Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour: \_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Notes:

Do Now:

•What are the photosensitive cells that respond to black, white and shades of grey?

•What are the photosensitive cells that respond to color?

•What is the condition where the eyeball is too long and the lens forms images in front of the retina?

•What is the condition where the eyeball is too short where the lens forms images behind the retina?

* There are 4 ways that light is affected by matter

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Optics is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* 3 Optical Devices

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Lens –

Two types of lenses –

* + Converging lens

* + Diverging lens
  + What type of lens is a magnifying glass? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mirror –
  + Reflection –
    - Specular reflection – smooth surface, reflects a single ray
    - Diffuse reflection – uneven surface
* Prism –
  + Refraction –
  + The higher the index of refraction the more the light bends

Review for Light Quiz TOMORROW:

* What are the four properties of light?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Order the waves that make up the electromagnetic spectrum from longest wavelength to shortest:
* What is white light made up of?
* Draw a converging lens and a diverging lens. What is the difference between the two?
* Do humans see with their eyes? Explain.
* Uses and dangers of the electromagnetic spectrum.
  + Which type of wave is the most dangerous?

**Practice:**

Match the following terms with their correct definition

|  |  |
| --- | --- |
| 1. Light | 1. How we perceive the energy of light |
| 1. Incandescent | 1. Atoms convert energy directly to light |
| 1. Fluorescent | 1. Colored part of the eye |
| 1. Color | 1. Black hole in the middle of the eye that controls amount of light entering the eye |
| 1. Photons | 1. Clear water-like liquid that keeps your eye clean and provides nutrition |
| 1. Electromagnetic waves | 1. Polished, transparent disc that bends light |
| 1. Electromagnetic spectrum | 1. A form of energy that is produced by atoms |
| 1. Iris | 1. Tiny wave bundles of light energy |
| 1. Pupil | 1. Entire range of all electromagnetic waves |
| 1. Cornea | 1. Clear and flexible part of the eye that bends light helping the eye see close up and far away |
| 1. Lens | 1. Clear water-like substance in the back of your eye |
| 1. Aqueous Humor | 1. Condition where the eyeball is too long and the lens forms images in front of the retina |
| 1. Vitreous Humor | 1. Atoms convert energy to heat then to light |
| 1. Retina | 1. Bends light so it comes together |
| 1. Optic Nerve | 1. A wave that does not need a medium to travel |
| 1. Blind Spot | 1. Transparent bulge on top of the pupil that focuses light |
| 1. Lens | 1. Condition where the eyeball is too short where the lens forms images behind the retina |
| 1. Converging lens | 1. Connects eyeball to the brain |
| 1. Diverging lens | 1. Light bends while crossing through material |
| 1. Reflection | 1. Part of the eye with no photoreceptors to process light where the optic nerve leaves the eye |
| 1. Refraction | 1. Bends light so it spreads apart |
| 1. Nearsightedness | 1. Light bounces off a surface |
| 1. Farsightedness | 1. Part of the eye that contains light-sensitive photoreceptors (rods and cones) |

* Label the following diagram of the eye:

Now list the function of each of the following eye parts:

* Iris: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Pupil: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Cornea and Lens: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Aqueous Humor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Vitreous Humor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Retina: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Optic Nerve: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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