Graphics that present data
Quick review

1. Show the reader what s/he needs to see.
2. Plan the sequence and directionality.
3. Think about the focal point of the graphic.
4. Integrate labels, units of measurement, and information into graphic to make interpretation efficient.
5. Make the color work with the information.
6. Place graphic where it will improve reader’s comprehension of complex material.
7. Label and title all graphics.
8. Remember to edit, revise, and proofread graphics.
And, with graphics that present data. . .

10. Don’t distort or disguise data.
   - Choose the appropriate graphic.
   - Label important events in data.
   - Be precise about data points.
   - Be sure to show error variance.
   - Avoid 3-D graphics, false perspectives, and “chart junk.”
Effective tables

• Order items in a way that your viewer finds useful.
• Label columns and rows clearly and specifically.
• Align entries. (In budgets, line up on decimal.)

• In large table, use white space or horizontal rule as a guide.
• Follow conventions for labeling and displaying graphics.
What works well? What doesn’t work?

Table 3: Sources of error in aerodynamic testing.

<table>
<thead>
<tr>
<th>Error Source</th>
<th>Type of Error</th>
<th>Relative Magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall interference</td>
<td>Systematic</td>
<td>Large</td>
</tr>
<tr>
<td>Mount interference</td>
<td>Systematic</td>
<td>Large</td>
</tr>
<tr>
<td>Load cell accuracy</td>
<td>Random</td>
<td>Small</td>
</tr>
<tr>
<td>Load cell noise</td>
<td>Random</td>
<td>Small</td>
</tr>
</tbody>
</table>
Effective bar charts

- Decide if chart should display vertically or horizontally.
- Use tick marks to indicate quantities on axis parallel to bar.
- Integrate label on or next to bar except if it would be too confusing.
Effective line charts

• Use tick marks to indicate quantities.
• Start axes at zero unless there is a good reason not to. Then, be scrupulous about indicating this.
• Consider labeling data points.
• Label accurately.
Dog Food Sales

Yum-E-Dog

Yuk-E-Dog

Courtesy M. Anderberg

Department of Aeronautics and Astronautics
Effective pie charts

- Label each edge and give its percentage of whole.
- Limit number of wedges.
- Avoid 3-D.
- Use color carefully.
Physical Resources: 39%
Past Military: 13%
Current Military: 17%
Human Resources: 21%
General Government: 10%
Department of Aeronautics and Astronautics: 20%

Department of Aeronautics and Astronautics
Effective scatter plots

- Organize nontemporal data.
- Show correlation between two variables.

<table>
<thead>
<tr>
<th>Study Hours</th>
<th>Regents Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>75</td>
</tr>
<tr>
<td>6</td>
<td>80</td>
</tr>
<tr>
<td>7</td>
<td>90</td>
</tr>
<tr>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>65</td>
</tr>
<tr>
<td>7</td>
<td>85</td>
</tr>
<tr>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>