

That's the Way the Ball Bounces

- Activity Designed for: Groups of 2 or 3
- Grade Level: Algebra II or Pre-Calculus
(Potentially any grade level if the emphasis is on calculator use)
- Concepts Explored: Non-Linear Models of Data / Exponential Functions /
Data Gathering and Developing Proficiency with Investigation Tools
- Supplies Needed: A well inflated rubber ball,
CBR,
Two (2) TI graphing calculators,
link cable
- Location: Group will need approximately 4 ft radius of space to work.
Ground must be hard, flat, and clear of debris.
- Potential Issues: 1) Groups may need to conduct multiple trials to gather usable data - if
 group is not getting enough "bounces" consider changing the ball or
 assisting the group in dropping from a higher height
 2) Groups will be making two adjustments to raw data gathered by CBR. It
 is important that groups use the correct expressions on the calculator
 to make these shifts.
 3) Groups will identify a sample of points and transfer this data to another
 calculator. It is important that students select the correct points from
 their data.
 4) Data points used in this experiment will vary by fractions of a unit. It is
 important that students DO NOT round the data, with the notable
 exception of calculator generated misrepresentations of 0.
 5) Students should clear all lists before beginning this experiment and take
 great care when storing data and defining variables for a stat plot.
 6) The activity sheet indicates the CBR setting students should use when
 gathering data. Variations in these settings should not compromise
 the activity; however, students may find their data points are
 inconsistent with those of their peers and their modeling equation
 will likely use significantly different coefficients.