

---

**RADON PROJECT AND STATE SCIENCE PROFICIENCIES****II. CONTENT ALIGNMENT**

---

**EARTH SCIENCE**Radon Project

1. Geology
  - Igneous rocks
  - Metamorphism
  - Sedimentary rocks
2. General risk concepts and theory
  - Radon - example of risk
  - Statistics, probability
  - Evaluation of radon risk relative to other risks
  - Risk uncertainty
  - Living with risk

Science Proficiencies

1. Explain how rocks are formed, changed, and interrelated in terms of the rock cycle.
2. Identify the risks, together with the appropriate actions, involved in dealing with natural phenomena and environmental hazards, including weather, earthquakes, volcanic activity, and radon.

---

**CHEMISTRY**Radon Project

1. Atomic structure
2. Radon testing
3. Radioactivity
  - Types
  - Measurements
  - Radioactive decay series
  - Example decay series - uranium

Science Proficiencies

1. Identify the components of the atom, i.e., location, charge, mass, name.
  2. Apply the knowledge of atomic structure to show its relationship to the chemical behavior of the elements.
  3. Logically gather, order, and interpret data through an appropriate use of measurement and tools.
  4. Describe the sources and effects of ultra-violet, gamma, alpha, beta, infrared, and cosmic radiation.
-

**GENERAL ACADEMIC**Radon Project

1. Interpret charts and graphs that deal with:
  - Radon characteristics
  - Radioactive decay
  - Riskcommunication
2. Formulate action plans to:
  - Identify radon concentrations
  - Mitigate radon problems
  - Communicaterisk

General Academic Proficiencies

1. Interpret observations, graphs, and other data; comprehend the meaning of this information.
2. Evaluate data and make decisions based on sound scientific information and principles.

**PHYSICS**Radon Project

1. Evaluate measurement variability and uncertainty

Science Proficiencies

1. Recognize the error in measurement in light of their knowledge of the limits of precision in a given instrument and identify reasonable outcomes and predictions based on measurements with the instrument.
2. Apply a problem-solving technique while conducting inquiries (e.g., formulating a problem, setting up experimental conditions, etc.).
3. Apply the tools of physics in conducting inquiries (e.g., simple statistics, graphical models).

**BIOLOGY**Radon Project

1. Lung anatomy and basic physiology
2. How alpha particles damage cells:
  - Cancer initiation
  - Interactions between radon and cigarette smoking

Science Proficiencies

1. Identify the major systems of the human body and explain the major functions of each system.
2. Utilize the scientific method in solving biological problems and use mathematical operations where appropriate for solving these problems.
3. Evaluate information about current biological issues.

