

Instructor: Ms. Donna Gioffre
School District: Hillsborough Township
Grades: 7-8

Subject: Science

Overview: Students will understand the contents in radioactive and how to test for them in everyday objects.

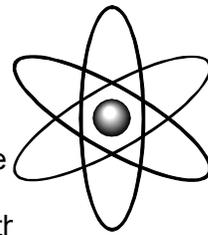
Objectives: Students will test and draw conclusions based on the Geiger counter.

Materials and Resources:

1. Geiger Counter
2. Fiestaaware
3. Lantern Mantle
4. Rock
5. Smoke Detector
6. Salt Substitute
7. Watch
8. Data Sheet
9. Health Physics Society Handout

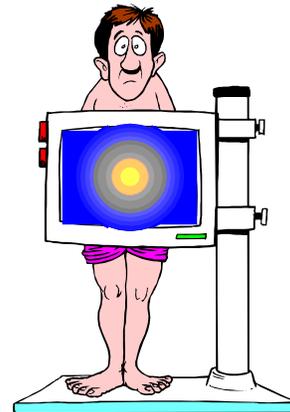
Procedure:

1. Students will independently read the Health Physics Society Handout to investigate the different objects that can contain radiation.
2. Students will also research what a Geiger counter is and what it is used for.
3. Students will create a hypothesis. They will list the items presented in front of them in order from the greatest to the least amount of radiation.
4. In groups of four students will then use a Geiger counter and test each substance and chart the results on their Data Worksheet.
5. Students will then answer the following questions on their Data Worksheet:
 - a) Which object has the highest count?
 - b) What do you think gives this object a high count?
 - c) Which object has the lowest count?
 - d) Why do you think it has the lowest count?
 - e) Which of these items do you have contact with on a daily basis?
6. Students will then meet with 2 other groups and discuss the following:
7. The relationship between the type of material and the CPM (mR/min)
8. Compare the similarities/differences with the other groups' rates for the different materials.
9. Students will write a brief conclusion on their findings.



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Evaluation: To observe for the proper use of a Geiger counter and review of the data and results.

Extensions:

Students can then use different shielding materials to discover the best shielding materials to use when handling radioactive substances.

Radioactivity Data Worksheet

Which of the given objects will have the highest radioactive reading and which the lowest? Give your hypothesis and list them in order from highest to lowest.
Hypothesis: _____



Object	Geiger Reading
Salt Substitute	
Fiestaware Plate	
A Rock	
Smoke Detector	
Lantern Mantle	
A Watch	

Answer the following questions in your group:

1) Which object has the highest count? _____

2) What do you think gives this object a high count? _____

3) Which object has the lowest count? _____

4) Why do you think it has the lowest count? _____

5) Which of these items do you have contact with on a daily basis? _____

Conclusion: _____

