**Rubber Bands**

Materials: Rubber bands, ruler, pen, masking tape (optional)

Jobs: Ruler/rubber band holder, rubber band measurer, distance measurer/recorder

Directions: Hold the ruler parallel to the floor with the 0 end pointing away from you. You will need to select 7 different lengths to stretch the rubber band back and then let fly. Don’t pull the rubber band farther than 12 inches. At each length you select, you will need to do 3 trials and average the distances for that length. **Rotate Jobs!**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Length Pulled Back (in), *x* |  |  |  |  |  |  |  |
| Distance, Trial # 1 |  |  |  |  |  |  |  |
| Distance, Trial # 2 |  |  |  |  |  |  |  |
| Distance, Trial # 3 |  |  |  |  |  |  |  |
| Mean Distance (ft), *y* |  |  |  |  |  |  |  |

1. Create a scatter plot (from the shaded boxes) showing the association of the length of the rubber band (independent variable) with the average distance traveled (dependent variable).

2. Summarize your scatter plot.

Discuss the direction and strength of

the correlation.

3. Fit a line to the data and find its

equation. (You may do this by hand

or with a calculator)

4. Use your equation to predict the distance a rubber band would travel if stretched the following length.

a. 4.65 inches b. 7.21 inches

c. 14 inches d. 1 inch

5. Use your equation to predict the length a rubber band would have to be pulled in order to travel the following distance.

a. 6 feet b. 20 feet

c. 25 feet d. 35 feet

6. Would it be reasonable to estimate how far a standard size rubber band would travel if we stretched it 25 inches? Why or why not?

7. You have learned that correlation and causation are not the same. In this case does the length the rubber band is pulled cause the distance it travels to vary? Explain.