

Activity 7 On the Rebound

Teacher's Guide

Manufacturers of balls used in sporting events have certain requirements for the “bounciness” of the balls. New balls, when dropped from a certain height, must rebound back to a specified height.

In this activity you will investigate the relationship between the height a ball is dropped and the height it rebounds up to on the first bounce.

Collecting the Data

Have students work in groups of two or three. Give each group identical (same manufacturer and age) balls to work with (golf balls or racket balls work well). Have the students collect data as follows:

- Assign each group a height from which to drop the ball.
- Ensure that all groups are dropping the balls onto the same surface (such as a table top, carpeted floor, or other surface).
- Each group will drop the ball from their assigned height and determine the rebound height of the first bounce. The rebound height should be measured at least five times, with the average value recorded.

Note: The rebound height can be measured using a CBL 2 with a motion detector or a CBR.

- Collect the data from each group and enter it in the following table:

| Group | Initial Height | Rebound Height |
|-------|----------------|----------------|
| | List: INITH | List: RBNDH |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |

Making the Data Available

Enter the data in lists INITH and RBNDH where INITH represents the height from which the ball was dropped and RBNDH represents the average rebound height for the first bounce. Send the lists to the students along with the LearningCheck™ file or provide the data to the students so that they can create the lists.

Note: Although there will be variations in general, the data should be relatively linear.