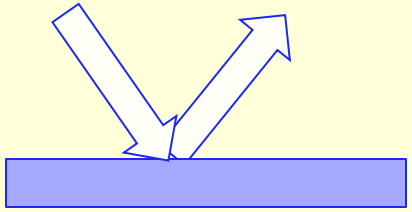
Uses: Rear view mirrors, store security

Concave Mirror
upside down

Convex Mirror
right side up

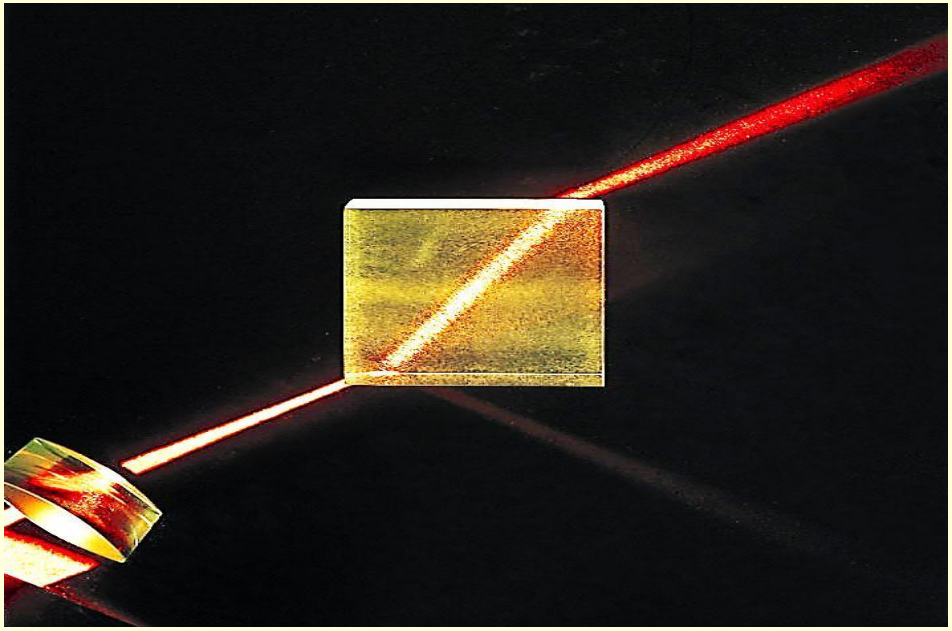


Mirrors *reflect* light



reflect is to bounce off

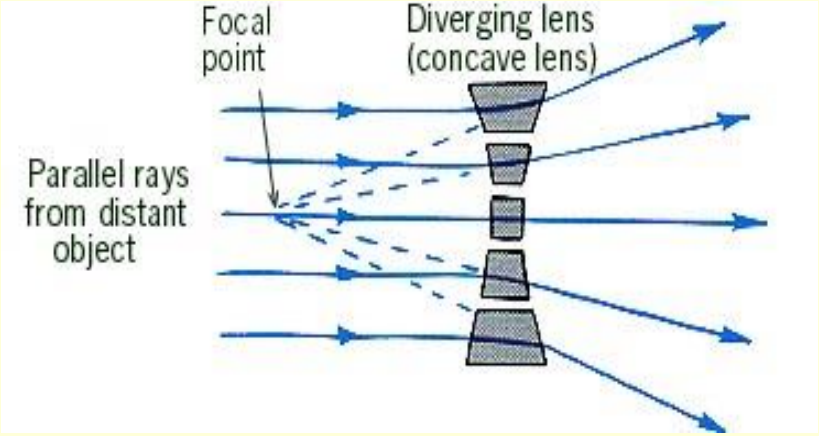
Lenses *refract* light



refract is to bend

Concave Lenses

- Lenses that are thicker at the edges and thinner in the center.
  - Diverges light rays (spreads out).
  - All images are right side up & reduced.

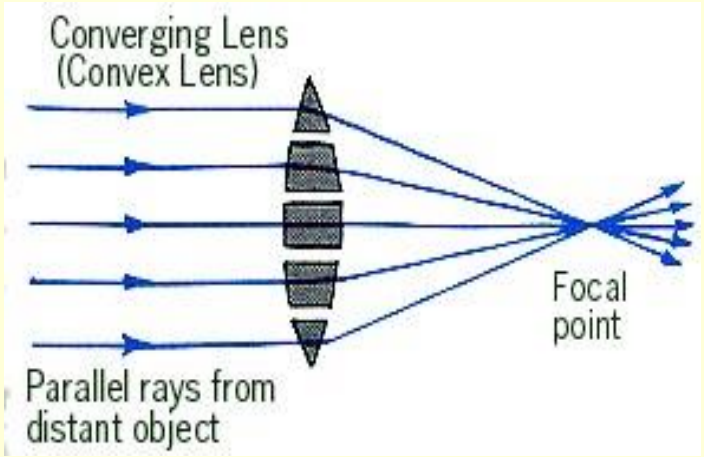


De-Magnifier

Convex Lenses

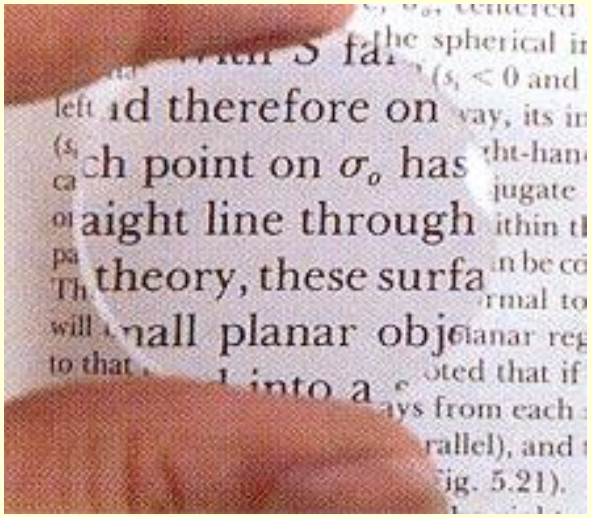
Thicker in the center, thinner at the edges.

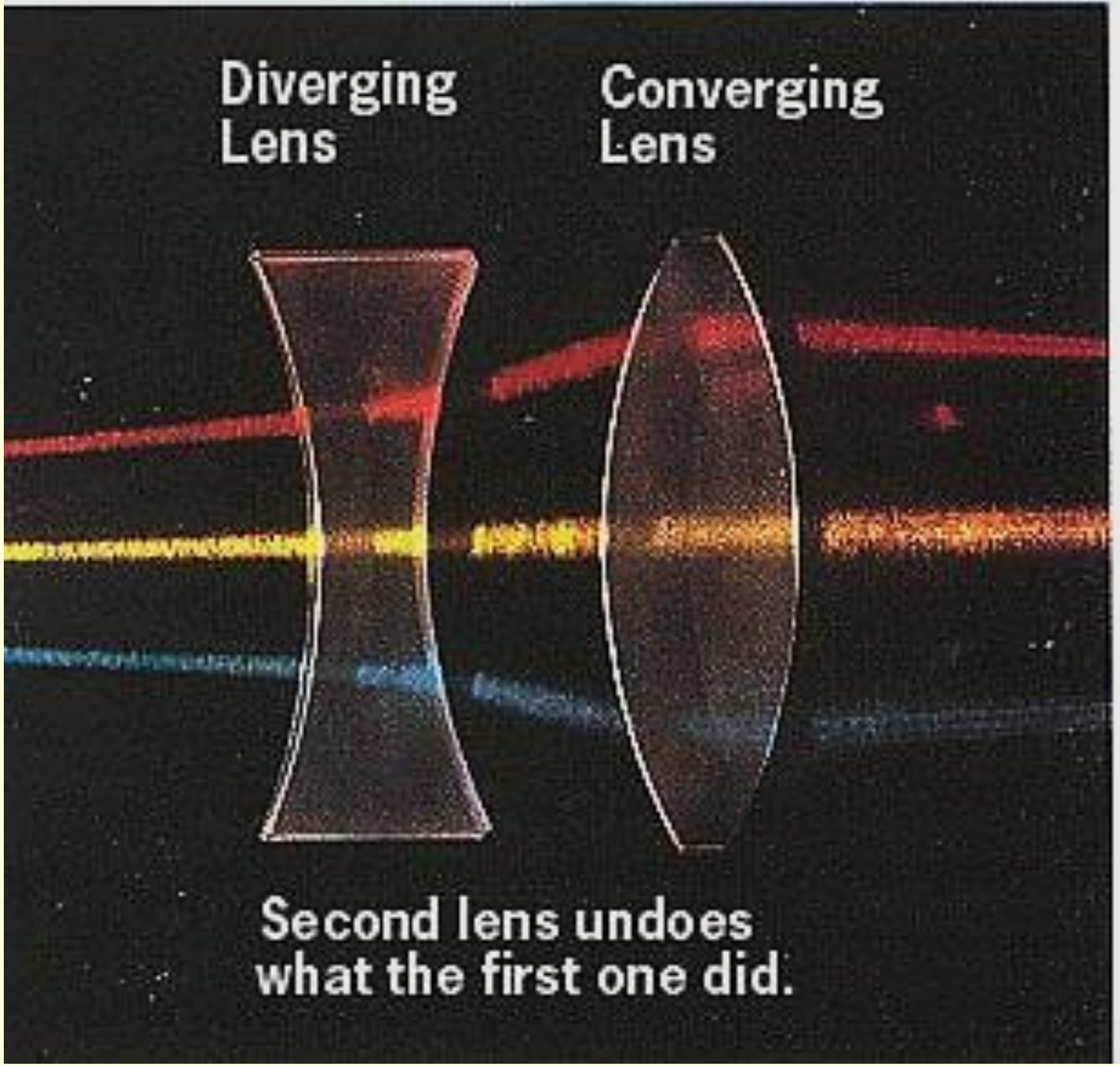
- Converges light rays (brings together).

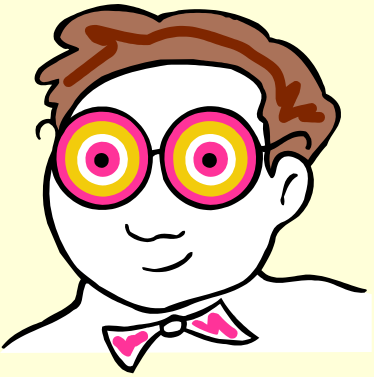


- All images are right side up & enlarged.

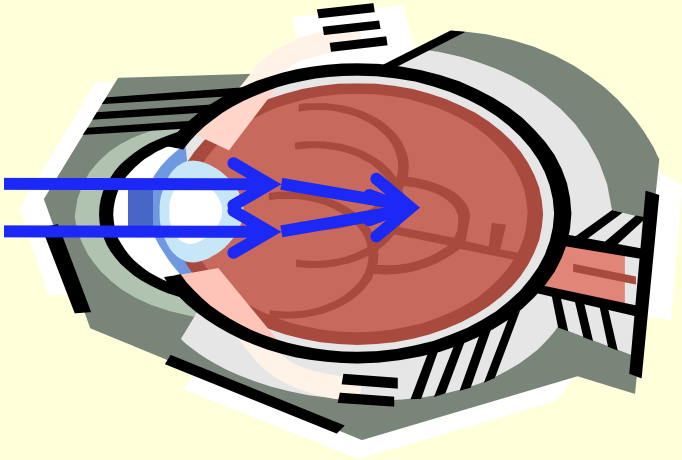
Magnifiers

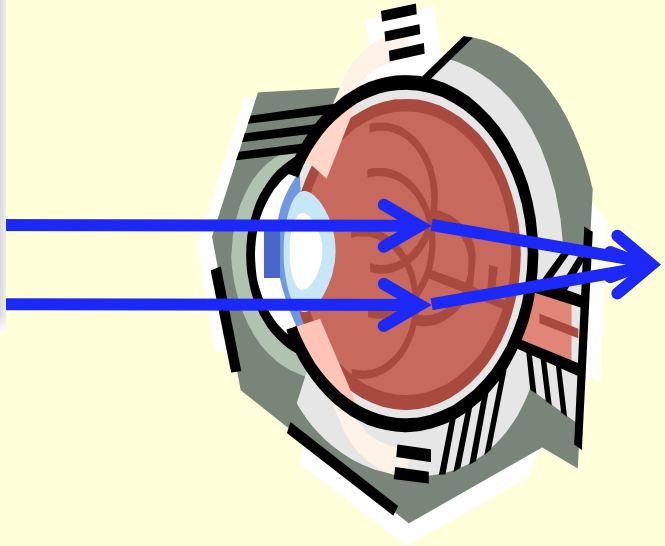



Diverging Lens
Converging Lens
Second lens undoes what the first one did.



EYESIGHT





- Near Sighted = Can see near
- Eyeball is too long, image focuses in front of the retina
- Use Concave lenses to expand focal length

- Far Sighted = Can see far
- Eyeball is too short, image focuses behind the retina
- Use Convex lenses to shorten focal length