

Lotto or Life: What are the Chances ?

Activity 1/ Part A

Now, before we go further with the discussion of life existing elsewhere in the Universe, we will establish some understandings about the lottery so that we can compare the likelihood of intelligent life existing elsewhere in the Universe and winning the lottery at the end of our lesson.

Let's simulate the experimental probability of a lottery game (such as Pick 3) where you, the participants, model the game with decahedron dice in cooperative groups of 3.

Procedure

1. Each group of three must have 3 decahedron dice, and must determine who is the recorder, dice roller, and digit chooser.
2. The digit chooser chooses a three digit number. Write your number below.

Note: we are not 'boxing' the number, each number rolled must be kept in order.
3. Dice roller, roll the 3 dice (one at a time) 20 times. Recorder, keep track of the data acquired in an organized fashion.
4. What was the experimental probability of your group winning with the digit chooser's number? Show your work below.
5. Now determine the theoretical probability of your group winning with the digit chooser's number. Write it below.
6. Explain how your answers to #4 and #5 are the same or different.
7. How could we change or modify our experiment so that the experimental probability would be closer to the theoretical probability?