LINE GRAPHS. --Line or curve charts are used to show the relationship between two variables such as time, age, or test scores. Several series of data may be compared over a period of time. The positions are indicated with a circle or X, and a rounded line connects them. Not more than four or five lines can be shown clearly in one figure. To differentiate between groups, you may use a variety of lines such as solid, hollow, dash, dotted, and a combination of line and dot. (See Figure 5.)

Color is satisfactory when each copy of a report is to contain an original copy. However, color cannot be reproduced in microfilm, which is used commonly to make doctoral dissertations available for interlibrary use. The expense of color reproduction in printing may make its use prohibitive, especially where more than one color is necessary.

Several types of simple line graphs are useful in presenting home economics data:

1. Frequency chart--to show the distribution of a group
2. Percentile chart--to make comparisons between groups
3. Profile chart--to give the relative rank of an individual on a series of measures
4. Surface shart--to emphasize the movement or the magnitude of a trend.

PICTOGRAPHS. --A pictograph often starts with a bar graph. An appropriate symbol is selected to fill in the bar and add interest to the chart. Whenever possible, a symbol should be small enough so that one whole symbol stands on the shortest bar. Each symbol represents 10, 100, or some other unit of children, food, or whatever is being shown. Increasing numbers are shown by adding more symbols of equal size rather than by increasing the size of the symbol (doubling the size of a figure actually increases its area four times).

According to Modley, a good symbol is one which is *"correct, artistically acceptable, sufficiently stylized to be reduced in size without losing its essential characteristics."*[7] He further defined the characteristics of a pictorial symbol as follows:

1. *It follows the principles of good design.*
2. *It is usable in either large or small size.*
3. *It represents a general concept rather than an individual of the species.*
4. *Each symbol is clearly distinguishable from every other symbol.*
5. *It is interesting.*
6. *It is clear as a counting unit.*
7. *It is usable in outline as well as in silhouette form.*[8]

Walker and Lev pointed out that pictographs probably are more interesting to persons unfamiliar with graphic techniques, but there is a trend now to use color and background pictures to create interest rather than to use pictographs:

> *The pictograph has several disadvantages over other types of graphs: (1) Drawing little symbols takes some inventiveness; they must be very simple and must depend more on outline than on detail; different symbols used in the same chart must be easily distinguished. (2) The construction of a bar graph or a line graph is easier except for large agencies which can have a symbol reproduced by a rubber stamp. (3) The pictograph is inflexible and suitable only for very simple data.*[9]

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[7] Modley and Lowenstein, op. cit., page 22.
[8] Ibid., page 47.
[9] Helen M. Walker and Joseph Lev, Elementary Statistical Methods. Revised edition. New York: Holt, Rinehart and Winston, 1958. Page 48.

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