Scenario: Building a Simple Polynomial Regression Model

Suppose you are an analyst in the paper industry and you want to study the effect of a chemical additive on paper strength. The amount of chemical additive (**Amount**) is the independent variable and the amount of force required to break the paper **(Strength)** is the dependent variable. Relevant data are stored in the **paper** data set. Here is part of the **paper** data set, showing the data for strength and amount. This is a reasonably small data set, and you can get a sense of the relationship between the variables simply by looking at the data. It appears that the strength increases as the amount of additive increases up to a certain point and then begins to decrease. It is possible that a simple linear regression might not be appropriate and a polynomial regression might be necessary. You might need the model to include interaction terms. As recommended, you will start with visual data exploration in order to explore the relationship between the dependent and independent variables. Then you will model the relationship between the variables. To see details about the **paper** data set, click the Information button.

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