MODELING RADIOACTIVE DECAY

MATERIALS NEEDED:

- 50 M&M's
  (coins or puzzle pieces also work)
- Cup
- flat surface to spread out your M&M's
- Pencil
- Data Collection Sheet (on back)

PROCEDURE:

1. Put 50 M&M candies into your cup. The 50 M&M's are recorded as Trial 0 on the Data Collection Sheet. All of the M&M's are radioactive.
2. Shake the cup and spill out the M&M's onto a flat surface.
3. Pick up ONLY the candies with the "m" showing - these are still radioactive. Count the "m" candies as you return them to the cup. Move the candies that are blank on the top to the side - these have now decayed to a stable state.
4. Record the number of "m" candies you returned to the cup under Trial 1 in your Data Collection Sheet.
5. Shake the cup with the radioactive M&M's. Spill them onto a flat surface.
6. Pick up ONLY the candies with the "m" showing - these are still radioactive. Count the "m" candies as you return them to the cup. Move the candies that are blank on the top to the side - these have now decayed to a stable state.
7. Record the number of candies you returned to the cup under the next Trial.
8. Repeat steps 5 through 7 until all the candies have decayed or until you have completed Trial 7.
9. Plot the results as a line graph on your Data Collection Sheet. Is the line straight or curved?

Record the number of M&M's with the "M" showing

Trial 0	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7
50							

Plot your results on a line graph below, is the result a straight or curved line?

Radioactive M&M's
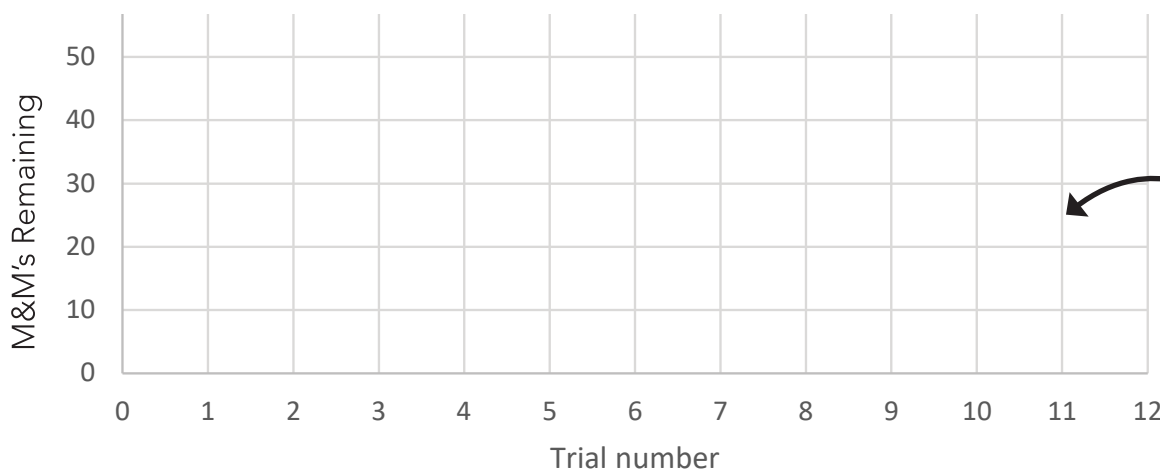
If you were to repeat this experiment, do you think you would see similar results?

This type of curve on a graph is called exponential decay

Adapted from an activity by the Eugene Science Center and the American Nuclear Society