

Multiple Linear Regression

Use to model the relationship two or more continuous or categorical explanatory variables has with a continuous outcome variable. Useful to describe the relationships between the variables and to predict an outcome for different values of the explanatory variables.

Multiple Linear Regression Using Fit Model

1. From an open JMP® data table, select **Analyze > Fit Model**.
2. Click on a continuous variable from **Select Columns**, and click **Y** (continuous variables have blue triangles).
3. Choose explanatory variables from **Select Columns**, and click **Add**. To add an interaction term, select the variables and click **Cross**. Here we included the *sex*height* interaction.
4. Click **Run**.

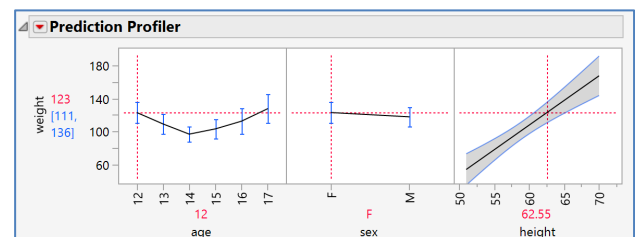
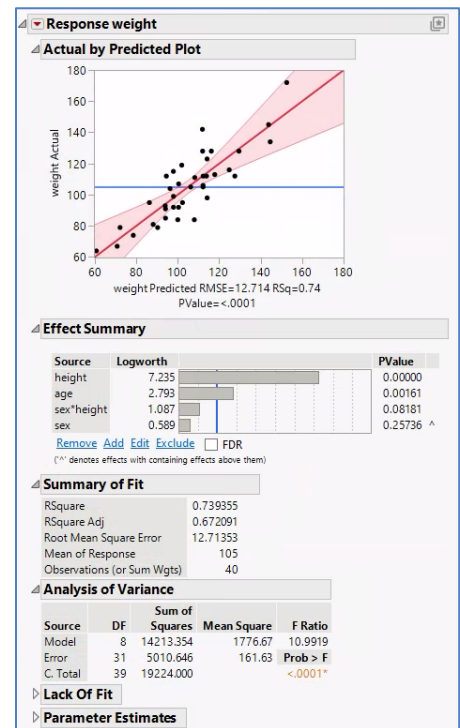
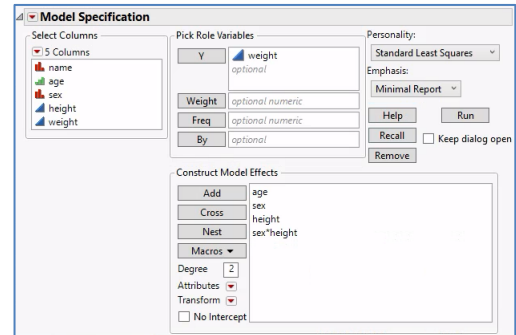
By default, JMP will provide the following output:

- Effect Summary
- Summary of Fit table.
- Analysis of Variance table.
- Lack of Fit table.
- Parameter Estimates table.

Note: default output can be changed via Preferences (**File > Preferences**) and selecting **Platforms > Fit Model > Fit Least Squares**).

- Select **Estimates > Show Predicted Expression** under the top red triangle to display an equation for the fitted model.
- To save the **prediction formula, predicted values, residuals** and other statistics to the data table, click on the **top red triangle**, select **Save Columns**. JMP will create new columns in the data table.
- Model Diagnostic plots can be found under **Row Diagnostics**. Here we also added an Actual by Predicted Plot.
- To view **indicator parameterization** (using 0, 1 coding), select **Estimates > Indicator Parameterization Estimates** from the top red triangle.
- To view the effects of the explanatory variables on the predicted response, click on the **top red triangle**, select **Factor Profiling** and choose **Profiler**. In the **Prediction Profiler**, click and drag the vertical red line for a variable to change the level or value. The **predicted mean response** and **95% Confidence Interval** are displayed.

Big Class.jmp (Help > Sample Data Folder)



Visit **Discovering JMP > Analyze Your Data > Analyze Relationships and Fitting Linear Models** in JMP Help to learn more.