Option 1

Needed materials: Digital kitchen scale and a bag of rice or dried beans.

Data collection steps:

* Place bowl on scale and set to zero.
* With a regular teaspoon, place one scoop of rice/beans in the bowl.
* Record point (1, weight).
* Add another scoop of rice/beans.
* Record point (2, weight).
* Continue for as many steps as possible (at least 10).

Option 2

Needed materials: A digital scale for weighing people and a stack of clothes.

Data collection steps:

* Stand on scale.
* Record point (0, weight)
* Pick up one piece of clothing.
* Record point (1, weight + clothing item)
* Pick up another piece of clothing.
* Record point (2, weight + 2 clothing items)
* Repeat until your arms are full, at least 10 data points

Option 3

Needed materials: A wire, cord, or cable that you can tie in tight knots and a measuring tape. It could be an old USB cable, an extension cord, an old phone cord, etc...

Data collection steps:

* Measure the length of the wire.
* Record (0, length).
* Tie one knot in the wire and measure the length.
* Record (1, length).
* Tie another knot in the wire and measure the length.
* Record (2, length).
* Repeat until the wire is full of knots (at least 10).

Option 4

Needed materials: A breakfast cereal, preferably in round pieces (Froot Loops, Cheerios, etc…).

Data collection steps:

* Make a straight line with your cereal using 3 pieces. Then make a circle around those 3 pieces. Count the number of pieces (just the circumference) it takes to make the circle.
* Record (3, number).
* Now 4 pieces in a line. Make a circle around them. Count the number in the circumference of the circle.
* Record (4, number).
* Repeat! You can make as many circles as you want and as big as you want. Collect at least 10 data points.

Option 5

Needed materials: Digital kitchen scale and a long piece of candy (like a Red Vine).

Data collection steps:

* Weigh the piece of candy.
* Record (0, weight)
* Take a *small* bite and weigh what is left.
* Record (1, weight)
* Take another *small* bite and weigh what is left.
* Record (2, weight).
* Continue at least 10 bites.

Option 6

Needed materials: A digital stopwatch on your phone or on the web.

Data collection steps:

* Place finger above the start/stop button.
* Close your eyes.
* Press start and count 1 second.
* Press stop when you think exactly 1 second has passed.
* Record (1, actual time passed on stopwatch).
* Reset stopwatch.
* Repeat steps, but counting two seconds.
* Record (2, actual time passed on stopwatch).
* Repeat steps for at least 10 different times. Pick at least 5 times between 1 second and 10 seconds, but also use longer times like 20, 30, 60 seconds.

Option 7

Needed materials: Pulse rate app for your phone (free and easy to find in the app store) and a willingness to do *a little* bit of exercise.

Data collection steps:

* Measure pulse rate when sitting and relaxed.
* Record (0, pulse rate).
* Exercise in some way for 10 seconds (jumping jacks, push-ups, brisk walking around your room or outside, etc…). Measure pulse rate.
* Record (10, pulse rate).
* Rest.
* Exercise in the same manner but for a longer period of time, say 30 seconds. Measure pulse rate.
* Record (30, pulse rate).
* Rest.
* Repeat until you have gathered 10 different measurements.
* You can do this over several days. And if you love to workout, you can modify this to match what you do. Feel free to be creative!

Your StatCrunch Report

\*\*Make a scatterplot

→ Graph → scatterplot → choose your x & y variables → compute!

\*\*Run regression

→ Stat → Regression → Simple Linear → choose x & y variables → compute!

\*\*Make residual plot (choose Residuals vs. X-values in Simple Linear)

Save these **three** results for you report

(Options→ Save → Screen 1; Options→ Save→ Screen 2 (residual plot))

Your Report

\*\*Describe a scatterplot

\*\*Interpret the correlation coefficient in context

\*\*Write the regression equation in context

\*\*Use the equation to make a prediction (you pick an x-value)

\*\*Find and interpret a residual in context (for a point that you choose, show your work)

\*\*Interpret the slope in context

\*\*Interpret the y-intercept in context **and** describe how your observed y-intercept does not match your prediction.

\*\*Use the residual plot to evaluate the effectiveness of the linear model

\*\*Interpret R^sq in context

\*\*Discuss any outliers, high-leverage points, and influential points and their effect, if any, on the regression line and the correlation coefficient.