

Radiation Worksheet: Teacher Answer Key

1. Do Image A and Demonstration A represent the effects of non-ionizing or ionizing radiation? Consider the effects you observed and what you know about these types of radiation in the electromagnetic spectrum. How might this type of radiation affect our bodies?

Non-ionizing radiation. Low frequency sources of non-ionizing radiation are not known to present health risks. High frequency sources of ionizing radiation (such as the sun and ultraviolet radiation) can cause burns and tissue damage with overexposure.

2. Do Image B and Demonstration B represent the effects of non-ionizing or ionizing radiation? Consider the effects you observed and what you know about these types of radiation in the electromagnetic spectrum. How might this type of radiation affect our bodies?

Ionizing radiation. It can damage living tissue by changing cell structure and damaging DNA. Children are more sensitive to ionizing radiation than adults because children are still in the process of growing. There are more cells dividing and a greater opportunity for radiation to disrupt the growth process.

3. Why do you need to be aware of and understand the difference between non-ionizing and ionizing radiation and their effects?

Answers may vary, but students should be aware that ionizing radiation can affect atoms in living things and pose a health risk. Therefore, we may need to take measures to limit our exposure to ionizing radiation. Non-ionizing radiation does not typically pose a health risk. However, higher frequency forms of non-ionizing radiation such as the sun and ultraviolet lights can burn our skin or damage our eyes.