

**TEACHER'S NOTES 4****CAN YOU SEE RADIATION?**

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**BACKGROUND**

Students will build a cloud chamber in this laboratory-oriented exercise, using available materials. The cloud chamber will allow students to visualize radioactive decay. As alpha or beta radiation passes through alcohol vapor, ions are formed and the trail of ions can be seen as streaks in the vapor “cloud”. This exercise is simple to perform and for students to comprehend. It provides a good opportunity for students to have some “hands on” experience with radioactivity; many students will find the exercise fascinating. It will be necessary to obtain a sample of radioactive material. A piece of uranium ore would be interesting, because uranium is so closely integrated into the entire radon issue. A low-level source from a science supply company would also work fine. Both alpha and beta sources can be obtained separately. The students will be able to see the differences in vapor trails produced by these two kinds of radiation.

**Caution: Please be sure that the students do not touch or handle dry ice or radioactive sources with bare hands. They should use tongs or gloves. Methyl alcohol is poisonous and flammable. Be sure it is kept away from flames.**

**MINIMUM RECOMMENDED TIME ALLOCATION**

One laboratory period

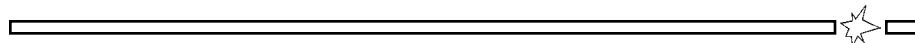
**STUDENT RESPONSES**

Question 12: Alpha particles will cause heavy, straight streaks. The much smaller beta particles are easily deflected by the vapor molecules they encounter, thus resulting in more erratic streaking patterns.

Question 13: Answers will vary.

Question 14: Some radiation particles, such as the smaller beta particles, will pass through the cloud without having any collisions with vapor molecules. These particles will not be detected.

Question 15: Answers will vary.





**Radon Alert**  
**Lesson Plan Evaluation Sheet**  
**and FREE POSTER AND STORYBOOK offer**

The New Jersey Department of Environmental Protection is happy to provide these lesson plans for use by teachers. In order to evaluate the use of the lesson plans, we would greatly appreciate your response to the following questions. All teachers who return these forms will receive a FREE RADON POSTER depicting information about radon in a colorful format and a STORYBOOK about a Native American child and his experience with radon in his home.

**1. Which Radon Alert lesson plan(s) did you use?**

\_\_\_\_\_

**2. How useful did you find it/them (check one) ?**

- Not useful
- Slightly useful
- Moderately useful
- Very useful
- Extremely useful

**3. Do you plan to use them again in the future?  Yes  No**

**4. In your view, what would make the lesson plans MORE useful:**

**Your name:** \_\_\_\_\_ **Phone Number:** \_\_\_\_\_

**Subject area:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Mailing address:**

\_\_\_\_\_  
\_\_\_\_\_

**To receive your FREE RADON POSTER and STORYBOOK, mail or fax this completed form to:**

**NJDEP Radon Program, P. O. Box 415, Trenton, NJ 08625**

**Fax: 609-984-5595.**

**(Questions? Call the Radon Program at 1-800-648-0394.)**