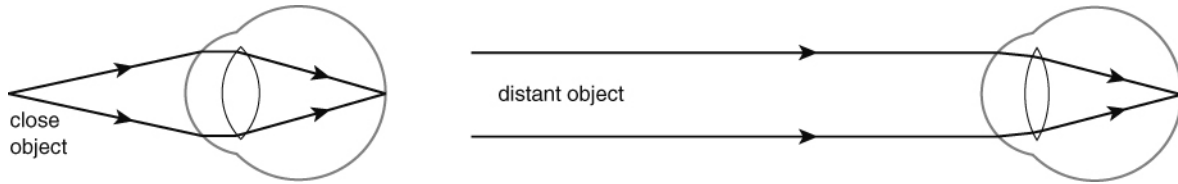


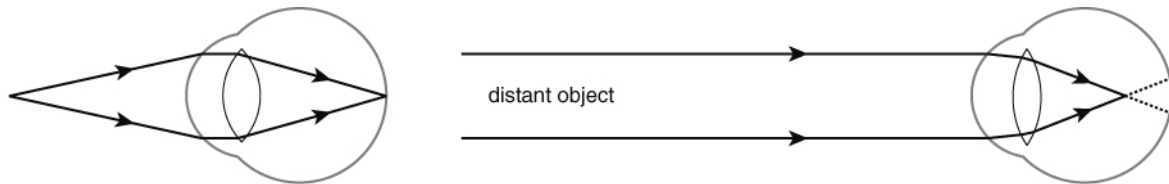
Many people need to wear spectacles because their eyes do not focus light properly. There are two common sight defects, called short-sight and long-sight.

Normally, muscles change the shape of the lens in your eye so that you can focus on things that are close to you or things that are a long way off.



Short-sight

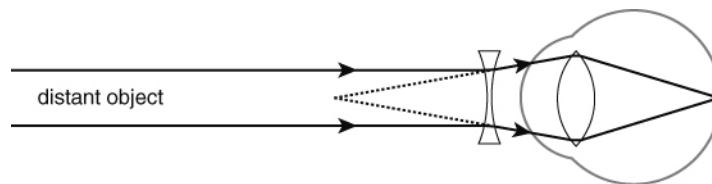
If you are short-sighted, you can focus on objects that are close to you, but not ones that are a long way off. When you are looking at distant objects, the rays of light are focused in front of your retina (i.e. 'short of' the retina). This happens either because your eyeball is too long, or your lens is too thick.



Light from close objects is focused on the retina.

Light from distant objects is focused in front of the retina.

Short-sight can be corrected by wearing spectacles or contact lenses with diverging lenses. These are lenses that are thinner in the middle than at the edges, and make light spread out.



The lens makes the light rays spread out, as if they had come from a much closer object.

Long-sight

If you are long-sighted, you can focus on distant objects but not close ones. This happens either because your eyeball is too short, or your lens is not thick enough to bend the light enough to focus on your retina.

- 1 What changes in your eye when you look at objects at different distances?
- 2 If you are short-sighted:
 - a Which things can you see clearly?
 - b Which things can't you see clearly?
 - c Why does this happen?
 - d What kind of lenses do you need in your spectacles or contact lenses?
 - e How do these allow you to see everything clearly?
- 3 If you are long-sighted:
 - a Which things can you see clearly?
 - b Which things can't you see clearly?
 - c Why does this happen? Draw diagrams to help you to explain your answer.
 - d What kind of lenses would you need in your glasses or contact lenses?
 - e How would these lenses help you to see everything clearly?

I can...

- describe the causes and effects of long sight and short sight.