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The optical defect of the vision (Myopia)

The types of vision defects can be classified as following

A normal eye can focus by accommodation on any object more than about 25 cm away. In cases where an eye cannot focus on an object, the image is formed either behind or in front of the retina, resulting in blurred vision. This can be caused by the eye being too short or too long

Near-sightedness (Myopia)

A person affected by myopia has an eye ball that is too long, making the distance from the lens system to the retina too large. This causes the image of distant objects to be formed in front of the retina. The far point of a myopic eye is less than infinity.

A myopic eye can naturally focus divergent rays from a near object on the retina, but not parallel (or nearly parallel) rays from a distant object. Eyeglasses that correct myopia have a divergent lens, which forms a virtual image of the distant object closer to the eye.

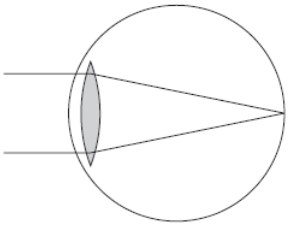
Procedure: Correction of Myopia

1. Fill the eye model with water to within 1 or 2 cm of the top and place it about 40 cm from the light source. Move the eye model as close as possible to the light source until you get a sharp image in focus.

2. Move the retina screen to the back slot, labeled NEAR. Describe what happens to the image.

3. To correct the myopia find a lens that brings the image into focus by place it in front of the eye in slot 1. Record the focal length of this lens.

4. Calculate its power in diopters



Normal Vision

B-The defective eyesight:

1.Myopia (near sight): eye ball is too long, can not see distant object clearly. Image focused In front of retina. Far point less than infinity Corrected by negative lens (diverging)