Making Charts

“A picture is worth a thousand words”
Graphs and charts are a visual way to reduce columns of numbers to a meaningful visual context.

The use of graphs and charts grew independently in a variety of disciplines, so there is a verbose terminology and often confusing verbiage.

“There’s a sucker born every minute!”
“Charting” Programs

- Charting and/or graphing programs
- Charting and/or graphic modules that are portions of spreadsheets
- Graphs or charts produced by programs as standard output
Data Types

- **Continuous** - numerical or alphabetical data where the position on an axis represents some ranked continuum

- **Categorical** - data where the position on an axis has no intrinsic meaning
<table>
<thead>
<tr>
<th>Chart</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar</td>
<td>Numerical</td>
<td>Cat</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Column</td>
<td>Cat</td>
<td>Numerical</td>
<td>*</td>
<td>Histogram display</td>
</tr>
<tr>
<td>Area</td>
<td>Cat</td>
<td>Numerical</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Line</td>
<td>Cat/Num</td>
<td>Numerical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scatter</td>
<td>Cat/Num</td>
<td>Cat/Num</td>
<td>Numerical</td>
<td>XYYYYYYYYY</td>
</tr>
<tr>
<td>Paired Scat</td>
<td>Cat/Num</td>
<td>Cat/Num</td>
<td>Numerical</td>
<td>XYYYYXXYYYY</td>
</tr>
<tr>
<td>Pie</td>
<td>Numerical</td>
<td></td>
<td>% or totals</td>
<td></td>
</tr>
<tr>
<td>Ternary</td>
<td>Numerical</td>
<td>Numerical</td>
<td>Numerical</td>
<td>Percentages</td>
</tr>
<tr>
<td>Polar</td>
<td>Angle/</td>
<td>Radius/</td>
<td></td>
<td>Varies by discipline</td>
</tr>
<tr>
<td>Rose</td>
<td>Angle</td>
<td>Numerical</td>
<td></td>
<td>Count or %</td>
</tr>
<tr>
<td>Contour</td>
<td>Numerical</td>
<td>Numerical</td>
<td>Numerical</td>
<td>XYZ data</td>
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<tr>
<td>Grid Contour</td>
<td></td>
<td>Numerical</td>
<td></td>
<td>Tabular format</td>
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</tbody>
</table>

* = May have pseudo-3D charts
Programs

- Aabel, Deltagraph, Kaleidograph
- Excel, AppWorksSS, QuatroPro, Wingz
- Illustrator, Keynote, etc....
- Data formats can vary widely from program to program - you must check with the particular program to see what it 'expects'.
Bar Chart

Excel

Aabel
Bar Chart

Region 1

Region 2

2007

2006

2005

2004

0 25 50 75 100

Keynote

Chart Data Editor

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<tbody>
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<td>26</td>
<td>53</td>
<td>96</td>
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<tr>
<td>Region 2</td>
<td>55</td>
<td>43</td>
<td>70</td>
<td>58</td>
</tr>
</tbody>
</table>
Line Chart

Area Chart
Scatter Charts
3-D Pie Chart
Ternary

untitled worksheet
N: 39
Max Count: 8
Mean Direction: 355.1°
Circular Variance: 0.2832
Counting interval: 15°
Orientation: Var_3