

Using free websites to teach how to graph in basic statistics methods courses and statistics content for pre-service elementary teachers

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1, Kids Zone.

The screenshot shows the 'Kids Zone' website interface. At the top, there is a navigation bar with the 'KIDS! ZONE' logo and the tagline 'Learning with NCES'. To the right of the logo are six icons: a house for 'HOME', a pair of scissors for 'TOOLS', a bar chart for 'GRAPH', a globe for 'DARE TO COMPARE', a bag for 'GRAB BAG', and a dice for 'CHANCES'. Below the navigation bar is the main title 'CREATE A GRAPH' in a stylized, colorful font. The interface is divided into two main sections. On the left is a 'Help' and 'Examples' sidebar. The 'Help' section features a question mark icon and text explaining that graphs and charts are used to communicate information visually. The 'Examples' section features a bar chart icon and text explaining that NCES uses graphs and charts in its publications and on its website. On the right is a large green box containing five graph type icons: 'Bar', 'Line', 'Area', 'Pie', and 'XY'. Below these icons is the text 'Please select a graph type to begin'. At the bottom of the page, there is a link for 'New to creating graphs? Then try...' which points to 'CREATE A GRAPH Classic'.

KIDS! ZONE
Learning with NCES

HOME TOOLS GRAPH DARE TO COMPARE GRAB BAG CHANCES

CREATE A GRAPH

Help ? Graphs and charts are great because they communicate information visually. For this reason, graphs are often used in newspapers, magazines and businesses around the world.

Examples NCES constantly uses graphs and charts in our publications and on the web. Sometimes, complicated information is difficult to understand and needs an illustration. Graphs or charts can help impress people by getting your point across quickly and visually.

Here you will find five different graphs and charts for you to consider. Not sure about which graph to use? Confused between bar graphs and pie charts? Read our:

[Create A Graph Tutorial](#)

Bar Line Area

Pie XY

Please select a graph type to begin

New to creating graphs? Then try...

CREATE A GRAPH
Classic

Example 1

Number of Postsecondary Institutions

| | Public | Private |
|------------|--------|---------|
| Arizona | 27 | 16 |
| Colorado | 29 | 12 |
| New Mexico | 27 | 9 |
| Utah | 10 | 4 |

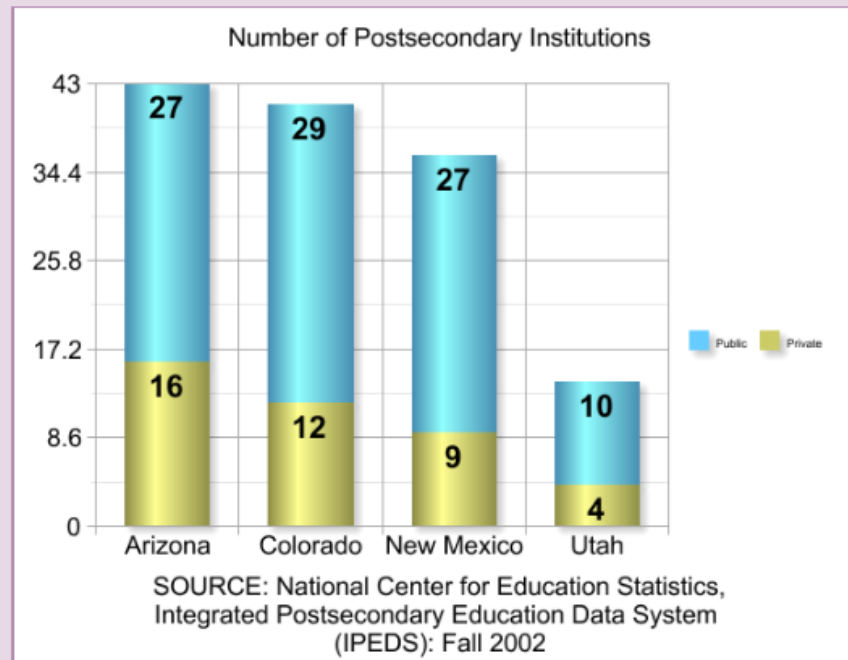
Graph Title: Number of Postsecondary Institutions
↔ X Axis Label:
↕ Y Axis Label:
Source: SOURCE: National Center for Education Statistic

Data Set: Items 4 Groups 2

Group 1 Group 2
Group Label: Public Private
Color: Bar Bar
Item Label Value Value
Item 1: Arizona 27 16
Item 2: Colorado 29 12
Item 3: New Mexico 27 9
Item 4: Utah 10 4
Min-Value: 0
Max-Value: 43

NOTE: Values may only be numbers.

Example 1





Example2

| | | | |
|-----|--------|--|--|
| Jan | \$1.59 | | |
| Feb | \$1.67 | | |
| Mar | \$1.77 | | |
| Apr | \$1.83 | | |
| May | \$2.01 | | |
| Jun | \$2.04 | | |
| Jul | \$1.94 | | |
| Aug | \$1.90 | | |
| Sep | \$1.89 | | |
| Oct | \$2.03 | | |
| Nov | \$2.01 | | |
| Dec | \$1.88 | | |

Graph Title: U.S. Average Price of Gasoline per Gallon

↔ X Axis Label:

↓ Y Axis Label:

Source: source: 2004 U.S. Bureau of Labor Statistics

Data Set: Items 12 Groups 1

Group 1

Group Label:

Line Width: medium

Point Shape: circle

Point Size: large

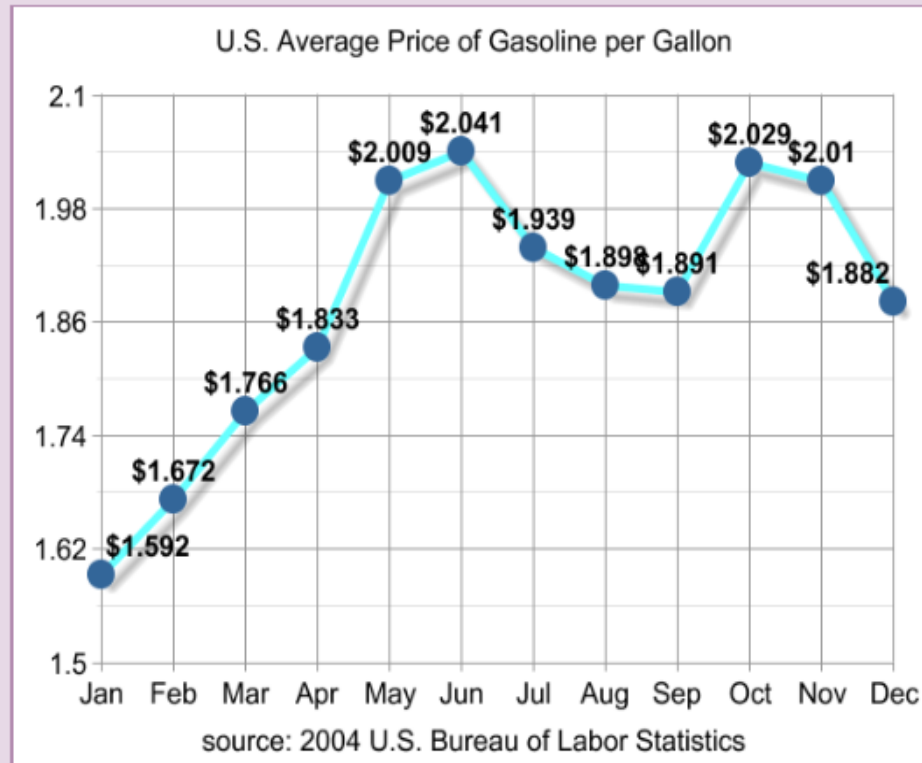
Color:



| | Item Label | Value |
|----------|------------|---------|
| Item 1: | Jan | \$1.592 |
| Item 2: | Feb | \$1.672 |
| Item 3: | Mar | \$1.766 |
| Item 4: | Apr | \$1.833 |
| Item 5: | May | \$2.009 |
| Item 6: | Jun | \$2.041 |
| Item 7: | Jul | \$1.939 |
| Item 8: | Aug | \$1.898 |
| Item 9: | Sep | \$1.891 |
| Item 10: | Oct | \$2.029 |
| Item 11: | Nov | \$2.010 |
| Item 12: | Dec | \$1.882 |
| | Min-Value: | 1.5 |
| | Max-Value: | 2.1 |

NOTE: Values may only be numbers.

Example 2





Example3

Airline On-Time Statistics and Delay Causes






| | | | |
|--------------|-------|--|--|
| Weather | 74.94 | | |
| Equipment | 0.2 | | |
| Closed Runwa | 4.14 | | |
| Volume | 19.17 | | |
| Other | 1.55 | | |

Example3

Graph Title: Airline On-Time Statistics and Delay Causes

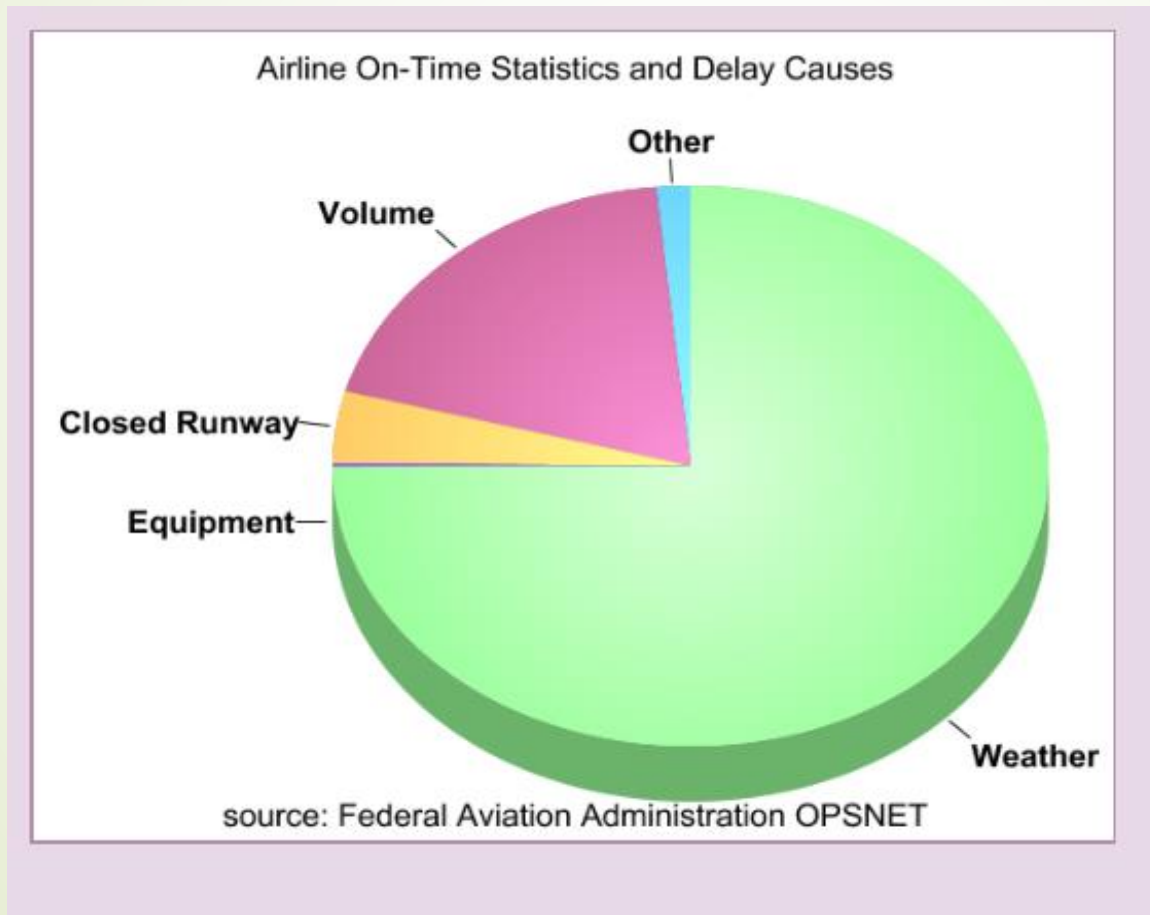
Source: source: Federal Aviation Administration OPSNET

Data Set: Pie Slices 5

| | Item Label | Value | Color |
|----------|----------------|-------|---------------------------------------------------------------------------------------|
| Slice 1: | Weather | 74.94 |  |
| Slice 2: | Equipment | 0.20 |  |
| Slice 3: | Closed Runways | 4.14 |  |
| Slice 4: | Volume | 19.17 |  |
| Slice 5: | Other | 1.55 |  |

NOTE: Values may only be numbers.

Example3



2, NCTM's Website.

The screenshot displays the NCTM Illuminations website. At the top, the NCTM logo and 'ILLUMINATIONS' text are visible, along with navigation links for 'Contact Us', 'Join NCTM', and 'About Illuminations'. Below the header, there are tabs for 'Lessons' and 'Interactives', and social media icons for Pinterest, Facebook, Twitter, and Email. The main content area features the title 'Advanced Data Grapher' with a progress bar. Below the title, it specifies 'GRADE: 6-8, 9-12', 'STANDARDS: Data Analysis and Probability', and 'MATH CONTENT: Data Analysis and Probability'. A descriptive paragraph explains the tool's capabilities for creating various graphs. At the bottom of the page, there are tabs for 'Activity', 'Instructions', 'Exploration', 'Related Resources', and 'Print All'. The central focus is a preview window of the 'Advanced Data Grapher' tool, which includes a toolbar with icons for 'New', 'Box Plotter', 'Bubble', 'Scatterplot', 'Histogram', and 'Stem-Leaf', a 'Preview' button, and input fields for 'Graph Title:' and 'X Axis Label:'. Below these fields is a data table with a header row and one data row.

Advanced Data Grapher

GRADE: 6-8, 9-12 STANDARDS: Data Analysis and Probability MATH CONTENT: Data Analysis and Probability

The Advanced Data Grapher can be used to analyze data with box plots, bubble graphs, scatterplots, histograms, and stem-and-leaf plots. You can enter multiple rows and columns of data, select which set(s) to display in a graph, and choose the type of representation. (To analyze data with bar graphs, line graphs, pie charts, or pictographs, try the [Data Grapher](#).)

Activity Instructions Exploration Related Resources Print All

Advanced Data Grapher Interface:

- Graph Title:
- X Axis Label:
- Toolbar: New, Box Plotter, Bubble, Scatterplot, Histogram, Stem-Leaf, Preview
- Table:

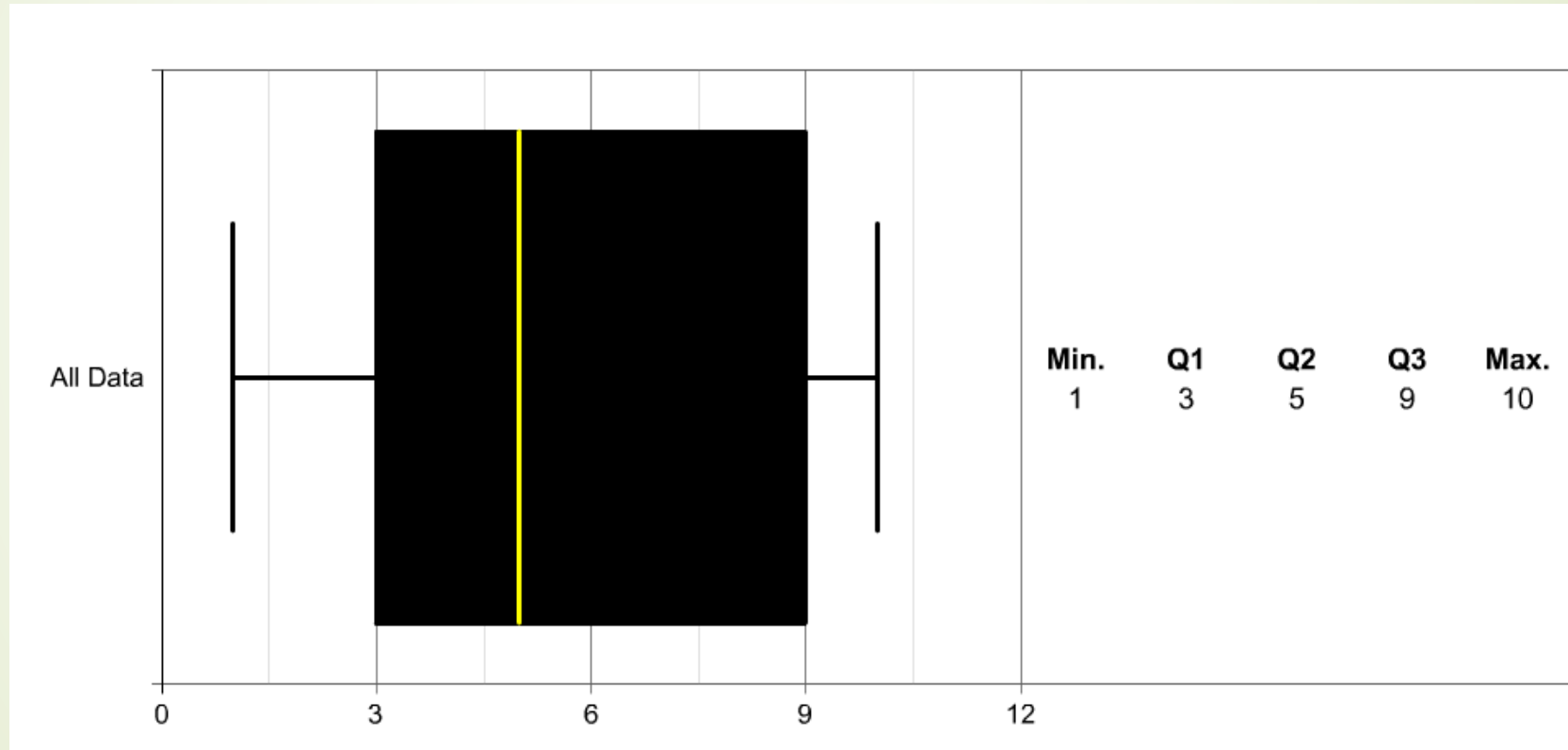
| | Column 1 |
|-------|----------|
| Row 1 | |



Example 4

| | | | | | | |
|---|---|---|---|----|---|---|
| 3 | 4 | 5 | 6 | 10 | 1 | 9 |
|---|---|---|---|----|---|---|

Example 4





➔ Any question?





Thank you!

