

Let 'Em Roll™ Simulation

Participants from the Data Analysis and Probability Working Group developed a Fathom (Key Curriculum Press) lesson to simulate the Let 'Em Roll™ game from the game show The Price Is Right™. As described on The Price is Right™ website, Let 'Em Roll™ is a game where players play for a car using five cubes each with six sides. Three sides of the cubes contain a car symbol while the other three have a sum of money. A contestant has one free roll and then plays a small pricing game for two more rolls. The object of the game is to get five cars showing on the dice. If the die does not show five cars, the contestant gets whatever money shown on the cubes. For the purpose of this simulation, we assume that it is the strategy of the contestant to win the car.

Objectives:

- Demonstrate a real world situation where the probabilities of mutually exclusive and independent events occur.
- Calculate the experimental and theoretical probabilities of events.
- Explore how probability changes based on a change in a real world situation.

Prerequisites:

- Knowledge of calculation of probabilities of mutually exclusive and independent events
- Knowledge of basic differences between an experimental probability and a theoretical probability
- Experience with Fathom software.

Equipment needed:

Computer with Fathom software.

Lesson:

The teacher explains and simulates the Let 'Em Roll™ game using Fathom software. To prepare and to understand the Let 'Em Roll™ game, the teacher should read the Teacher Guide with this activity.

Starting off with the contestant having three rolls to win the car, each student simulates playing the Let 'Em Roll™ game 5000 times using Fathom software. They then repeat this process to find three more samples of size 5000. Using the four samples, each student makes an estimate for the theoretical probability of winning a car. The entire process is repeated assuming that the contestant only has two rolls to win the car. Once students have an estimate for each scenario, they are guided through calculating the theoretical probabilities by hand in the Extensions..

References:

“CBS Daytime: The Price is Right”. Retrieved July 5, 2005, from http://www.cbs.com/daytime/price/games/let_em_roll.shtml.