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

**Forensic Use of Light Fill-in-the-Blank Venn Diagram**

**Directions:** Compare and contrast the two theories of light.

Wave Theory Particle Theory



Light acts like a \_\_\_\_\_\_\_\_\_. Light transfers or carries Light acts like a \_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_.

Light waves are called \_\_\_\_\_\_\_\_\_\_\_\_\_ waves. Light travels in a \_\_\_\_\_\_\_\_\_\_. Light particles are called \_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_ is the distance from the crest of Color of light has to do with the \_\_\_\_\_\_\_\_\_ Photons transfer their energy to

one wave to the next. of the wave or the electron. \_\_\_\_\_\_\_\_\_.

The entire range of known light waves is We see light that is \_\_\_\_\_\_\_ not absorbed. Energized electrons jump up one \_\_\_\_\_\_

called the \_\_\_\_\_\_\_\_\_\_\_ spectrum. and then move back down to their

\_\_\_\_\_\_\_ of light is the bending of light. original \_\_\_\_\_\_\_ level.

The \_\_\_\_\_\_\_\_ of light is 3.0 X 108 m/s.

Some light is \_\_\_\_\_\_\_\_\_\_\_\_to the human eye

As wavelength \_\_\_\_\_\_, wave frequency (like \_\_\_violet, \_\_\_red, & \_\_\_rays)

decreases; they are inversely related. but is used in the analysis of

evidence for forensics.

When the electron moves back down, this releases a certain \_\_\_\_\_\_\_\_ that is individual for every \_\_\_\_\_\_ and can be used to identify \_\_\_\_\_\_\_\_\_elements.

Other examples of waves are: \_\_\_\_\_\_ and water. Light properties are used in many

forms of light technology like

The speed of light wave formula is \_\_\_\_\_\_\_\_\_\_\_\_\_ The photon theory of light is also

wave speed = \_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_\_\_ known as \_\_\_\_\_\_\_\_ physics.

and \_\_\_\_\_\_\_\_\_\_\_\_\_

**Forensic Use of Light Fill-in-the-Blank Venn Diagram Key**

**Directions:** Compare and contrast the two theories of light.

Wave Theory Particle Theory



|  |  |  |
| --- | --- | --- |
| Light acts like a **wave**. | Light transfers or carries | Light acts like a **particle**. |
|  |  |  | **energy** |  |  |  |
|  |  |  |  |  |  |  |  |

Light waves are called **electromagnetic** waves. Light travels in a **vacuum**.

Light particles are called **photons**.

**Wavelength** is the distance from the crest ofone wave to the next.

The entire range of known light waves is called the **electromagnetic** spectrum.

The **speed** of light is 3.0 X 108 m/s.

As wavelength **increases**, wave frequency decreases; they are inversely related.

Color of light has to do with the **frequency** of the wave or the electron.

We see light that is **reflected** not absorbed.

**Refraction** of light is the bending of light.

Some light is **invisible** to the human eye (like **ultra**violet, **infra**red, & **X-**rays) but is used in analysis of evidence for forensics

Photons transfer their energy to **electrons**.

Energized electrons jump up one **energy** and then move back down to their original **energy** level.

When the electron moves back down this releases an certain **color** that

is individual for every **element** and can be used to identify **unknown** elements.

|  |  |
| --- | --- |
| Other examples of waves are: **sound** and water. | Light properties are used in many |
|  |  |  |  |  |  |  | forms of light technology like |
| The speed of light wave formula is |  | **microscopes**, **spectrophotometry**, |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| wave speed = **wavelength** x **frequency**. |  |  | **refractometers**, and **lasers**. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | **(answers may vary)** |

The photon theory of light is also known as **quantum** physics.