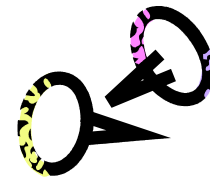# ACTIVITIES TO ENHANCE YOUR STATISTICS CLASSROOM

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We are pleased to describe for you a variety of activities that we have found useful in our Advanced Placement Statistics classrooms to enhance student learning and, at the same time, provide a variety of methods of assessment.

We have described 12 activities/assessments you can use throughout your statistics curriculum. If you are an AP Statistics teacher, you are well aware of the four themes of our curriculum. If you are not familiar with these themes, they are as follows:

- Theme One: Exploring Data: Observing Patterns and Departures from Patterns.
- Theme Two: Planning a Study: Deciding What and How to Measure
- Theme Three: Anticipating Patterns: Producing Models Using Probability Theory and Simulation
- Theme Four: Statistical Inference: Confirming Models

We have described a number of activities for the various themes. Of course, some themes lend themselves to create hands-on explorations more easily than other themes. You can certainly change the questioning to meet the needs of your curriculum and even move some of these investigations into other areas of your curriculum. A number of the activities can be modified to use with several themes. For example, you may focus on design during theme 2, and analysis during theme 3.

Most importantly have fun with them!

Please feel free to talk with us or email us at a later date if you have any questions about them.

DESCRIPTION OF ACTIVITIES TO ENHANCE YOUR STATISTICS CLASSROOM

1. Flying Gummi Bears
   Design and implement a study to investigate the flight of a gummi bear using a catapult.

2. How Random Are You?
   Create an investigation of human selection versus machine selection. Are humans able to think randomly?

3. How Much Tape
   Create an investigation to predict the amount of tape left on the roll. Use regression to develop an equation.

4. It Makes "Cents"
   Create an investigation to observe the distribution of the mean age of pennies for different sample sizes.

5. The Cookie Correlation Caper
   Design and implement a study to compare features of various brands of cookies.

6. How Long Will the Candy Last?
   Design and implement a simulation to investigate half-life decay. Use transformation and regression to model the behavior.

7. Random Toss
   Design and implement a study to estimate probabilities for thumbtacks, plastic pigs, or monopoly houses.

8. Penny Toss
   Design and implement a study to investigate if people can toss pennies more accurately with one hand versus the other.

9. Tack Toss
   Design and implement a study to investigate if there is a difference when tacks are tossed individually or all together.

10. Quick Grab
    Design and implement a study to investigate if people can grab more pennies with one hand versus the other.

11. Double Dice
    Design and implement a study to investigate if these unusual dice give different results than standard dice.

12. All-Star Baseball
    Design and implement a study to investigate if this fun board game gives results close to the actual player's performance.