Demo: Fitting a Regression Model

In this video, we use the Cleaning data to fit a regression model for Removal and OD using Graph Builder and Fit Y by X.

We start with the Graph Builder, which is the first option under the Graph menu. We'll drag Removal to the Y zone, and then drag OD to the X zone. The default graph elements are points and the Smoother. The Smoother can be used to explore the nature of the relationship between the two variables. By dragging the slider for the Smoother, we can see if the relationship is linear, or if there is a more complicated relationship.

For Removal and OD, the relationship appears to be linear. To fit a simple linear regression line, we'll select the Line of Fit icon.

Many Line of Fit options are available. We will discuss these options throughout this module. For now, we deselect the Confidence Fit box, and check the Equation box. This displays the regression equation for Y, Removal as a function of OD. The intercept for our equation is 4.099, and the slope coefficient for OD is 0.5284

As a final step, click Done to close the control panel.

For a more formal analysis, we switch to the Fit Y by X platform from the Analyze menu. We'll select Removal as Y, Response, and OD as X, Factor. The analysis key, in the bottom corner, tells us that JMP will conduct a Bivariate Analysis. The default graph is a scatterplot. To fit a regression line, we select Fit Line from the red triangle. The fitted regression equation is displayed under Linear Fit. As expected, this is the same equation produced in Graph Builder.

Several panels of statistical output are provided by default, and additional analysis options are available under the top red triangle. We can also select additional options for the Linear Fit. We'll discuss this statistical output, and many of these Linear Fit options in future videos and exercises.

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