

## Introduction to Life Science • Enrich

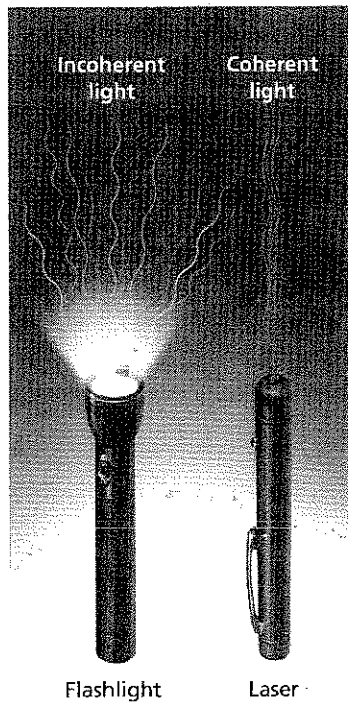
**Laser Surgery on the Eye**

Laser surgery is a type of technology that has benefited many people. Laser surgery uses light from a laser, which is a device that produces a narrow beam of light. Laser light, like all forms of light, consists of waves. However, unlike ordinary light, which is made up of different wavelengths, the light coming from a laser all has the same wavelength. In addition, laser light is coherent, which means that the waves line up with one another, as shown in the illustration.

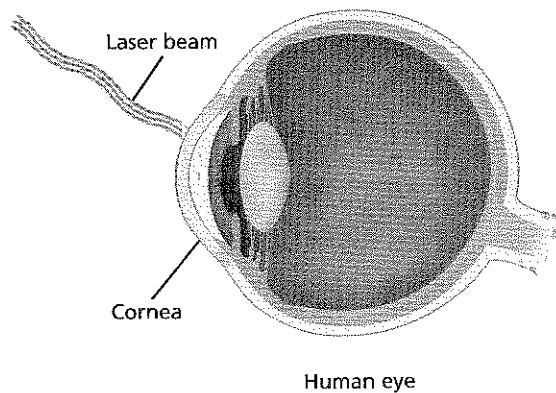
Laser surgery uses laser beams that are powerful enough to cut through living tissue. As the beam cuts through body tissue, it produces heat that seals off blood vessels. Because of this sealing, a patient typically loses less blood than during surgery performed with a knife, or scalpel.

Several vision problems can be corrected by laser surgery. For example, laser beams can be used to change the shape of a part of the eye called the cornea. This process can correct nearsightedness, in which distant objects look blurred, and farsightedness, in which nearby objects look blurred. Laser surgery can also remove abnormal blood vessels in the eye that cause vision problems.

**Laser Light Compared  
to Ordinary Light**



**Laser Surgery on the Cornea**



*Answer the following questions on a separate sheet of paper*

1. What is a laser?
2. How is laser light different from ordinary light?
3. What is one advantage that laser surgery has over surgery with a scalpel?
4. List three conditions that can be corrected by laser surgery.
5. What are nearsightedness and farsightedness? How does laser surgery correct these conditions?