CALCULATING PROBABILITIES

PART 1

1. Describe your group’s procedure for determining the probability that an asteroid colliding with Earth will strike land.
2. How is your group organizing your results and/or measurements? Either put your data table below or attach your results to this paper.
3. How many asteroids hit land? How many hit water? How many asteroids total (land + water)?
4. Determine the fraction or percentage of asteroids that hit land.
5. From your data, what is your main conclusion about the probability of an asteroid hitting land? How certain are you of your results?

Part 2

Empirical Probability

Theoretical Probability

PART 3

It can be estimated that approximately 60,000 meteorites can strike Earth each year, most of which weigh less than 10 grams, about the same as a standard pencil and not large enough to cause any major damage (Carter, 2015).

1. Design a process to calculate the *theoretical* probability that a given meteorite strikes land. You will have a globe or map and various math tools (ie, ruler, protractor, etc). Describe your thought process to do this in the space below.

2. Perform your measurements and either use below or attach your organized table of results to this paper.

3. Based on the results of your theoretical calculations, approximate how many meteorites should strike land? Explain your reasoning.

4. How does this probability compare to your experimental probability? What does this comparison

4. How confident are you of your results? What about your procedure or results give you confidence? How could you make your results more accurate?

Carter, L. (2015).How many meteorites hit Earth each year? Cornell University. Retrieved from http://curious.astro.cornell.edu/about-us/75-our-solar-system/comets-meteors-and-asteroids/meteorites/313-how-many-meteorites-hit-earth-each-year-intermediate

Pianka, E. R. (n.d.). Land. Retrieved from www.zo.utexas.edu/courses/THOC/land.html