Did you know?

Light is a series of vibrating waves of energy that we see, while sound is a series of vibrating waves of energy that we hear. What's fascinating about light vibrations is that scientists have discovered how to control them to send information. For example, when you talk on the telephone, the sound vibrations of your voice are changed into laser light. This is a unique type of light that can travel in narrow beams through optical fibers, which are strands of material that allow the transport of large quantities of information. Light travels through optical fibres in the same sort of way it travels through water in this activity. As for your telephone conversation, how does the person you're talking to hear your voice? Well, the laser light is changed back into sound vibrations at the other end.

Amazing Liquid Light

What you need

- a tall, skinny glass jar with a screw-on lid
- newspaper
- flashlight
- hammer
- large nail and a small nail
- sink or container
- duct tape

Observation

- Does the light beam shine straight ahead through the hole in the lid, or does it stay inside the stream of water?
- What happens to the light if you put your finger in different parts of the stream?

What to do

1. Ask for help to make two holes in the jar lid.
2. Using the hammer and nails, make a large hole near one edge of the lid, and a smaller hole near the opposite edge.
3. Tape the flashlight to the bottom of the jar so the light shines into the jar.
4. Wrap newspaper around the jar and the flashlight so no light escapes. Do not wrap newspaper over the top of the jar.
5. Pour water into the jar until it is full.
6. Put the lid on tightly.
7. Now you can "pour" light. In a very dark room, turn on the flashlight and pour water out through the largest hole into a sink or container (the small hole allows air to flow into the jar as water flows out, to maintain the pressure balance in the jar).

Websites

If you want to find out more about optics, which is the science of light, this is a good place to start.
http://www.optics4kids.com/

More explanations of how fibre optics are used in communications technology.
http://www.howstuffworks.com/fiber-optic.htm