Radiation Exposure Vocabulary Activities

The concepts surrounding radiation can be complex. By conducting a vocabulary activity before beginning an activity or series of activities, students will have a shared base knowledge.

Materials and Resources

- Vocabulary Materials document.
- Materials noted in activity suggestions.

Common Core State Standards (CCSS)

The concepts in this activity align with the following CCSS English Language Arts Standards for Literacy in History/Social Studies, Science, & Technical Subjects:

- Key Ideas and Details: CCSS.ELA-LITERACY.RST.6-12.2
- Craft and Structure: CCSS.ELA-LITERACY.RST.6-12.4
- Vocabulary Acquisition and Use: CCSS.ELA-LITERACY.L.6-12.6

Vocabulary by Activity

Activity 1: Types of Radiation	• Atom • Electromagnetic spectrum • DNA • Gamma rays	• Ionizing radiation • Non-ionizing radiation • Radiation • X-rays
Activity 2: Sources of Annual Radiation Exposure	• Cosmic radiation • Dose (optional) • Ionizing radiation • Man-made radiation • Natural (background) radiation	• Radiation • Radon • Rem (optional) • Terrestrial radiation
Activity 3: Penetrating Powers of Ionizing Radiation	• Alpha particles • Beta particles • Direct exposure • Exposure pathways • Gamma rays • Ingestion • Inhalation	• Ionizing radiation • Radiation • Radiation exposure • Radiation protection • Radioactive contamination • X-rays
Activity 4: Exposure Pathways	• Alpha particles • Beta particles • Direct exposure • Gamma rays • Ingestion • Inhalation • Ionizing radiation	• Man-made radiation • Natural (background) radiation • Radiation • Radiation exposure • Radiation protection • X-rays

Activity 5: Radiation Health Effects	• Alpha particles • Beta particles • Direct exposure • Gamma rays • Ingestion • Inhalation	• Ionizing radiation • Man-made radiation • Natural (background) radiation • Radiation • Radiation exposure • X-rays
Activity 6: Acute versus Chronic Exposure	• Alpha particles • Beta particles • Direct exposure • Gamma rays • Ingestion • Inhalation	• Ionizing radiation • Man-made radiation • Natural (background) radiation • Radiation • Radiation exposure • X-rays
Activity 7: Radiation: Fact or Fiction?	• Ionizing radiation • Radiation • Radiation exposure	• Radioactive atom • Radioactive material

Activity Suggestions

- **Identifying images:**
  - Print the applicable images from the Vocabulary Materials document.
  - Display the images around the room or spread them out in an open area on the floor.
  - Pronounce the vocabulary words one at a time. NOTE: You can provide the definition of the given word at this time or after students have identified the words.
  - Have students take turns identifying the words in an active manner. Suggestions include having students move to and identify the correct image, use a flashlight to point to the correct image (review safety rule: never shine the light in another person's eyes), drive a remote control car to the correct image, or throw a bean bag to land on the correct image.
- **Matching words and images:**
  - Print the applicable words and images from the Vocabulary Materials document.
  - Give each student a vocabulary word or image. Options: Fold or ball up the copies and let each student select one. Have students trade their copy with another student once or twice. NOTE: You may need an even number of participants.
  - Direct students to find the person with the matching word or image.
  - Review the matches to confirm they are correct.
  - Pronounce each word and provide a definition.
- **Spelling the words:**
  - Print the applicable words and images from the Vocabulary Materials document.
  - Display the words and images.
  - Pronounce each word and provide a definition.
  - Conduct a spelling activity:
    - Have students create a word scramble or word find activity, trade papers and complete the activity.
    - Play spelling basketball. Divide the class into two teams. Pronounce a vocabulary word. Have a student (alternating between teams) spell or write the word on the board. Students that spell the word correctly are given an opportunity to shoot a basket (use a trash can) with a ball of paper (ball) from a designated distance (or varying distances for a different number of points). The team that scores the most points wins. You can have students provide a definition for extra points.
- **Creating definitions:**
  - Print the applicable words and images from the Vocabulary Materials document.
  - Display the vocabulary words and images.
  - Pronounce the vocabulary words.
  - Have students work in pairs or small groups to hypothesize and create a definition for each vocabulary word.
  - Options: Direct one student from each pair/group to rotate and join another pair/group or have two pairs/groups join together. Direct the newly formed groups to compare their definitions and modify them if desired.
  - Review each pair/group's definitions, have students discuss what they agree/disagree with and share the accurate definition.