

<b>Activity Title: Acting Like a Hog</b>		
<b>Description</b>	<b>Instructor Notes</b>	<b>Slides/Handouts/Files</b>
Students will play the game of Hog and try to develop an optimal strategy	<p>The students will first play the game of Hog using dice, and then are asked what strategy seems to work the best. Next, they will play the game using a set number of dice each time. By comparing their average number of points per turn they will again consider the question of the best strategy.</p> <p>The students will then use the calculator function dice(N) to generate data about the average number of points per turn while using a certain number of dice. By comparing their results with other students who used a different number of dice they can further refine their strategy.</p> <p>The students will be in groups of two or three while they play the game and investigate the results when using a set number of dice.</p> <p>The game concept will engage the students in the activity, and the results are somewhat counterintuitive for some students.</p>	10 dice for each group TI-73
<b>Participant Discussion</b>		
<p>This is an experiment about probability and mathematical expectation.</p> <p>The students will learn to use the dice(N) command on the calculator.</p> <p>The students will have a chance to choose a strategy for the game, and then revise that strategy as they experiment further.</p> <p>What misconceptions do you think that student might have?</p> <p>What could you do to make yourself more confident about the best strategy for the game?</p> <p>Other resources:</p> <p>Bohan, J.F. and Schultz, J.L (1996). "Revisiting and Extending the Hog Game". <i>The Mathematics Teacher</i>, 89(9), pp 728-733.</p> <p>Mathematical Sciences Education Board (1994). <i>Measuring Up: Prototypes for Mathematics Assessment</i>, Washington, D.C: National Academy Press.</p> <p>Feldman, L. and Morgan, F. (2003). "The Pedagogy and Probability of the Dice Game HOG". <i>Journal of Statistics Education</i> 11(2).</p>		