

Evolution of a Radioactive Atom 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: Atomic Discoveries	<ul style="list-style-type: none"> • Alpha particle • Atom • Electron 	<ul style="list-style-type: none"> • Neutron • Nucleus • Proton
Activity 2: Atomic Math and Shorthand	<ul style="list-style-type: none"> • Atom • Electron • Isotope 	<ul style="list-style-type: none"> • Neutron • Nucleus • Proton
Activity 3: Strong Nuclear Forces	<ul style="list-style-type: none"> • Atom • Electron • Ionizing radiation • Meson • Neutron 	<ul style="list-style-type: none"> • Nucleus • Proton • Radioactive atom • Strong nuclear force
Activity 4: Atomic Stability	<ul style="list-style-type: none"> • Alpha particles • Atom • Beta particles • Electron • Ionizing radiation • Neutron 	<ul style="list-style-type: none"> • Nucleus • Proton • Radiation • Radioactive atom • Radioactive decay
Activity 5: Half-Life Data Sheet	<ul style="list-style-type: none"> • Atom • Decay chain • Half-life • Ionizing radiation 	<ul style="list-style-type: none"> • Radiation • Radioactive atom • Radioactive decay
Activity 6: Radioactive Decay Chain	<ul style="list-style-type: none"> • Atom • Alpha particles • Beta particles • Decay chain • Gamma rays 	<ul style="list-style-type: none"> • Half-life • Ionizing radiation • Radiation • Radioactive atom • Radioactive decay

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 (being careful to avoid 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 to participate to have 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 at the front of the classroom.
 - 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 words and images at the front of the classroom.
 - 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 confirm the accurate definition.