**How many rubber bands does Barbie need?**





How many rubber bands should we attach to Barbie so that she has the absolute most fun without smashing her head if she were to jump from the balcony in the front foyer of the school (5.3 meters above the ground)? Here’s the catch: You many only use 7 rubberbands to figure this out.

Complete the table:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # Rubber bands | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Distance traveled  |  |  |  |  |  |  |  |  |

Use your group’s data to complete the following:

1. Identify the explanatory and response variables.
2. How many variables do we have? Are they categorical or quantitative?
3. Use the applet at www.stapplet.com to make a scatterplot. Draw below.

4. Describe the relationship displayed in the scatterplot.



Displaying Relationships: Scatterplots

Important Ideas:

Check Your Understanding:

1. A study was conducted to see if the number of minutes of screen time is a good predictor of the popularity rank for Star Wars characters? Here are the data from recent study that ranked the 14 most popular characters.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Character | Rank | Screen time (min) |  | Character | Rank | Screen time (min) |
| Darth Vader | 1 | 150 |  | Chewbacca | 8 | 260 |
| Hans Solo | 2 | 261 |  | Yoda | 9 | 134 |
| Luke Skywalker | 3 | 282 |  | C-3PO | 10 | 359 |
| Princess Leia | 4 | 163 |  | Rey | 11 | 100 |
| Anakin Skywalker | 5 | 316 |  | Padme’ Amidala | 12 | 210 |
| Obi-Wan Kenobi | 6 | 294 |  | Emperor Palpatine | 13 | 107 |
| R2-D2 | 7 | 410 |  | Boba Fett | 14 | 59 |

1. Identify the explanatory and response variables. Explain your reasoning.

1. Make a scatterplot to display the relationship between screen time and rank for these Star Wars characters.

1. Describe the relationship shown in the scatterplot.