Lenses and Eyesight
Focusing on Far and Near

- As an object gets farther from your eye, the focal length of the lens has to increase.
- The muscles around the lens stretch it so it has a less convex shape.
But when you focus on a nearby object, these muscles make the lens more curved, causing the focal length to decrease.
If you can see distant objects clearly but can’t bring nearby objects into focus, then you are farsighted.
Farsightedness

• To correct the problem, convex lenses cause incoming light rays to converge before they enter the eye.
Nearsightedness

• If you have nearsighted friends, you know that they can see clearly only when objects are nearby.

• When a nearsighted person looks at distant objects, the light rays from the objects are focused in front of the retina.
Nearsightedness

• A concave lens in front of a nearsighted eye will diverge the light rays so they are focused on the retina.