Transcriber's Tips
Margaret C. Edwards, Ed.D.

Lines and Outlines of Shapes

You can make good straight lines, squares, or rectangles using the braillewriter. This produces a clear, sturdy graphic that is as permanent as the rest of the page. However, the braillewriter is of little use for curved lines, circles, and triangles.

Try drawing shapes with fabric paint in plastic squeeze bottles. Fabric paint is inexpensive, makes a clear raised line, and comes in appealing colors. (Yes, many braille readers appreciate colors.) Glossy fabric paint makes a smooth line, glitter fabric paint makes a slightly textured line for a different feel. With fabric paint, you can make a wide variety of straight and curved lines. Try both solid lines and dotted lines. You can put fabric paint graphics on a braille worksheet if you complete the "brailer" work first and remember to leave room for the graphics. The images are easy to produce but require significant drying time--plan on overnight drying. Warning: A student should not put a page including a fabric paint graphic into his or her braillewriter.

Try lines made with architect's tape, or drafting tape, available in various widths from office supply stores. The line is not as prominent as a fabric paint line. It's easiest to use for straight lines but you can manage curves. The big advantage is that there's no drying time. It's available in black and red. Don't put pages in a braillewriter once the tape is in place, because the tape might peel off inside the braillewriter.

Wikki-Stix (wax-covered string, a toy product available at many stores) are nice for quick graphics. Simply press the string to the paper in any configuration; it sticks. You have great flexibility in the shapes produced and no drying time is needed, but the figures aren't permanent enough for you to use them on worksheets to be given to the student to use when you aren't present.

The Draftsman Line Drawing Kit from makes nice tactual drawings. These are best for on-the-spot demonstrations and you can design any shape you can draw. They are sturdy enough for you to prepare and leave behind, but the plastic paper has a less-than-sturdy feel and
isn't suitable for use in a braillewriter, so your graphics won't be on the same page as the rest of the worksheet. No drying time, no color. (Let your students use it to draw or practice printing.)

A tracing wheel can emboss excellent tactile lines on braille paper. You'll need to purchase a neoprene rubber pad from Howe Press or use a thick layer of craft foam under your braille paper, to protect your table. The biggest problem is that you have to "draw in reverse," since the lines appear on the "backside" of the page you draw on. No drying time, no color, a little difficulty in getting the shapes just right—but a very quick and inexpensive approach.

Use real objects instead. If an adult (preferably you) can work directly with the student, shapes selected from an "Attribute Blocks" kit, a shapes puzzle, or even toy blocks can be employed. In fact, real objects are NECESSARY in the beginning for children to learn geographic shapes. Don't expect students to understand tactile graphics if they have not had ample experience with the real thing.

**Graphs**

Simple graphs can be prepared with the braillewriter. At the end of this document are some "facsimile braille" pictographs and bar graphs you might use as guides when starting to make graphs for your own students.

Locate Figures 1-3, which illustrate a pictograph in print and in braille. For younger children, pictographs are common, and are usually the student's introduction to reading graphs.

To make a pictograph using tangibles, begin by developing an appropriate grid using architect's tape, fabric paint, or other material for creating lines. To fill in the grid, be creative. There is a wide variety of materials available.

Real, or almost-real, objects are fun counters on pictographs, but are not essential. For example, to create a graph of "favorite fruit," miniature fruits are available from the craft store. (Do not expect children to develop concepts of "fruit" from these miniatures.) Cut these in half and glue them in place. For a graph of student's birthdays, each birthday can be represented by a tiny gift bow with an adhesive back, easily attached to the graph. Whatever real object you choose, have the student examine a sample before reading the graph.
An equally appropriate approach to tactile pictographs is to create simple "counters," which serve the same function as an "x" or shaded box on a print graph. These can be simple squares or circles, or you can be more creative. A good material for this purpose is craft foam, which is colorful, inexpensive, easy to cut with scissors, thick enough to create an easily-read tactile graphic, and pleasant to touch. Also, for a really easy approach, look for pre-cut craft foam shapes with adhesive on the back. Don't use construction paper, stickers, or any other material as thin as paper.

Finally, in Figure 3, you see a pictograph produced using the braillewriter only--no tangible materials are added. The "counters" are represented by full cells. Grid lines were eliminated except for horizontal and vertical axes, which were included because they are standard features of graphs. Since both the lines and the counters are made of the same "material," (braille dots), including all horizontal and vertical grid lines would make the pictograph unnecessarily cluttered and difficult to read. Students who practice on pictographs made in this fashion will easily transition to bar graphs.

Figures 4-8 present various bar graphs. Look first at Figures 4-6, which show a bar graph with vertical bars. Letter signs were not used along the x-axis for the letters that indicate the days of the week. This is done to save space. Visually, the braille bar graph as shown in Figure 5 looks very simple, yet it is challenging to read tactually. Noting that "1" occurred on "Monday" isn't too difficult. But for Thursday and Friday, maintaining a completely horizontal movement as you trace from the top of the column to the axis on the left would be very difficult. A student can easily veer up or down a bit. Is the score for Friday 3 or 4 or 5?

Rows of guide dots can be added as shown in Figure 6. Guide dots are helpful, but increase the clutter and complexity of the graph. Keep guide dots simple, so they don't confuse the reader by looking like one of the axes.

Figures 7 and 8 show a bar graph with horizontal bars. Note that number signs were omitted across the horizontal axis, to save space. Again, guide dots are used, but this time the guide dots are in vertical columns. If prepared on 11 x 11 1/2 inch paper, an extra cell could be allowed between numbers, which would allow space to include number signs, if desired.
Labels
Graphs made on braille paper can of course be labeled with the braillewriter at the time they are designed. Those made on poster paper or other backing will need labels added.

Write labels on braille paper, cut out, and stick to the graph with double-sided tape. (Using glue tends to soften and flatten the braille, reducing legibility.)

To extend the life of this type of label, place a strip of transparent tape on the braille paper before embossing it. Emboss directly over the tape. The tape adds a "plastic" layer of protection and sturdiness to the label.

Use a braille "labeler." These devices are similar to the well-known print "LabelMakers," and use DymoTape or another brand of labeling tape. (You may have to search for the 1/2" tape that works best with braille.) A braille version of the LabelMaker can be purchased from various vendors online. The problem with these devices is they do not provide all possible contractions. You will be forced to use uncontracted braille in instances when saving space would be desirable.

Use a "Dymo Tape Holder," a simple metal device available from Howe Press at Perkins. This device holds a strip of the same tape you would use in the LabelMaker, but since it is intended to hold the tape in position for writing on a Perkins Braillewriter, you have complete access to the entire braille code. You can find the Dymo-Tape Holder at the Perkins Products Store:  http://support.perkins.org/

"Braillabels," from the American Thermoform Company, are 8 1/2 x 11 inch sheets of clear plastic material with an adhesive backing. Roll the sheet into your braillewriter, write the label, cut the label from the remains of the sheet, peel the backing off and add it to your graphic. The price is currently $14.50 for 12 sheets. Look for Braillabels at: http://www.americanthermoform.com/

Some stores that carry Contact Paper (usually advertised for purposes such as lining shelves) offer a clear version. This material is less expensive than Braillabels and can be used in a similar way. It's not as sturdy, and it will have to be cut into sheets that fit in your braillewriter, since it comes in long rolls about two feet wide.

Have Fun!
**Figure 1: Print Pictograph**

**How We Get To School**

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Figure 2:
Braille Pictograph with Tangibles

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Figure 3:
Braille Pictograph Using Braillewriter Only

\[ \text{Hi} \quad \text{We} \quad \text{Get} \quad \text{School} \]

\[ \text{Bike} \quad \text{Bus} \quad \text{Skate} \quad \text{Walk} \]
Figure 4: Print Bar Graph with Vertical Bars
Figure 5:
Braille Bar Graph with Vertical Bars
Figure 6:
Braille Bar Graph with Vertical Bars and Guide Lines
Figure 7: Print Bar Graph with Horizontal Bars

Swimmer

Laps Swum in Marathon

Stan
Kim
Earl
Beth

0 5 10 15 20 25
Number of Laps
Figure 8: Braille Bar Graph with Horizontal Bars

Laps: Swimming, Treadmill, Piano

Swimming

Treadmill

Piano

Number of Laps