Introduction

1. Lasers are only used in science fiction movies.
   Yes  No

2. Does a CD player use a laser?
   Yes  No

3. Can you see a laser beam in space?
   Yes  No

4. Are lasers used in telecommunications?
   Yes  No

5. Do physicians use lasers?
   Yes  No

Exploration 1: Nuts and Bolts

In this exploration you will learn about the different parts that constitute a laser.

A laser has three basic parts:

1) An energy source
2) A laser medium
3) Mirrors

Predict: What do you think will happen if you remove the energy source (flash tube)?

- It will not change.
- It will glow brighter.
- It will not work at all.
**Test your prediction:** Describe what happens.

**Predict:** What do you think will happen if you remove the laser medium (ruby rod)?
- It will not change.
- It will glow brighter.
- It will not work at all.

**Test your prediction:** Describe what happens.

**Predict:** What do you think will happen if you remove the partially mirrored surface?
- It will not change.
- It will glow brighter.
- It will not work at all.

**Test your prediction:** Describe what happens.

**Predict:** What do you think will happen if you remove the fully mirrored surface?
- It will not change.
- It will glow brighter.
- It will not work at all.

**Test your prediction:** Describe what happens.

**Predict:** What do you think will happen if you remove both mirrored surfaces?
- It will not change.
- It will glow brighter.
- It will not work at all.

**Test your prediction:** Describe what happens.
**Exploration 2:**  
*Let There Be Light*

In this exploration you will learn about the characteristics of the light emitted by a laser and by a bulb. You will also explore the movement of particles inside these two devices.

Compare the light emitted by the light bulb versus the one emitted by the laser.

Compare how the moving particles behave inside them.

**Light in Action**

Now you can explore how the light produced by a light bulb and a laser travel through different mediums.

Compare how the light bulb and laser behaved when traveling through different mediums.

**Exploration 3: Modern Uses of Lasers**

In this exploration you will explore the different modern devices that use lasers.

Summarize what you have learned.
Application

Let’s see what you have learned. Here you get to put all your knowledge to use and put together the pieces of a laser. If it is correct it will work!

Were you successful?