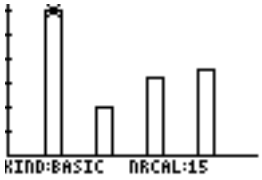
Conventions for Bar Graphs

Frequency Bar Graph:

- each bar represents a category (categories are words, not numbers);
- the length of each bar represents the frequency of each category (how many);
- the bars are equal width (automatically by the TI-73 Explorer);
- the bars are equally spaced (automatically by the TI-73 Explorer);
- the order of the categories (bars) does not matter (appear in order of the list);
- the bars may be vertically oriented (as below) or horizontally oriented.

What kind of calculator do you own (choose from basic, fraction, scientific, graphing)?



KIND c	NRCAL
BASIC	15
FRAC	5
SCI	8
GRAPH	9
------	------

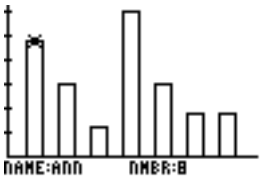
Name=

Plot2 On Off
Type:
CategList:KIND
DataList1:NRCAL
DataList2:L3
DataList3:L4
Hor 1 2 3

Case Value Plot:

- each bar represents a case (name of a person);
- the length of each bar represents the value for each case (how many);
- the bars are equal width (automatically by the TI-73 Explorer);
- the bars are equally spaced (automatically by the TI-73 Explorer);
- the order of the cases (bars) does not matter (appear in order of the list);
- the bars may be vertically oriented (as below) or horizontally oriented.

How many calculators (of any kind) do you own?

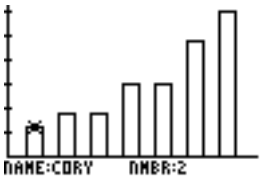


NAME c	NMBR
ANN	8
BOB	5
CORY	2
DAN	10
ELLEN	5
FRAN	3
GAIL	3

Name=

Plot2 On Off
Type:
CategList:NAME
DataList1:NMBR
DataList2:L3
DataList3:L4
Hor 1 2 3

Even though the order of bars does not matter, choosing a certain order provides a particular visual image of the data. Note that the order of the bars on the TI-73 Explorer graph screen appear in the same order as the categorical list.



NAME c	NMBR
CORY	2
FRAN	3
GAIL	3
BOB	5
ELLEN	5
ANN	8
DAN	10

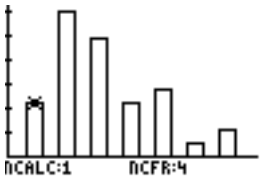
Name=

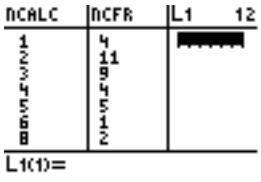
Plot2 On Off
Type:
CategList:NAME
DataList1:NMBR
DataList2:L3
DataList3:L4
Hor 1 2 3

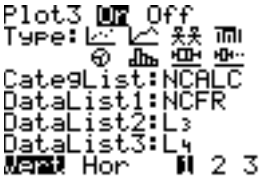
Frequency Bar Graph:

- each bar represents a category (categories are numbers);
- the length of each bar represents the frequency of each category (how many);
- the bars are equal width (automatically by the TI-73 Explorer);
- the bars are equally spaced (automatically by the TI-73 Explorer);
- the order of the categories (bars) does not matter (appear in order of the list)
- the bars may be vertically oriented (as below) or horizontally oriented.

How many calculators (of any kind) do you own?

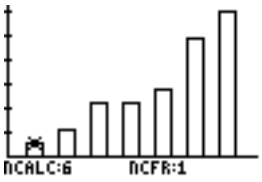


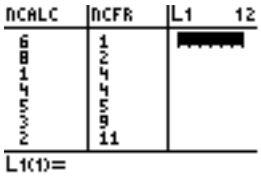


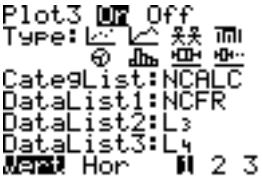


* The first bar represents one calculator owned by 4 people surveyed. The second bar represents 11 people surveyed each own two calculators, etc.

Even though the order of bars does not matter, choosing a certain order provides a particular visual image of the data. Note that the order of the bars on the TI-73 Explorer graph screen appear in the same order as the categorical list.





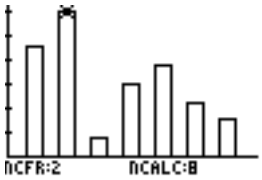


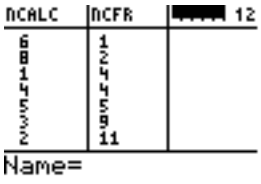
* The first bar represents 6 calculators owned by one person surveyed. The second bar represents 8 calculators owned by two people surveyed, etc.

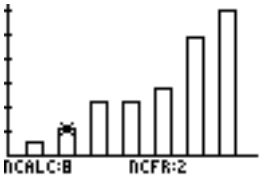
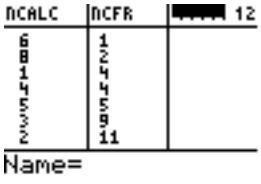
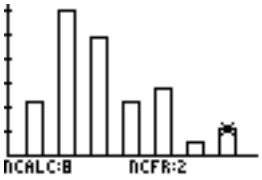
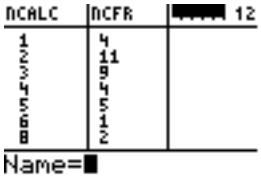
Unconventional graph (common error when representing numerical data):

- each bar represents a frequency (how many);
- the length of each bar represents a category;
- the bars are equal width (automatically by the TI-73 Explorer);
- the bars are equally spaced (automatically by the TI-73 Explorer);
- the order of the categories (bars) does not matter (appear in order of the list);
- the bars may be vertically oriented (as below) or horizontally oriented.

How many calculators (of any kind) do you own?





* The second bar represents two people who each own 8 calculators. The third bar represents four people who own one calculator. The fourth bar represents four people who own four calculators, etc. This might be one possibility for confusion because there are two different “groups” of four (i.e., frequencies of four treated as categories on the x-axis). The TI-73 Explorer has no problem with creating two groups (i.e., bars) of four; however, when drawing this graph by hand, it becomes more clear that there is a problem since two bars are competing for the same space on the x-axis (i.e., the third and fourth bars might be graphed on top of each other; usually this is a clue to revert to using the conventions for bars and bar lengths). Note that using the technology does not indicate any sort of error.

Using conventions and reading the same data (bars are categories; lengths of bars are frequencies):