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Coin Tossing as a Favorite Class Experience, What is It Good For?

Coin tossing has a number of advantages as a class exercise. The equipment is always at hand, it takes very little time, it generates real data, and everyone has a feel for the data.

After students have performed an experiment, the results can be used to study ethical behavior. Analyzing the data may suggest that some members of the class did not follow directions. This generates a discussion of what evidence is required know that a individual cheated. The class can then be asked to specify the parameters required to justify a making a specific accusation. Of course the question of certainty is central to this process.

The data can be structured by counting the number of heads and tails, determining the number of runs, recording the distribution of run lengths, or viewing the frequency with which a run of one length follows a run of another length.

The analysis can focus on common sense, simulation, or a comparison with theory. The important factor is to avoid becoming immersed in complicated theory or calculations. It is best to present this exercise so as to focus on conceptual understanding and the insight this experience gives in the process of statistical analysis and inference. (Received September 28, 2005)