Name: _____ Date: _____ Class: _____

Radiation in the Body Assignment

Assignment due date: _____

Question: Can ionizing radiation negatively affect human health?

Since "a picture is worth a thousand words" and many people are visual learners, your task is to answer the question above and present your answer in a visual format. This could include:

- a poster (must include diagrams);
- a PowerPoint slide presentation (must include diagrams); or
- a video (could include a dramatic presentation or hands-on demonstration using props to model particles, cells, etc.) – no more than five minutes in length.

To help you answer the question, below are some questions to help focus and guide your research.

Properties of ionizing radiation

- What are the properties of alpha, beta and gamma radiation?

How ionizing radiation enters the body

- Can alpha, beta and gamma radiation travel through skin?
- Can alpha, beta and gamma radiation pass through the body?
- Can ionizing radiation enter the body in any other ways? (Provide examples)

How ionizing radiation affects cells

- The energy from alpha, beta and gamma radiation can be transferred over what volume of cells?
- How much damage can the energy from alpha, beta and gamma radiation do to each cell?
- What can happen when ionizing radiation strikes a cell?
- Are some types of cells more sensitive to ionizing radiation than others? Which?

How ionizing radiation affects genetic material

- What are the direct and indirect effects of ionizing radiation on DNA?
- How can cells repair DNA damage?
- What can happen if DNA is repaired incorrectly?
- What is the difference between somatic and reproductive effects of ionizing radiation?