THE PAST AND THE FUTURE OF THE LASER

Student Worksheet

A. WARM-UP. BEFORE YOU READ

Answer the questions.



1. What do you know about the history of lasers? When did they appear?

a) in the 19th century b) in 1960 c) after 2000 d) in the 1950s

2. Who constructed the first-known laser?

a) Albert Einstein b) Thomas Edison c) Theodore H. Maiman

d) Isaac Newton

3. Where do we use lasers in everyday life?

a) only in medicine b) only in the army c) in CD players, printers, medicine, industry and communications

d) lasers are not used in everyday life

B. VOCABULARY. KEY WORDS OF THE TEXT

Match the words (1–8) with their definitions (a–h).

1. wavelength	a) an application of laser light used to produce three-dimensional images
2. coherence	b) the distance between two successive peaks of a wave
3. directionality	c) all the waves of light moving precisely in step
4. monochromicity	d) the specially prepared rod placed inside the flash lamp of the first laser
5. synthetic ruby rod	e) an ordinary source of light, very different from the output of a laser
6. incandescent light bulb	f) light of the same wavelength or colour
7. semiconductor crystal	g) the ability of the beam to be easily manipulated and sent in one direction
8. holography	h) a material that was found to possess laser qualities

Now complete the sentences with the words from the box.

wavelength • coherent • emitted • ground state • oscillator

1. Light in which all the waves move precisely in step is called _____ light.
2. An atom at its lowest energy level is in the _____.
3. A laser is actually an _____, that is, a generator or source of light.
4. The first ruby laser _____ an intense pulse of red light.
5. Monochromicity means that light is of the same _____ or colour.

LIVEWORKSHEETS

C. READING. THE PAST AND THE FUTURE OF THE LASER

Read the text and do the tasks below.

C1. TRUE OR FALSE?

1. The first laser was built before 1960. _____
2. Theodore H. Maiman used a synthetic ruby rod and a flash lamp. _____
3. Laser light has three unique properties: monochromicity, coherence and directionality. _____
4. Only solid-state materials can produce laser light. _____
5. Lasers are used in medicine, industry, communications and entertainment. _____
6. Looking into a laser beam cannot damage your eyes. _____
7. A qualified person is not needed to provide the power supply. _____
8. Safety rules must be strictly observed. _____

C2. COMPLETE THE GAPS WITH SUITABLE WORDS

features • powerful • immense • applications • destruction • safety

A laser is a source of monochromatic, directional and coherent light. These unusual (1) _____ make laser light unique. The first laser consisted of a specially prepared synthetic ruby rod and a (2) _____ flash lamp. During the experiment the researchers observed an (3) _____ pulse of red light. Lasers are now a multi-billion-dollar industry with numerous (4) _____ such as cutting and welding. However, an extremely (5) _____ beam can be a source of construction and (6) _____. That is why (7) _____ rules must be strictly observed.

D. GRAMMAR. PAST AND FUTURE

The laser has a past and a future! **Put the verbs in brackets into the Past Simple or the Future Simple.**

1. In 1960 Theodore Maiman (build) _____ the first laser.
2. Scientists (discover) _____ many new laser materials in the future.
3. We (use) _____ lasers in medicine, industry and communications today.
4. If you look directly into the beam, you (damage) _____ your eyes.
5. In fifty years people probably (invent) _____ applications we cannot even imagine now.

E. SAFETY RULES. IMPERATIVES

You are a safety engineer. Use the prompts to write safety rules with must / mustn't.

1. You _____ stand in the way of the cutting laser beam.
2. You _____ look directly into the beam or its reflection.
3. A qualified person _____ provide the external power supply.
4. You _____ strictly observe all safety rules.

LIVEWORKSHEETS