**Sources of Light**

*First Basic Principle of Light*

Light is a form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and when it reaches a surface it can be\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into other forms of energy

* Solar cells change light into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Trees change sunlight into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy

*Sources of Light*

1. Incandescent Sources

An object is heated to a very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_until it emits visible light.

* Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Fluorescent Sources

A source that produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ light by the ionization of mercury within a phosphor coated tube.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ light bulbs

3. Phosphorescent Sources

The emission of light following\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to and removal of a source of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Main difference between phosphorescent and fluorescent is – particles in a fluorescent source release their light immediately.

4. Chemiluminescent Sources

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that emits visible light and not involving heat

* Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Bioluminescent Sources

An organism that relies on a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ within their \_\_\_\_\_\_\_\_to produce light

* Ex: Jelly fish and Squid

The First Basic Principle of light- Revisited

* ‘***Light is a form of energy***’ When light reaches a surface, it can be absorbed and transformed into other types of energy.

… into electrical energy … into thermal energy … into chemical energy

* Solar cells change Cameras change light into Trees convert light energy into food

 light into electricity thermal images (chemical energy)

* The amount of energy a surface receives depends on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the light. The more intense the light, the more light can be absorbed.

Intensity Demo:

* Why, if light travels in a straight line, does the page of the book appear brighter the closer it is to the flashlight?

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*The Second Basic Principle of Light:*

* *Light travels in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
* Light will continue to travel in a straight line until it\_\_\_\_\_\_\_\_\_\_\_\_ something.
* The light becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_as it travels farther away, which can be seen in this picture.

Laser Pointer and Dust:

* Why or how you see the laser going across the room?

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* So light keeps on going….forever! Unless it hits something.
* What happens when light hits something? Besides reflecting and absorbing?

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