Notes: Vision Problems

## Normal Vision

* Individuals with perfect vision are able to see both objects that are \_ and \_ without any problem
	+ In other words, these images appear
	+ This is because the image is being formed
* To do this, the will and in order to change the shape of the lens to focus the light properly.

## Myopia

* Individuals with myopia are said to be
	+ This means they can focus on objects
	+ But objects appear blurry
* This is most often caused by an eyeball or if the lens or cornea are too curved
	+ This causes the image of the object to be formed the retina
* Corrected by using a to \_\_\_\_\_\_\_\_\_\_\_\_\_ the light rays

## Hypermetropia

* Individuals with hypermetropia are said to be
	+ This means they can focus on objects
	+ But objects that are appear blurry
* This is most often caused by an eyeball that is or if the lens or cornea do not refract the light enough
	+ This causes the image of the object to be formed the retina
* Corrected by using a to \_\_\_\_\_\_\_\_\_\_\_\_\_ the light rays

## Presbyopia

* A vision condition that occurs with
	+ Usually starts around the age of 40
* Believed to be caused by a gradual and of the lens
* Ligaments also and ciliary muscles lose
* Corrected by using \_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Astigmatism

* Inability to focus light properly due to \_ shaped
* Causes the light to be \_\_\_\_\_\_\_ in a way that creates \_\_\_\_\_\_\_\_\_\_

Normal Vision

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Object** | **Ciliary Muscle** | **Ciliary Ligaments** | **Lens** | **Image** |
| Far away | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Object** | **Ciliary Muscle** | **Ciliary Ligaments** | **Lens** | **Image** |
| Up close | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |



Myopia

**Normal Vision** (object far away)



**Myopia** (object far away)

Hypermetropia

**Normal Vision** (object up close)

**Hypermetropia** (object up close)

Corrective Lenses

**Myopia**

f’

f

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Lens** | **Refraction** | **Focal Point** | **Image** |
|  |  |  |  |



**Hypermetropia**

f’

f

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Lens** | **Refraction** | **Focal Point** | **Image** |
|  |  |  |  |

**Presbyopia**

****

|  |  |  |
| --- | --- | --- |
| **Type of Lens** | **Look up corrects for** | **Look down corrects for** |
|  |  |  |