Barbie Bungee

Make a Conjecture:

I believe that _____ is the maximum number of rubber bands that will allow Barbie to safely jump from a height of 400 cm.

1. Complete the data table below:

Number of Rubber Bands (x)	Jump Distance in Centimeters (y)
2	
4	
6	
8	
10	
12	

2. Make a scatter plot of your data. Indicate the scale on each axis.

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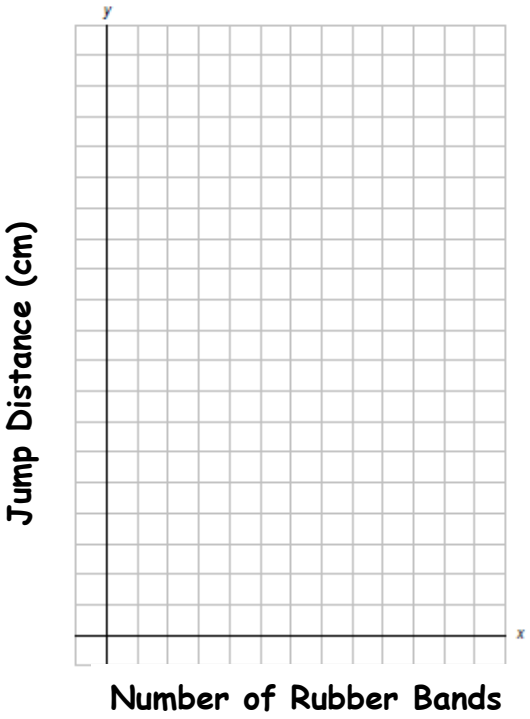

3. On the graph above, sketch a line of best fit.

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Analysis:

4. What is the relationship between the number of rubber bands and jump distance?

5. What is the equation for your line of best fit? (You may wish to use a graphing calculator for this part of the lesson. Enter the rubber band data in L_1 and enter the jump distance data in L_2.)

6. What is the slope of your equation, and what does it represent in this context?

7. What is the y-intercept of your equation, and what does it represent in this context?

8. Based on your data, what would you predict is the maximum number of rubber bands so that Barbie could still safely jump from 400 cm?

   Using your Line of Best Fit: _____

   Using your Regression Equation: _____

9. What is the minimum height from which Barbie should jump if 25 rubber bands are used?

10. Are your predictions reliable? Justify your answer. Be sure to consider your methods of collecting, recording, and plotting your data.

11. How do your predictions from Question 8 compare to the conjecture you made before doing the experiment? What prior knowledge did you have (or not have) that helped (or hindered) your ability to make a good conjecture?

12. In what ways did you contribute to the group while working on this project?