

Radioactive Beans

Do your students understand exactly what is happening when a radioactive atom decays? If not, they will after doing this fun activity.

Materials per group- Small baggies of split peas and lima beans, cup, paper plate



1. Have students set up a piece of paper with the columns shown- Observation #, Time (increases by 2 minute increments), # of Split peas, # Lima beans.

Observation #	Time (minutes)	# Split peas	# Lima beans
1	0		0
2	2		
3	4		

This is available as a student handout (see last page).

2. Have students count exactly 100 split peas, put them into the cup, and pour onto the paper plate.

Now fill in the data for their first observation. Time is zero minutes (it just started). # of split peas will be 100, and there will be zero lima beans.

3. Remove any split peas that are FLAT SIDE UP and replace each one of those with a lima bean. *This represents a radioactive atom decaying and becoming another element.*

These instructions are also available on PowerPoint (see last page).

Fill in row 2 based on that roll. Talk students though it using a couple of groups as examples- 2 minutes have passed, count your remaining slit peas and record, count the number of lima beans that went in and record. The total number of all beans on the plate will always be 100.



4. Slide all the peas and lima beans on the plate back into the cup/beaker and pour onto the paper plate.

Again remove split peas that are flat side up and replace each with a lima bean.



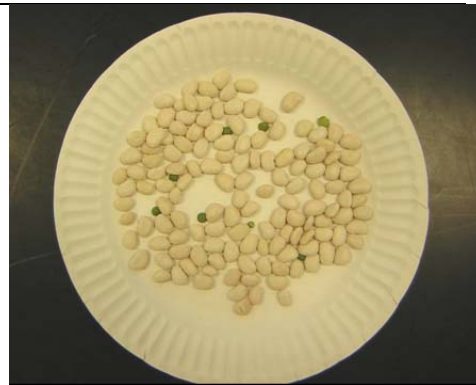
5. Record row 3 on chart- 4 minutes, fewer split peas, more lima beans.

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how radioactive atoms decay

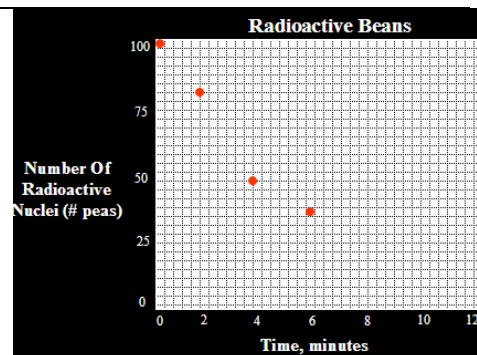
Observation #	Time (minutes)	# Split peas	# Lima beans
1	0	100	0
2	2	82	18
3	4	49	51

6. Continue until all radioactive peas have decayed. Some groups need 8 generations, some 15.



7. When finished have students set up the graph shown.

Complete the line graph using their data.



8. Homework will be these 2 questions-

1. What happens to radioactive elements over time?
2. What was the half life of your element in today's activity? (*at what exact point in time on your graph did you have 50 peas?*)

