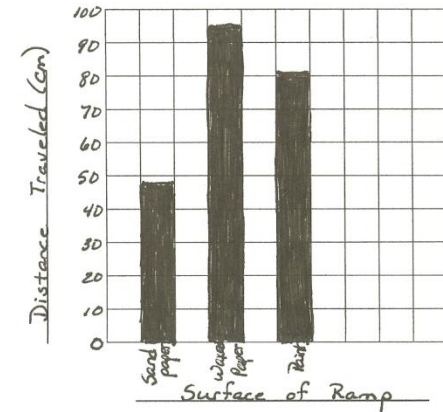


Collecting and Visualizing the Data We Collect

Bar Graph

Effect of Friction on Distance Traveled



Definition:

A graph which answers the question: "What is the measurement for each item?"

Note: a bar graph is appropriate when each item is has a discrete or categorical value .

Use in a Sentence:

Use the data in your data table to construct a bar graph of the experiment's results.

Chart

Definition:

a visual display of information

Use in a Sentence:

Examine the chart below and identify the surface with the least friction.

PVC CLASS 40 IPS PLASTIC PIPE

Sizes 1/2 in through 6 in. Flow 1 through 600 gpm.

| SIZE | 1/2 in | 3/4 in | 1 in | 1 1/4 in | 1 1/2 |
|----------|--------|--------|-------|----------|-------|
| OD | 0.840 | 1.050 | 1.315 | 1.660 | 1.90 |
| ID | 0.622 | 0.824 | 1.049 | 1.380 | 1.61 |
| Wall Thk | 0.109 | 0.113 | 0.133 | 0.140 | 0.14 |

| flow gpm | velocity fps | psi loss | velocity fps | psi loss | velocity fps | psi loss | velocity fps | psi loss | velocity fps |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 1 | 1.05 | 0.43 | 0.60 | 0.11 | 0.37 | 0.03 | 0.21 | 0.01 | 0.15 |
| 2 | 2.11 | 1.55 | 1.20 | 0.39 | 0.74 | 0.12 | 0.42 | 0.03 | 0.31 |
| 3 | 3.16 | 3.28 | 1.80 | 0.84 | 1.11 | 0.26 | 0.64 | 0.07 | 0.47 |
| 4 | 4.22 | 5.60 | 2.40 | 1.42 | 1.48 | 0.44 | 0.85 | 0.12 | 0.62 |
| 5 | 5.27 | 8.46 | 3.00 | 2.15 | 1.85 | 0.66 | 1.07 | 0.18 | 0.78 |
| 6 | 6.33 | 11.86 | 3.60 | 3.02 | 2.22 | 0.93 | 1.28 | 0.25 | 0.94 |
| 7 | 7.38 | 15.77 | 4.20 | 4.01 | 2.59 | 1.24 | 1.49 | 0.33 | 1.10 |
| 8 | 8.44 | 20.20 | 4.80 | 5.14 | 2.96 | 1.59 | 1.71 | 0.42 | 1.25 |
| 9 | 9.49 | 25.12 | 5.40 | 6.39 | 3.33 | 1.97 | 1.92 | 0.52 | 1.41 |
| 10 | 10.55 | 30.54 | 6.00 | 7.77 | 3.70 | 2.40 | 2.14 | 0.63 | 1.57 |
| 11 | 11.60 | 36.43 | 6.60 | 9.27 | 4.07 | 2.86 | 2.35 | 0.75 | 1.73 |
| 12 | 12.65 | 42.80 | 7.21 | 10.89 | 4.44 | 3.36 | 2.57 | 0.89 | 1.88 |
| 14 | 14.76 | 56.94 | 8.41 | 14.48 | 5.10 | 4.47 | 2.99 | 1.18 | 2.20 |
| 16 | 16.87 | 72.92 | 9.61 | 18.55 | 5.93 | 5.73 | 3.42 | 1.51 | 2.51 |
| 18 | 18.98 | 90.69 | 10.81 | 23.07 | 6.67 | 7.13 | 3.85 | 1.88 | 2.83 |
| 20 | 21.09 | 110.23 | 12.01 | 28.04 | 7.41 | 8.66 | 4.28 | 2.28 | 3.14 |
| 22 | | | 13.21 | 33.45 | 8.15 | 10.33 | 4.71 | 2.72 | 3.46 |
| 24 | | | 14.42 | 39.30 | 8.89 | 12.14 | 5.14 | 3.20 | 3.77 |
| 26 | | | 15.62 | 45.58 | 9.64 | 14.08 | 5.57 | 3.17 | 4.09 |

Data Table

Definition:

A chart made of columns
and rows for recording information

Use in a Sentence:

Construct a data table that could be used to record the data from your experiment.

Table 1

| Surface of the Ramp | Distance Car Traveled (cm) | | | | | Average Distance (cm) |
|---------------------|----------------------------|----|----|----|----|-----------------------|
| | Trials | | | | | |
| | 1 | 2 | 3 | 4 | 5 | |
| Sand paper | 45 | 50 | 47 | 51 | 47 | |
| Waxed paper | 92 | 98 | 94 | 95 | 96 | 95 |
| Paint | 80 | 82 | 80 | 84 | 79 | 81 |

Independent Variable

Dependent Variable

What you graph

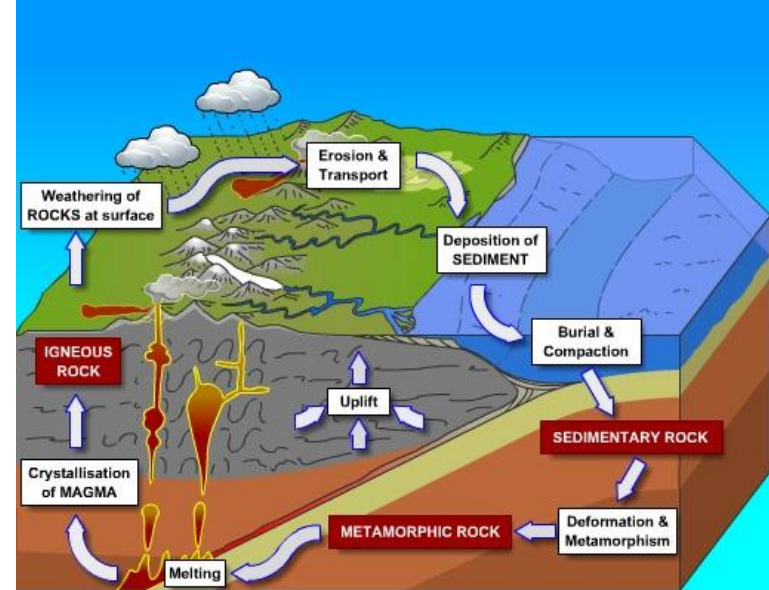
Diagram

Definition:

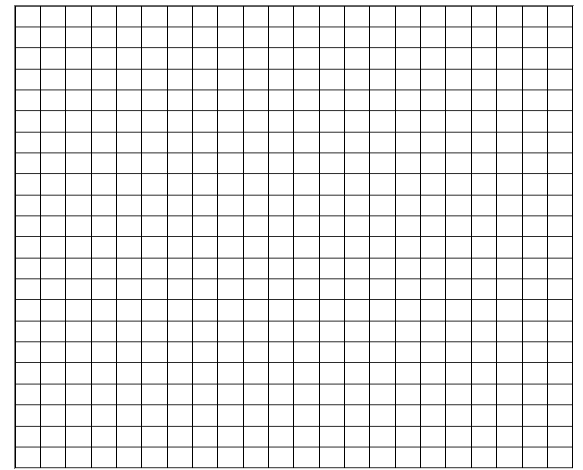
a drawing, plan, or chart that helps explain a thing by showing all its parts, how it is put together, or how it works

Use in a Sentence:

Make a diagram to show how a sedimentary rock might form.



Grid



Definition:

a pattern of regularly spaced horizontal and vertical lines

Use in a Sentence:

Use the grid below to construct a line graph with the data from the experiment.

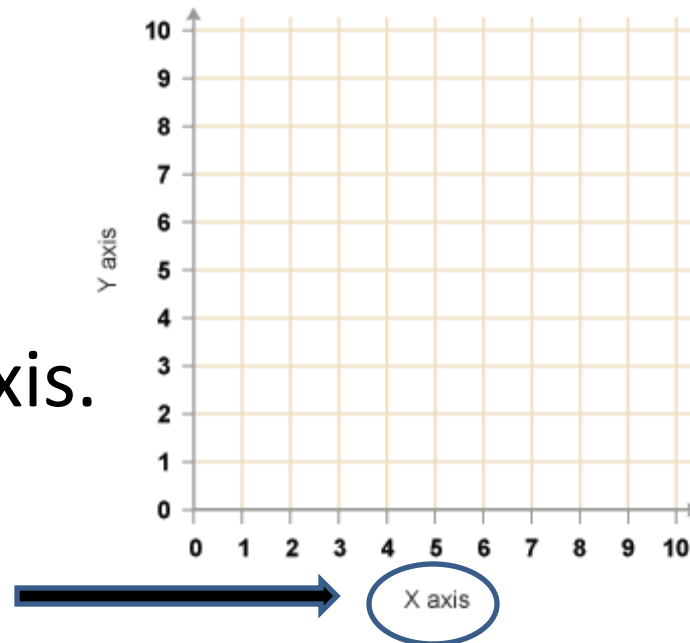
Horizontal X Axis

Definition:

the line along the bottom of a graph on which the scale for the **independent variable** is placed

Use in a Sentence:

Label the horizontal axis.



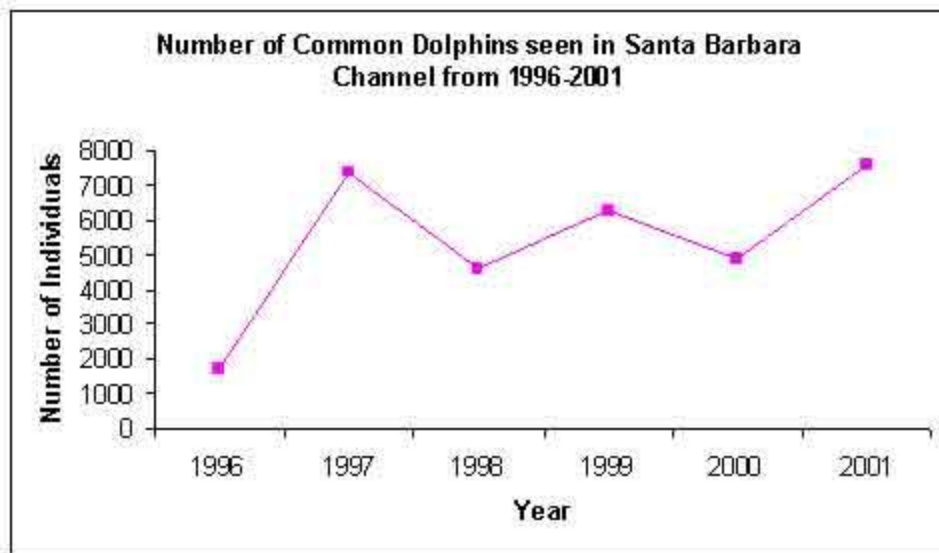
Line Graph

Definition:

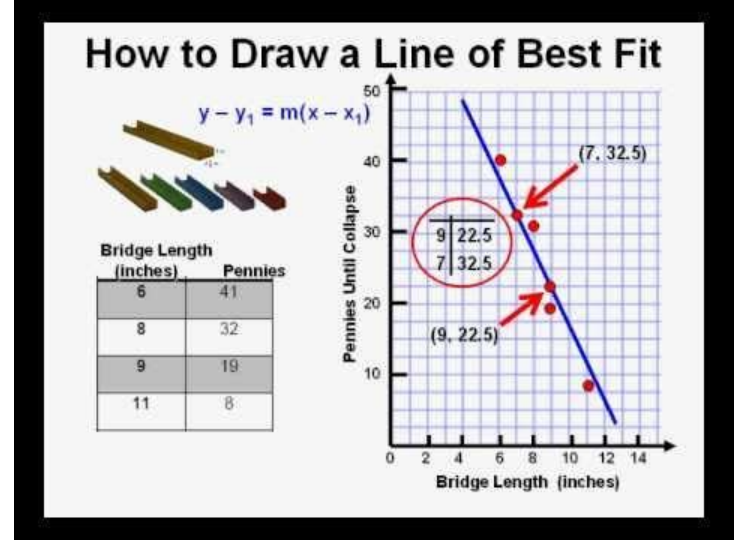
a graph used to show **change over time** with points **connected** by line segments

Use in a Sentence:

Use the data in the data table to construct a line graph for the experiment Grace conducted.



Line of Best Fit



Definition:

a smooth line drawn [on a graph] so that the totals of the distances between the line and the points above and below it are equal

Use in a Sentence:

Students are allowed to use an appropriate line of best fit on the high school assessment.

Pictograph



Each  stands for 2 votes.

Definition:

a graph that uses pictures or symbols to show data

Use in a Sentence:

Make a pictograph to show the kinds of pets we have in our classroom.

Scale

Definition:

a series of equal interval
on each axis of a graph

Same data, just
different scale.

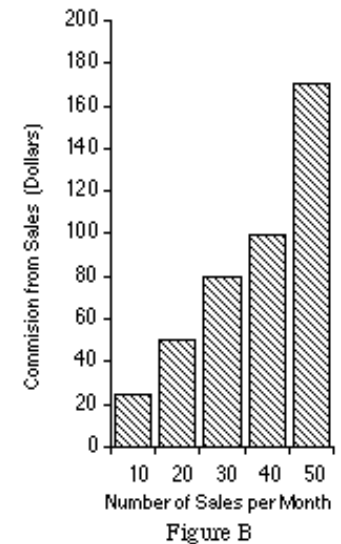
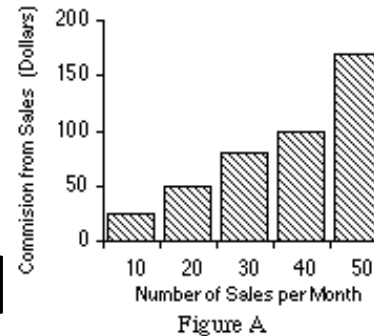


Figure B is more
effective at showing
the data.

Use in a Sentence:

Your graph should have an appropriate
number scale written along the axis.

Vertical Y Axis

Definition:

the line drawn on the left side of a graph on which the scale for the dependent variable is placed

Use in a Sentence:

Label the vertical axis with an appropriate number scale.

