AFTERSCHOOL TRAINING TOOLKIT

Tutoring to Enhance Science Skills

Tutoring Three: Learning to Make Bar Graphs

Guidelines for Making a Bar Graph

Bar graphs are ideal for showing information that reflect quantities or the frequency of things, such as kinds of pets, number of children, or people's favorite brands. Bar graphs are frequently used to display data in science and are the first graphs that students learn to create. Follow the steps below to create bar graphs based on data in a data table.

Which detergent makes the best bubbles?

Detergent Brand	Size of Bubbles (cm)				Average Size of Bubbles (cm)
	Trial 1	Trial 2	Trial 3	Trial 4	
A	44.0	38.9	30.8	29.4	35.8
B	25.6	30.2	23.3	20.1	24.8
C	10.0	15.4	21.6	12.9	15.0

Step 1: Identify the variables

Independent variable (purposefully changed by the experimenter): *Detergent brand*
Dependent variable (changes with the independent variable and is measured):
Size of bubbles

Step 2: Determine the variable range

Subtract the lowest data value from the highest data value for the dependant variable.
Range of average bubbles: *35.8 cm - 15.0 cm = 25.8 cm*

Step 3: Determine the scale of the graph

Determine the numerical value for each grid unit that best fits the range of each variable.

Number of lines on graph: 36 (y axis)

$$\frac{\text{Range}}{\text{\# of lines}} \qquad \frac{25.8 \text{ cm}}{36 \text{ lines}} = .72 \text{ cm/line} — \textit{round to 1 cm/line}$$

Number of bars on graph: (x axis)
3 brands: evenly spaced

Step 5: Number and label the y axis, label the x axis, and title the graph

Step 4: Determine the data points and create the bar graph

(A, 35.8 cm) (B, 24.8 cm) (C, 15.0 cm)

Which Detergent Makes the Biggest Bubbles?