

Name: _____

Date: _____

Use of Light

All light is a form of energy. Plants use the natural light energy from the sun to make their food. Light energy combined with photographic film produces an image we call a photograph. Scientists use both natural and artificial light to do many different jobs. Light energy can make electricity, send signals, and diagnose and treat illness. Every day you see things that use light energy. Some of them you may not even realize.

The Invisible Switch

You have probably walked through automatic doors hundreds of times. You walk up, and the door seems to open like magic. But it is not magic. There is a small cell connected to the door switch. That cell, called a photocell, is sensitive to light and shadows. When your shadow falls across the photocell, it triggers the door to open.



Light Energy

Light energy is often used to make electricity. Cells that do this are called photoelectric cells. A photoelectric cell that gets its light energy from the sun is called a solar cell. A small solar cell can collect light energy to run a calculator. A very large solar cell can collect a lot of light energy to make enough electricity to heat a house or building.



Light Reading

Bar codes may not mean much when you look at them, but they mean a lot to the beam of light at the check-out counter. A cashier passes the bar code across the light beam, which "reads" the pattern of light and dark in the code. That pattern is then found on a computerized list, and when a match is found a signal is sent to the register that tells it the name of the product and the price.



Light Videos

Laser light is so powerful that it can be used to drill rock or cut metal. But you might find a laser beam in your own home. A DVD player uses a beam of light to play a movie. A DVD has a shiny metal surface with grooves in it. In the grooves are very small bumps that make a pattern. That pattern is a code, and when the laser reflects off the surface of the disc, it “reads” the code. That code is then turned into sound.



Light Conversations

Telephone wires have changed a lot in the last couple decades. Conversations used to be carried through thick wires, hanging from poles. However, these wires could not carry very many voices at once. That is why we now use “optical fibres”, which are basically light tubes. While you talk, your voice is turned into electricity. The electricity is turned into codes of laser light flashes. Those flashes move along the optical fibre, which is about as thick as a human hair. One optical fibre can carry more than 1000 telephone conversations at the same time.



Questions

1. Make a list of things that use light. When you are done, talk to a partner to add more to your list. If time, keep finding new partners to make your list as big as possible.

Flashlight, Stoplight, CD Player, Digital Clock, TV, Car Headlights, ...etc

2. What is an important rule when dealing with lasers?

Never shine a laser towards someone's eyes.
