

Multiple Linear Regression

Multiple linear regression is used to model the relationship between a continuous response variable and continuous or categorical 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**.
4. Click **Run Model**.

By default, JMP will provide the following results:

- Actual by Predicted Plot.
- Summary of Fit table.
- Analysis of Variance table.
- Parameter Estimates table, and more (not shown).

JMP also provides Leverage Plots for each explanatory variable in the model, and for nominal and ordinal variables, the least squares means tables.

Tips:

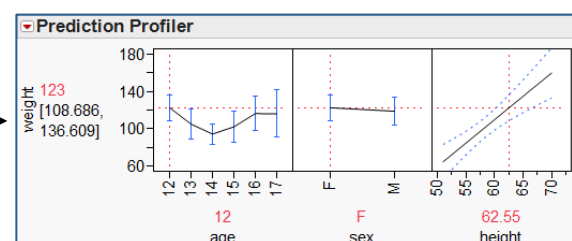
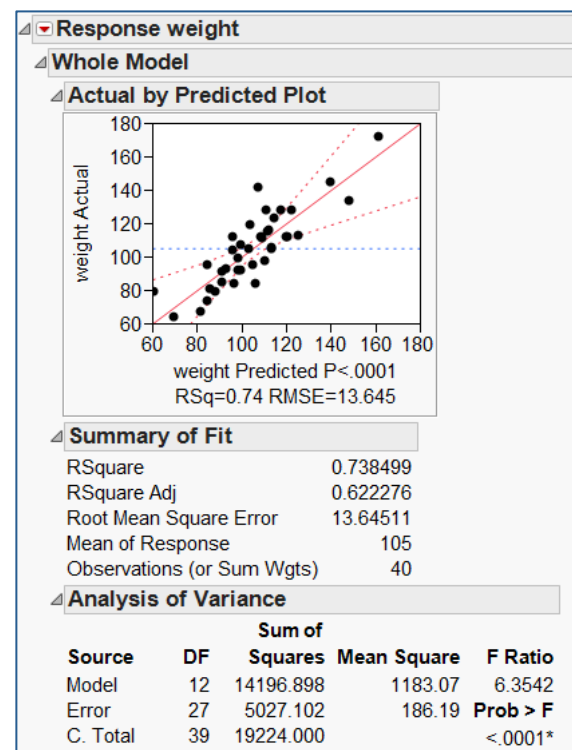
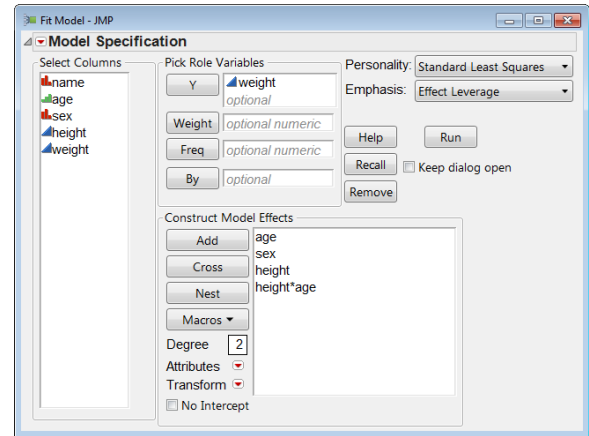
- To add interactions terms: In the **Fit Model Specification** window, select the variables under **Select Columns** and click **Cross**. The term **age*height** in the first figure is a two-way interaction. Higher-order terms can also be added.
- To save the prediction formula, predicted values, residuals or other values to the data table, click on the **top red triangle**, select **Save Columns**.

JMP will create new columns in the data table.

- To view **indicator parameterization** (using 0, 1 coding), select **Estimates > Indicator Parameterization Estimates** from the **top red triangle**.
- To view the effect of an explanatory variable 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 CI are displayed.

Example: Big Class.jmp (Help > Sample Data)



Note: For more details on regression analysis, see the book *Fitting Linear Models* (under **Help > Books**) or search for “regression” in the JMP Help.