# Radiation Worksheet

**Watch the video and answer the following questions.**

1. What are the two types of radiation? _____ and _____.

2. Electromagnetic radiation is pure energy, consisting of _____ electrical and magnetic waves oscillating through space. As these waves _____ faster, they scale up in energy. At the lower end of the _____, there's radio, infrared, and visible light. At the higher end are ultraviolet, X-ray, and gamma rays.

3. Nuclear radiation, on the other hand, originates in the atomic nucleus, where protons repel each other due to their _____ positive charges. A _____ known as the strong nuclear force struggles to overcome this repulsion and keep the nucleus _____ . However, some combinations of protons and neutrons, known as isotopes, remain _____ , or radioactive. They will _____ eject matter and/or energy, known as nuclear radiation, to achieve greater _____ .

4. Is all radiation hazardous? _____

5. Are all nuclear radiation ionizing? _____

6. Are all electromagnetic radiation ionizing? _____

7. What is ionizing radiation?.

8. Give two examples: how do we escape the risk of hazardous radiation?

9. Give two examples: the application of radiation in our daily life.

10. Acute exposure.
    (1) What is acute exposure?
    (2) What are the consequences of the acute exposure?

11. One way scientists compare ionizing radiation exposure is a unit called the _____. An acute exposure to one sievert will probably cause _____ within hours, and four sieverts could be _____.

**ANSWER SHEET**

1. Electromagnetic radiation, nuclear radiation
2. Interacting, oscillate, spectrum
3. mutually, phenomenon, intact, unstable, randomly, stability.
4. no
5. yes
6. no
7. Radiation becomes risky when it rips atoms' electrons away upon impact, a process that can damage DNA. This is known as ionizing radiation because an atom that has lost or gained electrons is called an ion.
8.
9.
10. Acute exposures overwhelm the body's natural ability to repair the damage. This can trigger cancers, cellular dysfunction, and potentially even death.
11. Sievert, nausea, fatal.