

Код УГПС – 19.00.00

Область образования: ПРОМЫШЛЕННАЯ ЭКОЛОГИЯ
И БИОТЕХНОЛОГИИ

Тема 4. Промышленные технологии и их влияние.

Understanding Radiation: Facts and Risks

Warm-up

Express your opinion on the following quotation.

“Nothing in life is to be feared. It is only to be understood”

(Marie Curie).

Reading

When we hear the word radiation, we often think about huge **explosions** and frightening **mutations**. But that is not the whole story. Radiation also relates to rainbows and an X-ray. So, what does it exactly mean, and how much should we worry about its effects?

The answer begins with understanding that the word radiation describes two different scientific phenomena – **electromagnetic** radiation and **nuclear** radiation. Electromagnetic radiation is pure energy that consists of electrical and magnetic waves. Modern society is all about electromagnetic radiation. Here, we download

an email to our phone via radio waves to open an image of an X-ray print. Nuclear radiation is known as the strong nuclear force which comes from natural sources like radon or gas.



If we live in a world of radiation, how can we escape from it? As for a start, not all radiation is dangerous. It becomes risky when it damages **DNA**. This means ionizing radiation which includes gamma rays, x-rays, and ultraviolet. That is why doctors cover body parts they do not need to examine during x-rays. And that is the reason why we use sunscreen before going to the beach.

The biggest health risk rises when lots of ionizing radiation hits us in a short time. It strikes body's ability to recover from the damage. This can cause cancers and even death. Fortunately, these cases are rare, but we daily get low levels of this radiation both from natural and **man-made** sources.

Our body often repairs from this small damage, and if it cannot, the symptoms of it may not appear for years.

We live in a world full of radiation. Although, much of it is not harmful, testing your home for radon and wearing sunscreen help reduce the health risks that radiation may cause.

- **explosion** – взрыв
- **mutation** – мутация
- **electromagnetic** – электромагнитный
- **nuclear** – ядерный
- **DNA** – ДНК
- **to recover** – восстанавливаться
- **man-made** – рукотворный

Radiation Science Basics

ANSWER THE QUESTIONS BASED ON THE TEXT.

1. What are the two scientific phenomena that the word radiation describes?
2. Name some natural resources of nuclear radiation.
3. When does radiation become risky?

PROJECT

Find more information of the given topics.

1. Do you think people are generally well-informed about the risks of radiation?
How can we change that?
2. Radiation is all around us but is it always harmful?
3. Radiation can be used for both good and bad purposes. What are some examples of each?