

Take the Numb Out of Numbers



How to make statistics more
accessible and interesting

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Don't be afraid of math.

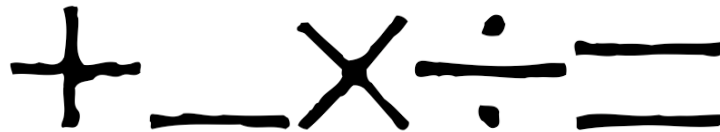
Crunch the numbers.

- 12 minutes per trip x 2 trips per month = 24 minutes
- 24 trips a month x 9 months per school year = 216 trips
- 216 trips a year x 30 teachers in the school = 6,480 trips
- 6,480 minutes a year / 60 minutes in an hour = 108 hours

Get the numbers right.

Make sure they add up.

Nebraska attractions	2006 visitors
Fort Robinson State Park	355,000
Scotts Bluff National Monument	132,166
Arbor Lodge State Historical Park & Museum	100,000
Carhenge	86,598
Stuhr Museum of the Prairie Pioneer	60,002
Buffalo Bill Ranch State Historical Park	28,446



Do the math.

Picture it.

Use the right formula.

$(\text{new} - \text{old}) = \text{change}$	$300 - 100 = 200$
$\text{change} / \text{old} = \text{decimal value}$	$200 / 100 = 2$
$\text{decimal value} \times 100 =$ percentage change	$2 \times 100 = 200$

- **NewsEngin's Percent Change Calculator.** Never call Dad to check your math again: <http://tinyurl.com/5hxb2>

Adjust for inflation.

- **The Inflation Calculator.** Getting it right means never having to say you're sorry: <http://tinyurl.com/lkwua>

Use good data.

Avoid bad math.

6,527,293,978

=



Make numbers meaningful.

Use like forms.

- Three-quarters
- 80 percent
- seven out of 10

Make figures compelling.

- 1,286 out of every 10,000
- 12.86 percent

Give numbers context.

- \$1.25 billion

Convert numbers into things.

- **FedStats.** This Website bills itself as “the gateway to statistics for over 100 federal agencies”:
<http://www.fedstats.gov>
 - Don't miss **MapStats** for comprehensive data on U.S. states:
<http://tinyurl.com/kwb99>



Don't do a data dump

Avoid statistics soup.

Rising rates are a problem because they make homes less affordable. For example, a standard 30-year mortgage loan of \$250,000 at 5.5% will cost a homeowner about \$1,419 per month. Raise the interest rate to 7.5%, and the monthly bill is \$1,748 – a payment level that would put a chill into many a homeowner's budget.

Rising rates are a problem because they make homes less affordable. An increase of just 2 percentage points on a 30-year home loan can raise the monthly bill to a payment level that would put a chill into many a homeowner's budget.

Rising interest rates make homes less affordable

30-year house mortgage		
Interest rate	5.5%	7.5%
Monthly mortgage payment	\$1,419	\$1,748

It adds up: A small increase in interest rates can make a big difference in your monthly budget.



Make your point.

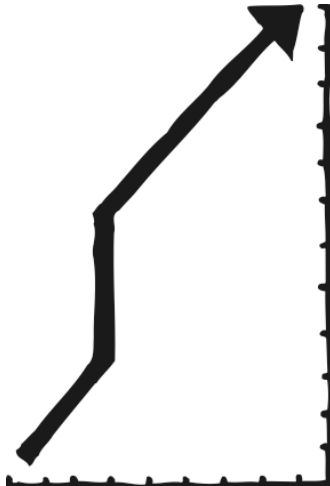
Sherman collected well-quantified data on 92 pressure ulcers in 67 treated patients. Of these wounds, 43 received maggot therapy and 49 were treated by conventional means alone. The maggot-treated wounds tended to go deeper into the flesh and, on average, initially covered 22 square centimeters, making them more than 50 percent larger. On average, 6 square cm of each wound was covered with tissue that was necrotic, that is, dead or dying.

Spread your stats around.

Round numbers off.

- 64.36752 percent

Do use precision to make a point.



Present numbers graphically

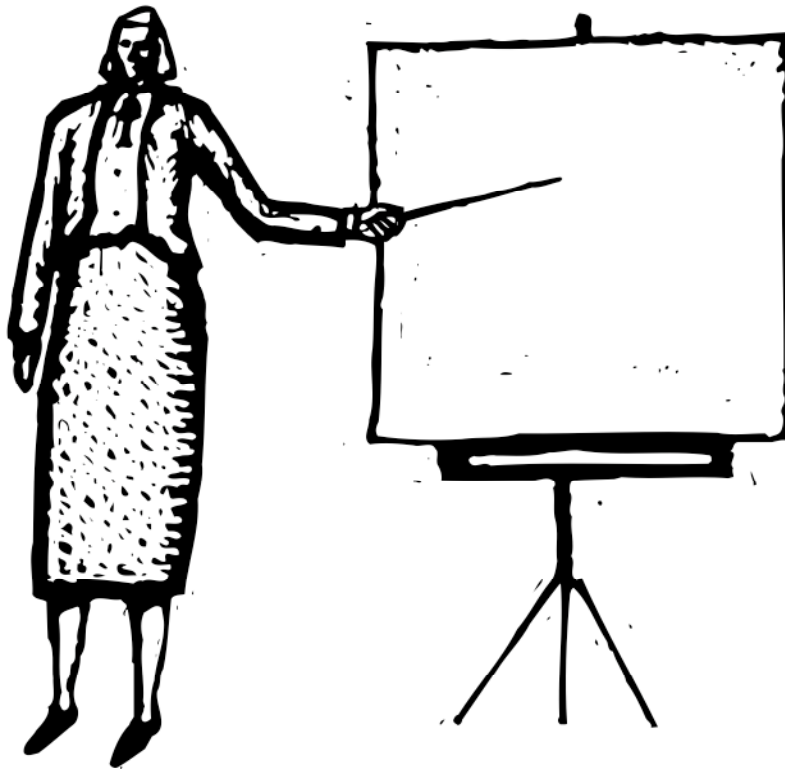
Choose the right kind of chart.

- Bar chart to show each piece relates to the others
- Pie chart to show how each piece relates to the other and to the whole
- Vertical bar chart to fix several things in one moment in time
- Line chart to show trends
- Table to compare two or more items by two or more characteristics

Communicate with charts.

- Cut your pie into big pieces.
- Position time values from left to right.
- Keep it simple.

The Visual Display of Quantitative Information. Don't create — don't even assign — another chart until you've read Edward Tufte's text on presenting statistics graphically. Tufte, dubbed "the da Vinci of data," has produced the classic book on statistical charts, graphs and tables: <http://tinyurl.com/jer67>



Present your chart.

- Write a headline and a caption.

Rising interest rates make homes less affordable

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- Integrate charts with text.