

Best Practices and Standards for Creating Monarch Tactile Graphics

Reference Document

This document is prepared for the convenient reference of teachers, transcribers, and other vision specialists who create graphics for use with the Monarch.

File types that are compatible with the Monarch:

- PDF, JPG, PNG, BMP
- PDF contains two Zoom levels; JPG, PNG, and BMP contain additional Zoom levels
- Note that JPG, PNG, and BMP are image-only file types and do not support the inclusion of braille

Fonts that are compatible with the Monarch:

- [Braille29 Font, 29- or 24-point](#) (Monarch-preferred)
- Braille36
- Swell Braille
- 80% Dots

Basic Considerations and Principles of Monarch Graphic Design:

- Eliminate unnecessary parts
- Simplify
- Separate a cluttered, complicated image into multiple graphics
- Render 3-D print images in 2-D as necessary
- To allow graphics to fit within the Monarch's window size, and minimize the need to scroll or pan around an image, make graphics as small as possible while still ensuring readability
 - An ideal window for Monarch graphics creation is 8 by 4"
- Avoid clutter and overlapping elements
- As with any tactile production method, use the Monarch to test graphics that you create, and adjust according to their appearance and usability on the tactile display

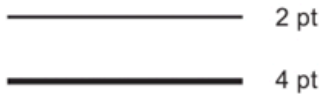
Spacing:

- Keep delineations between elements clean and discriminatory
- Leave at least a one-braille-cell-space between objects or labels
- When objects overlap, use different weights or textures to differentiate, or leave at least 1/8-inch blank space around a line, area, or point
- Retain a margin of at least 1/2-inch around your entire graphic, so that it does not coincide with or overlap the edge of the Monarch's screen

Line weights:

- The following line weights and types have been proven for use with the Monarch:

Standard Line:



Dashed Line:



Bold Line:



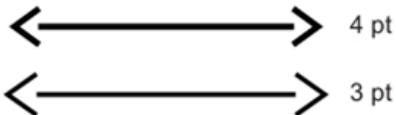
Measurement Line:



Grid Line



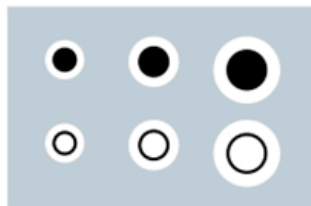
Arrowheads:



Axis Line:



Tactile Dots:



Plotted Line:



A few notes on line weights to assist you:

- Use only black lines
- A 1-point weight creates accurate 1-dot lines, including grid lines
- A 6-point weight often displays 1-dot lines, but may sometimes create 2-dot lines
 - Even the "thinnest" lines can display as 2-dot lines, depending on their position relative to the Monarch's pins
- A 12-point weight consistently creates accurate 2-dot lines
- Horizontal/vertical lines may need different a different weight than diagonal lines for proper tactile display when combined in the same graphic
 - For example, you might need to use a 12-point weight for horizontal and vertical lines but a 10-point weight for diagonal lines
- Dashed and dotted lines can be used for contrast, but it will be necessary to experiment to find the weight(s) that are best for the graphic you are creating
- The "More Detail" filter might need to be used to view lines that are too thin

Colors to Use:

- True Black (C:100 M:100 Y:100 K:100)
- K:100-K:80
- >K:50 – Visible with "More Detail" filter
- 60% gray and darker gray also appear consistently
- 40% gray and lighter may appear with the "show more detail" filter applied
 - This can be helpful when designing graphics both for the Monarch and a multi-height embosser
 - The value at which something appears depends on line thickness

Size:

- Keep graphics between 8 by 3.5" and 11.5 by 11"
- Working within an 8 by 4" drawing space or canvas is ideal

Textures

- The larger the details of a texture, the better it will show up on the Monarch
- Line, checkerboard, and brick patterns with ¼-inch squares tend to be successful
- Horizontal, vertical, and diagonal lines spaced at least 3/16-inch apart show up well
- The following textures have been proven for use with the Monarch:

Lines



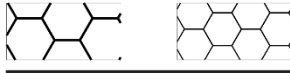
Checkers



Dots



Holes



Textures



*underlined graphics are PixBlaster-compatible

Contact:

- Please contact us with questions, suggestions, and feedback at outreach@aph.org.