# Assessing Normality

This guide provides some ways to assess the fit of a normal distribution to a continuous variable. See options for fitting and assessing the fit of other non-normal distributions in the **Fitting Distributions** guide.
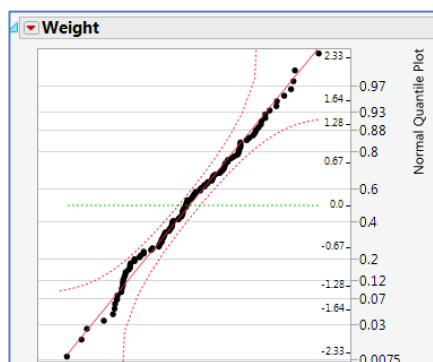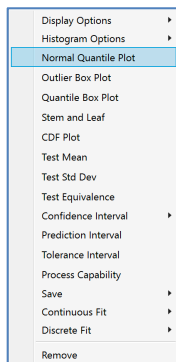
1. From an open JMP® data table, select **Analyze > Distribution**.
2. Select one or more continuous variables from **Select Columns** and click **Y, Columns**.
3. Click **OK** to generate a histogram (Histogram Only was selected in this example).

Car Physical Data.jmp
(Help > Sample Data Folder)
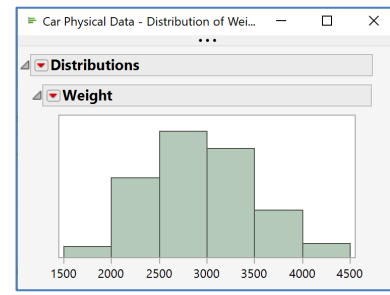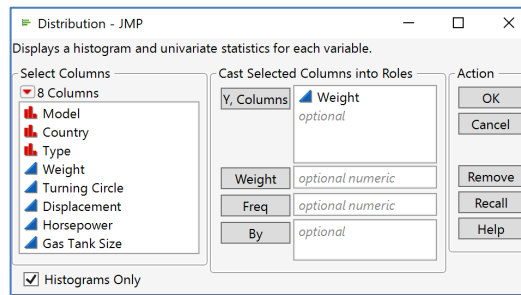
Normal Quantile Plot

Click on the **red triangle** for the variable, and select **Normal Quantile Plot**.


If the data more or less follow a straight line (fat pen test), we can conclude that the data are reasonably approximated by a normal distribution.

For this example, we would conclude the distribution is approximately normal.

Fitting a Normal Distribution

1. Select **Continuous Fit > Fit Normal** from the **lower red triangle** for the variable.
2. In the resulting output, click on the **red triangle** for **Fitted Normal Distribution** and select **Goodness of Fit**.
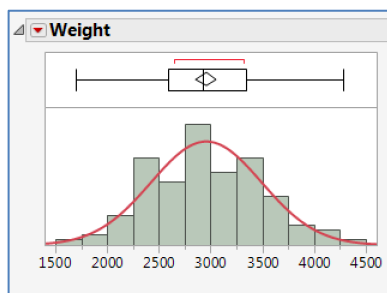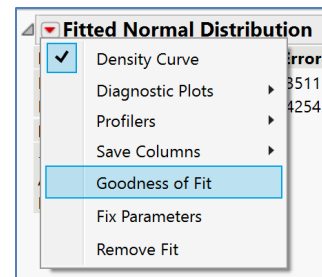
Fitted Normal Distribution

Parameter		Estimate	Std Error	Lower 95%	Upper 95%
Location	μ	2957.6293	49.73511	2859.1136	3056.145
Dispersion	σ	535.66353	35.397642	474.47889	615.10733

Measures

-2*LogLikelihood	1785.9672
AICc	1790.0734
BIC	1795.4744

Goodness-of-Fit Test

	W	Prob<W
Shapiro-Wilk	0.9900961	0.5681

	A²	Simulated p-Value
Anderson-Darling	0.3482459	0.4668

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

Two Goodness of Fit tests are performed to evaluate if the normal distribution is a good fit to the data (Shapiro-Wilk and Anderson Darling).

Both have large p-values indicating that there is no statistical evidence suggesting the normal distribution is not a good fit to these data.

Visit **Basic Analysis > Distributions > Options for Continuous Variables > Normal Quantile Plot** and
Basic Analysis > Distributions > Options for Continuous Variables > Fit Distributions in **JMP Help** to learn more.