

# Histogram

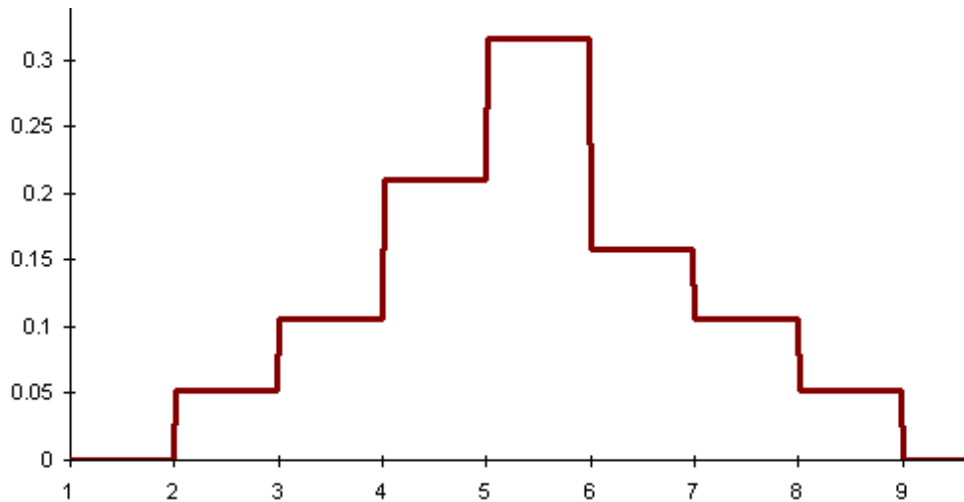
The histogram distribution can be constructed with [Crystal Ball's Custom distribution](#)

[Histogram equations](#)

The Histogram distribution takes three data arrays: the first column lists the minimum of each range; the second column lists the maximum; and the third column lists the frequencies (or relative frequencies) for the bands between the minimum and maximum. In Crystal Ball, one has to use the [Crystal Ball's Custom Distribution](#) to construct a Histogram distribution.

The figure below plots an example.

Histogram distribution using data:  $\{(2,3,4,5,6,7,8),\{3,4,5,6,7,8,9\},\{1,2,4,6,3,2,1\}\}$ ,  
constructed with Crystal Ball's Custom Distribution



## Uses

The distribution is useful in a non-parametric technique for [replicating the distribution shape](#) of a large set of data. The technique is simply to collate the data into  $i$  bands that each have a minimum and maximum you specify, calculate the number of data values that fall into each band, and then use this information to define the distribution. It has the disadvantage of 'squaring off' into the histogram shape, but with a lot of data and small bands the technique is a transparent and practical way of fitting a distribution to data.

## Comments

Crystal Ball automatically normalizes the distribution to have an area of one.

The histogram distribution is quite closely related conceptually to the [General distribution](#).

