

Name: _____

Geologic Time

Date: _____ Period: _____

Earth Science

Lab Activity: Absolute Dating

INTRODUCTION:

Some isotopes spontaneously emit particles or energy to yield a different element or isotope. This is called radioactive decay. This decay occurs naturally and is not affected by temperature, pressure, or chemical change.

Radioactive decay takes place at a random rate. Although you cannot predict just when any given atom will decay, you can predict that the billions of atoms within a small piece of a radioactive element, a given number will decay at a regular and predictable rate.

OBJECTIVE:

To become familiar with the process of radioactive decay, the factors that affects radioactive decay, and the different decay rates of various elements.

VOCABULARY:

Element -

Isotope -

Half-Life -

Stable Product -

Unstable Product -

Lab Activity: Absolute Dating

PROCEDURE:

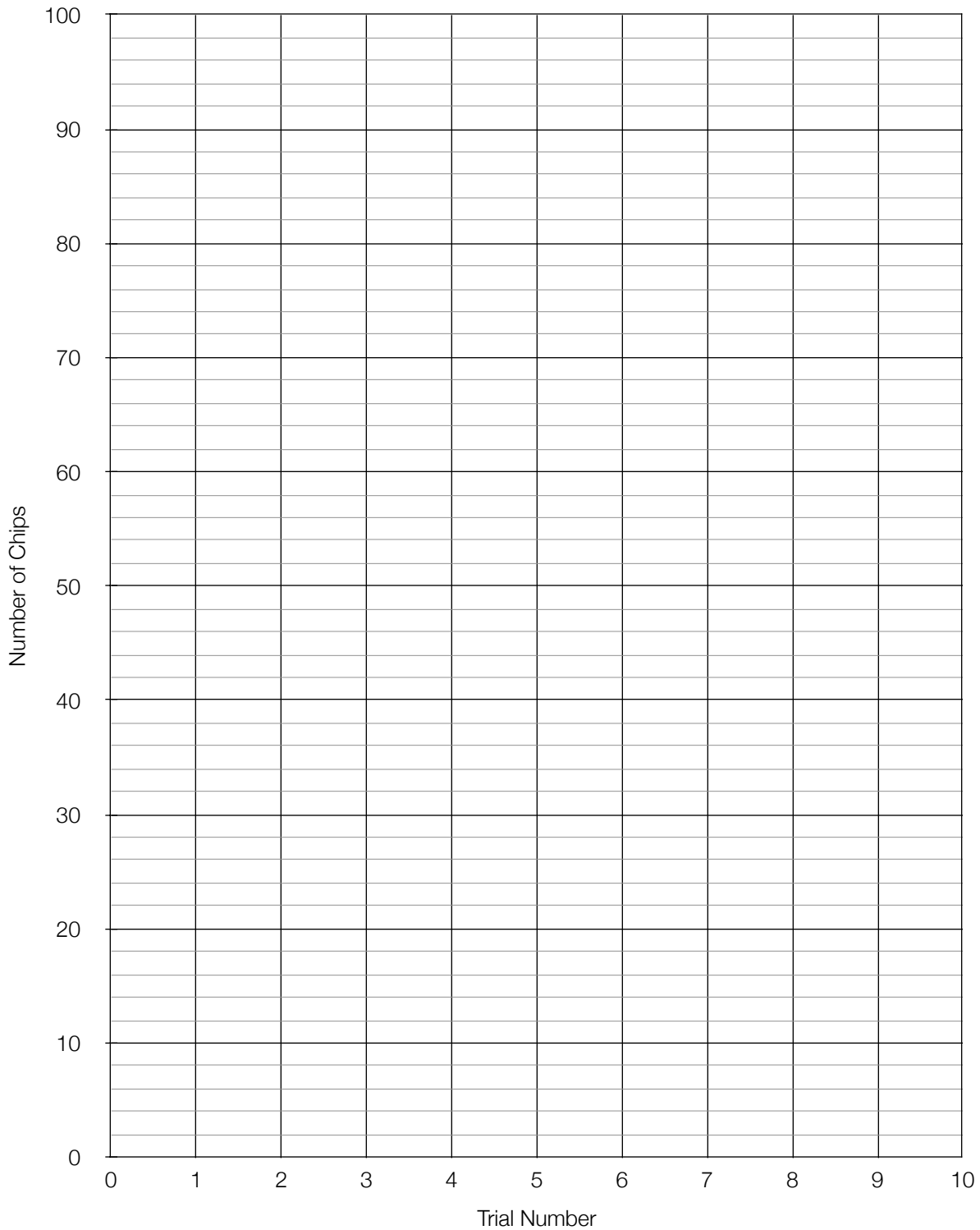
1. Count the chips in your contain and make sure that you are starting with 100.
2. Place the chips inside the container with the lid secured fastened and shake vigorously.
3. Open the container and carefully dump the chips out on a tabletop [don't lose any].
4. Separate the chips into two piles and count the number of "red" and "yellow" chips. Be sure to record the number of each on the Report Sheet.
5. Keep the "yellow" chips on the side and place the "red" chips back in the container.
6. Repeat steps 2 though 5 for ten total trials or until there is only one "red" chip remaining. Be sure to count the total number of yellow chips after each trial.
7. Create a double line graph with two different colors on Radioactive Decay Rate Graph.

REPORT SHEET

Trial Number	Red Chips	Yellow Chips
0	100	0
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Lab Activity: Absolute Dating

RADIOACTIVE DECAY RATE GRAPH



Lab Activity: Absolute Dating

DISCUSSION QUESTIONS:

1. What did the chips represent in the laboratory activity?
2. What did the trials represent in the laboratory activity?
3. Describe what happened to the amount of “red” chips during the activity?
4. Describe what happened to the amount of “yellow” chips during the activity?
5. If we did this experiment with billions of chips, would it be likely that we would ever get to zero?

CONCLUSION: Explain why a radioactive rock will never become completely stable?