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Decoding Digital Graphic Design

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TVI

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Disclaimer

Scope

Prerequisite Knowledge

Webinar Series

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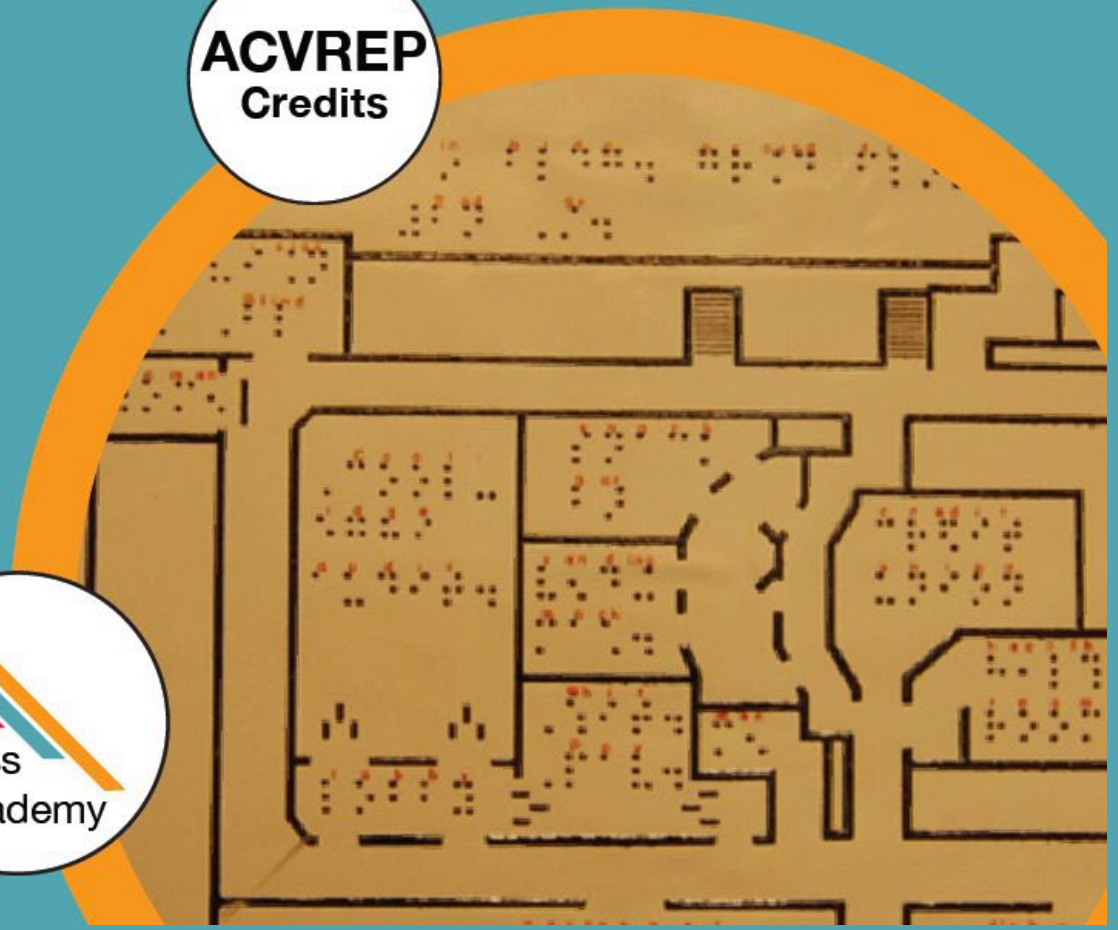
8/15/24

2:00–3:30 PM (ET)

Determining Instructional Purpose of Tactile Graphics

Leanne Grillot
Jenny Wheeler

ACVREP Credits



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8/22/24

2:00–3:30 PM (ET)

Designing Effective Tactile Displays

Using the Tactile Graphics Kit

Leanne Grillot
Jenny Wheeler

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Learning Objectives:

Participants will:

- Explain the functionality and benefits of various digital graphic design tools in creating tactile graphics.
- Identify the process of creating tactile graphics using digital design tools.
- Evaluate the effectiveness of different digital graphic design tools in producing accessible materials for students with visual impairments.
- Develop a plan to integrate digital graphic design software into your instructional practices, ensuring accessibility and inclusivity.
- Assess the quality and accessibility of tactile graphics created using digital tools and identify areas for improvement.

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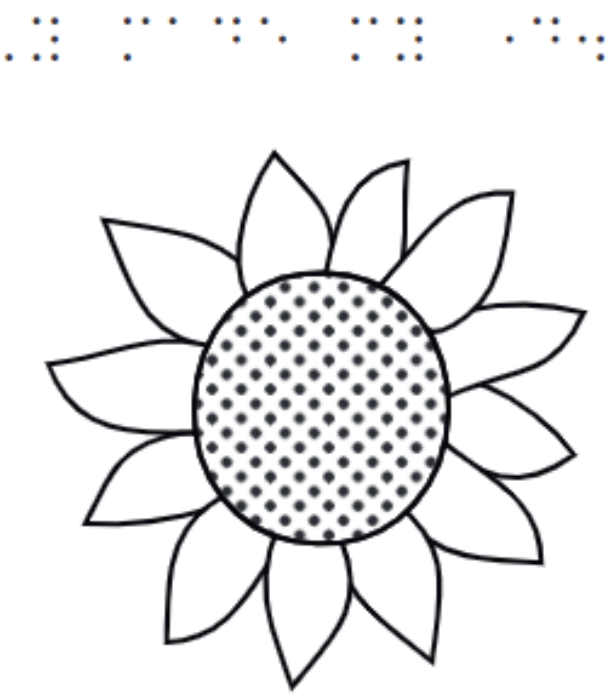
Outline

- Review
  - Production Method
  - Elements in a graphic
- Creating Computer Graphics
- Process to Emboss
- Designing for the Monarch
- Voice from the Field– Jeanne Neu
- Tips and tricks



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Think About

A graphic you want or need to create

Which Production Method Will Be Used?

- Is there a specific production method or graphic “format” being requested?
- What resources or equipment are available to create the graphic for that production method?
- Which production method will provide the best readable graphic?
- Is this graphic for a one-time use or for production of multiple copies?

Review

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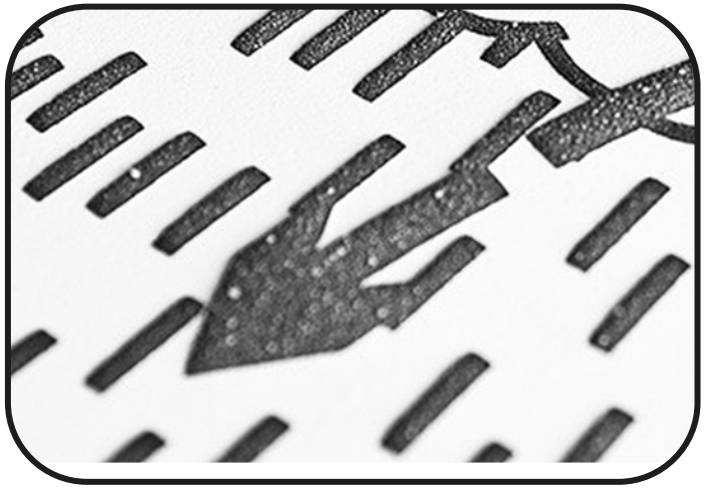
Production Methods:

Collage

Tooled



Machine-Generated

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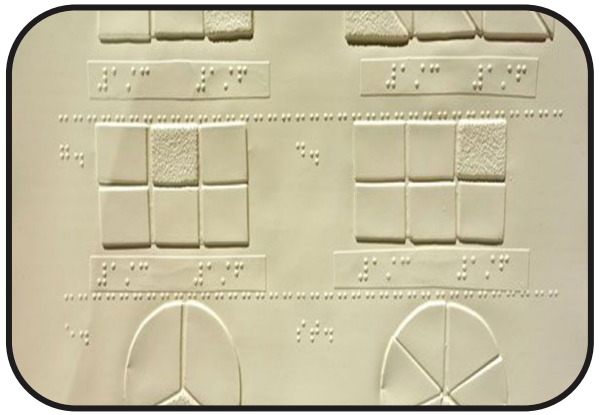
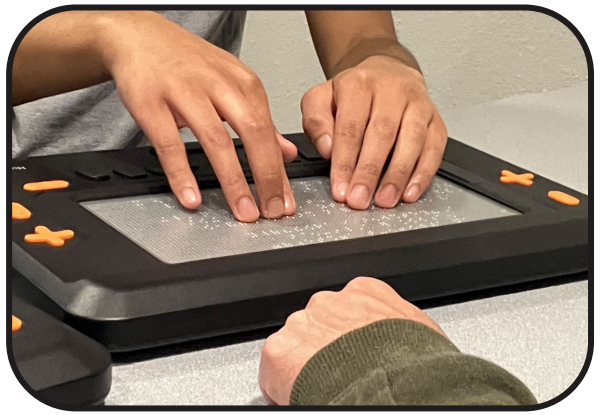
Machine-Generated



Thermoform

Microcapsule/ Swell

Embossed



Digital Tactile Display

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Creating Swell Paper Graphics

- Create the desired graphic in print
- Transfer the image onto the Swell paper or Flexi-paper
- Run Swell/Flexi-paper through the "toaster"/heat machine
- Are the lines "tactual" enough?

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Embossed Graphics

- The APH PageBlaster and PixBlaster can both produce graphics
- There are other embossers that produce graphics at varying levels of detail
- However, not all braille embossers are graphics capable

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Digital Tactile Display Graphics

- Download or upload a graphic on the Monarch and save
- Use TGIL graphics
- 10-line graphic display
- Panning and zoom in/zoom out capabilities
- Graphing calculator for mathematical images in real time
- Important resource for graphics accessibility!

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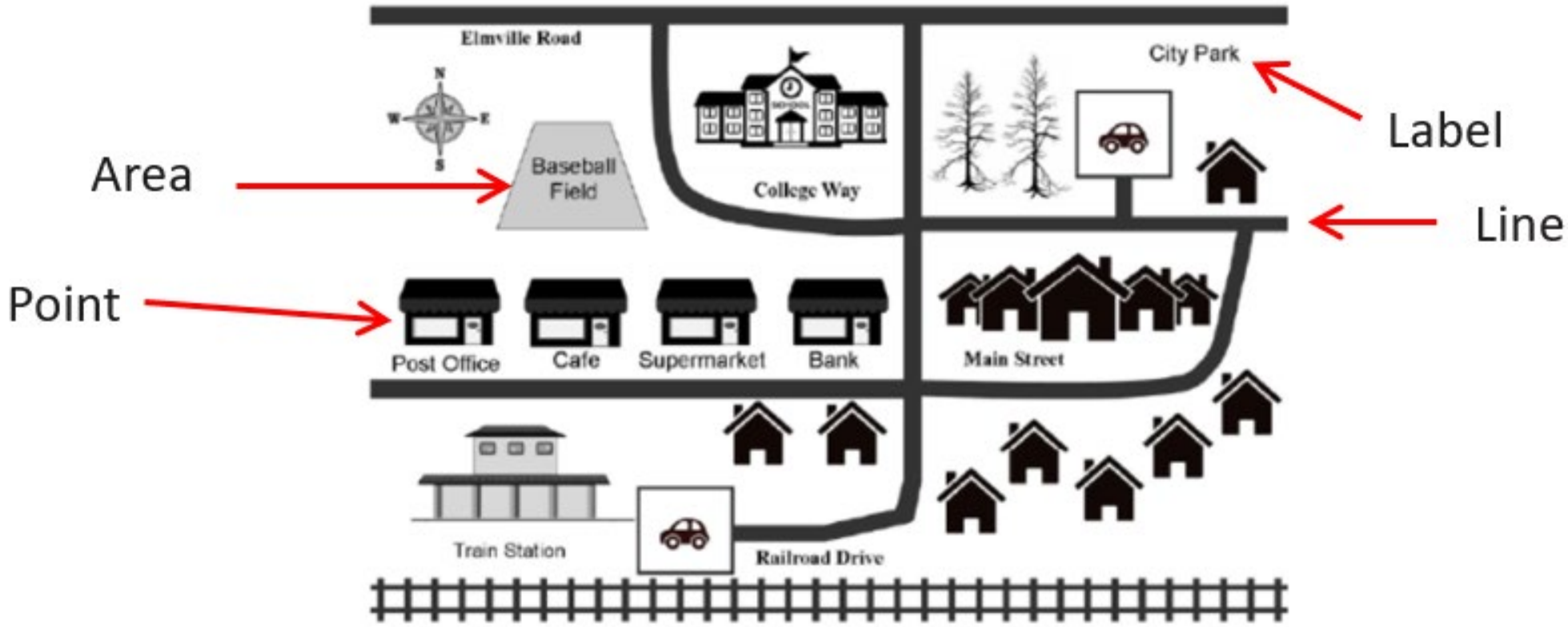
Elements in Graphics

Read the map:



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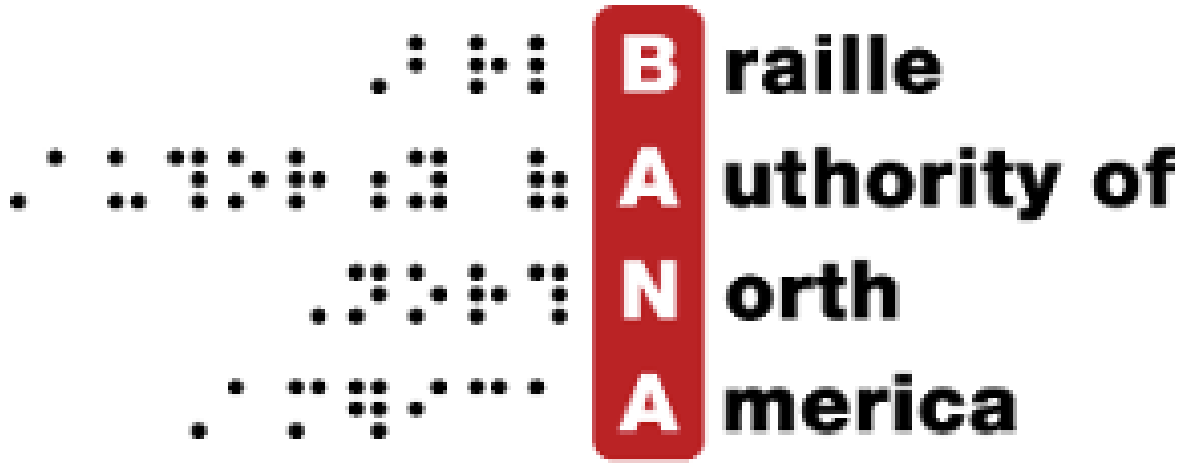
Basic Graphic Measurements

- **Areas**: At least ¼ square inch
- **Primary lines**: At least ½ inch long
- **Lead lines**: ¾ inch to 1-1/2 inches long
- **Graphs**: Axis lines (x- and y-lines) should be more prominent than grid lines
- **Labels**: Place labels 1/8 inch (minimum) to 1/4 inch (maximum) from any graphic element
- **Location**: Place the graphic at the left margin of the page

Guidelines and Standards for Tactile Graphics



Developed Under the Sponsorship of the Braille Authority of North America

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Creating Computer Generated Graphics

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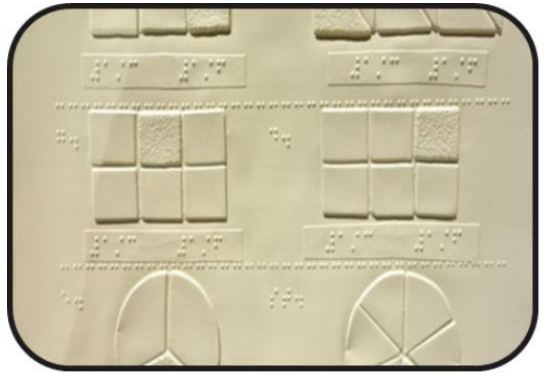
What digital tools do you use for tactile graphics?

a. PIAF/Swell
b. Graphics capable embosser
c. Thermaform
d. Digital Tactile Display
e. Other (describe in chat)



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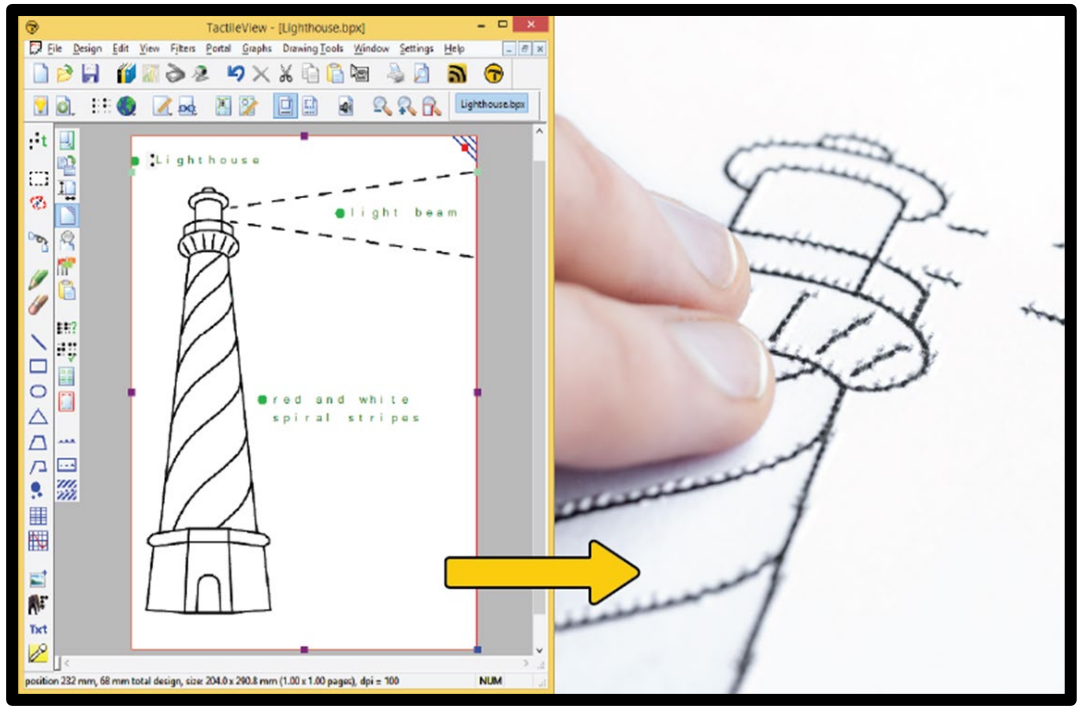
Computer-Generated Graphics

- Specialized software and hardware for PCs or braille notetakers enable users to produce tactile graphics through technology
- Thermoform and Swell/Capsule/Flexi-Paper are technological methods
- Computerized/embossed graphics



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Different File Types

- Bitmap/Whole Image
  - BMP
  - GIF
  - JPEG
  - PNG
  - TIFF
- Computer Aided Design (CAD)
- Scalable Vector Graphic (SVG)
- Note: not all embossers can use all of these file types

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File Types

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What Software Can I Use to Create Tactile Graphics?

- Microsoft Word and PowerPoint
- Canva
- Corel Draw
- Tactile View
- Tiger Software Suite (Tiger Designer for PixBlaster)
- Firebird (free from APH for PageBlaster): https://www.aph.org/product/pageblaster/
  - Open the Manuals link and scroll down to Downloads to find Firebird Installer and Setup

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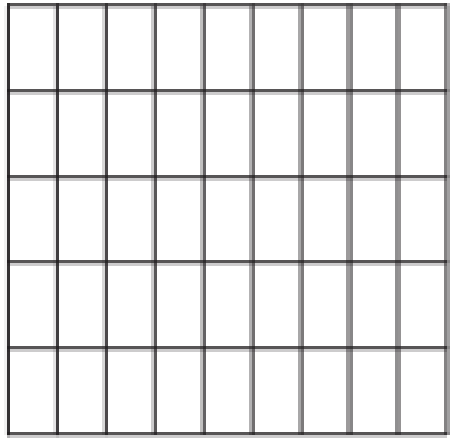
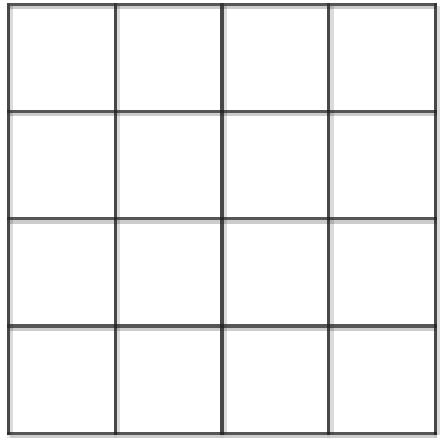
Dots Per Inch (DPI)

- DPI: Measures resolution
- Higher DPI: More dots, greater detail
- Lower DPI: Fewer dots, less detail





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Keep it Simple and Specific

- Begin with the end in mind!
- What is the instructional purpose?
- What is the reader's skill level when reading tactile graphics?

Remember: Complicated graphics may need to be broken up for details to be tactually discernable.

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Configure page size

Word

- Alt + P to open the “Layout” tab
- sz to open the size menu
- m for more paper sizes

PowerPoint

- Alt + G to open the “Design” tab
- ps to open slide size
- c for custom slide size

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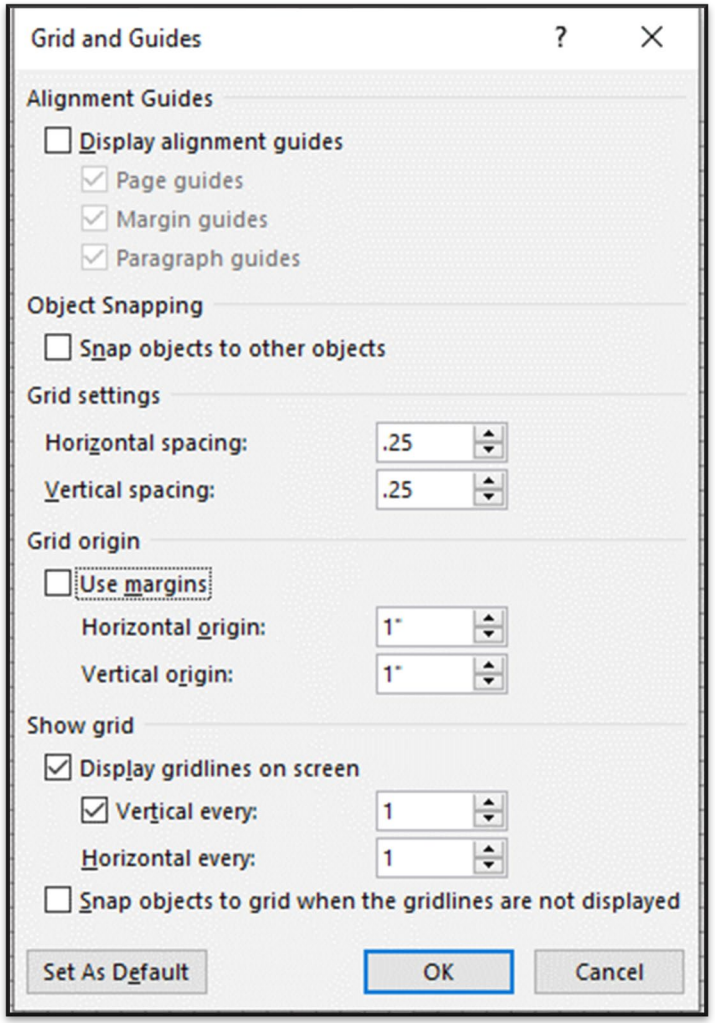
Drawing Grid

- Assist with alignment of objects on page
- Does not print or emboss
- Gridlines can be adjusted
- How to turn on drawing grid:
  - Alt + W to navigate to the "View" tab; G to check or uncheck the "Gridlines" option.
  - Adjust the grid settings in Word: Alt + P to open the "Layout" tab, AG to open the "Align" dropdown menu, followed by S to select "Grid Settings“
  - Adjust grid settings in PowerPoint: Shift + F10 when focus is on slide to open right click menu, arrow to “Grid and Guides” press enter

Configure Drawing Grid

- Uncheck the “Snap object to…”
- Set Grid setting to 0.25”
  - .13” is approx. 1/8”
- Uncheck use margins
- Check “Display gridlines on….”
- Set “Vertical” and “Horizontal” to 1



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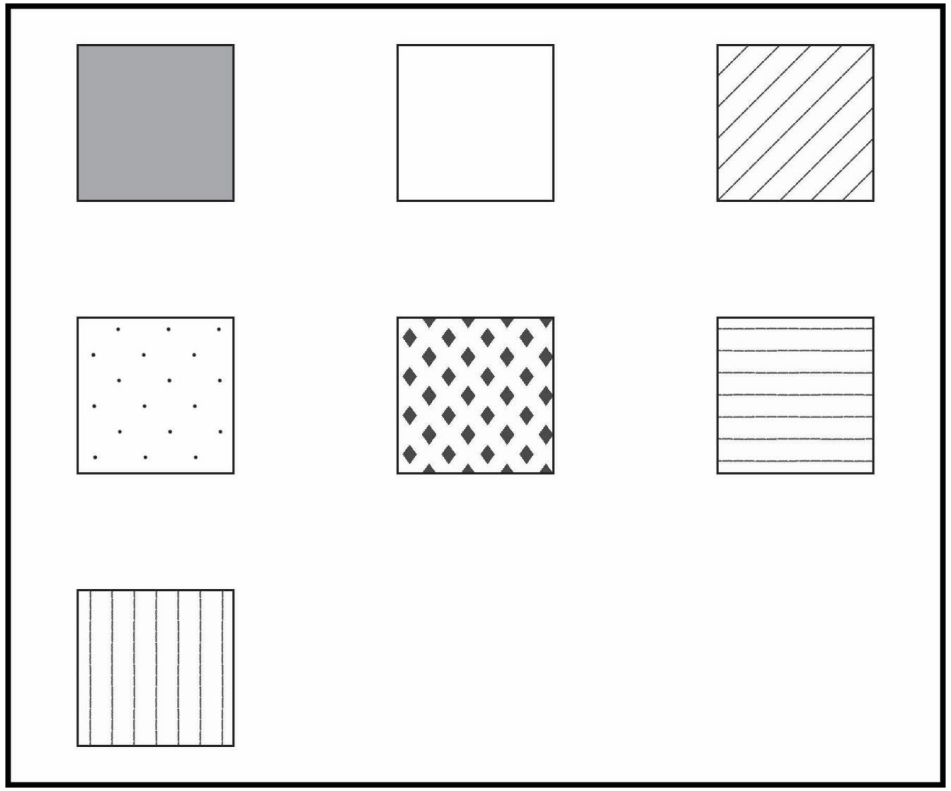
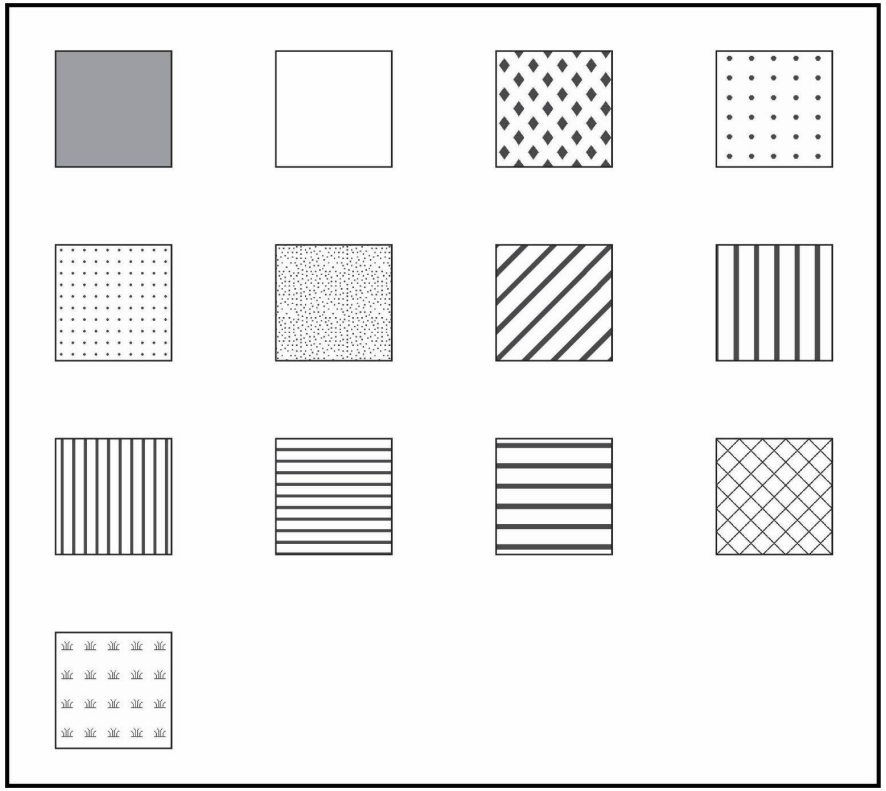
Graphics with Word: Size and Location

- Click and drag on the graphic to change its size
- To maintain the element's proportions, hold the Shift key as you click and drag
  - OR press ALT + JP (Shapes Format tool), then H for height or W for Width and use the up/down arrows to make adjustments
- To change an element's location:
  - Click and drag it to the desired position
  - OR click on it and release, then use arrow keys to move it around
  - OR press ALT+JP, then PO, then L

BANA: Texture Palette

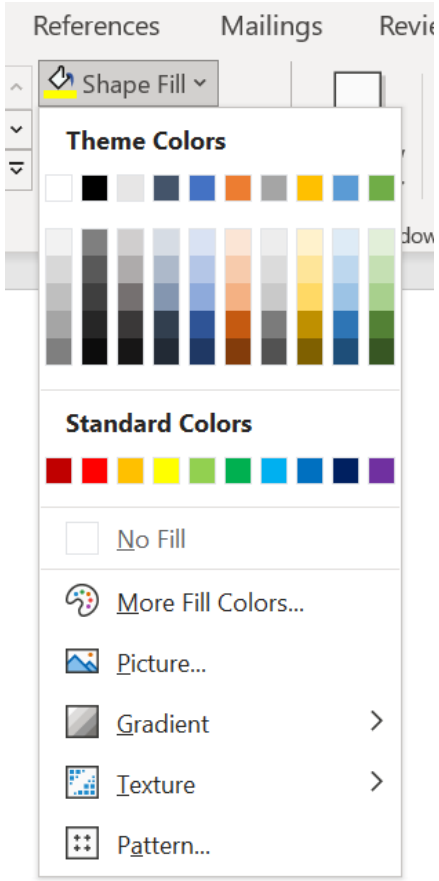


Embossing



Microcapsule

Graphics with Word: Shape Fill



SF ➔ Down Arrow

- Light to dark gray (left-most color column) is fine
- Avoid the darkest gray and black
- No other colors for fill!

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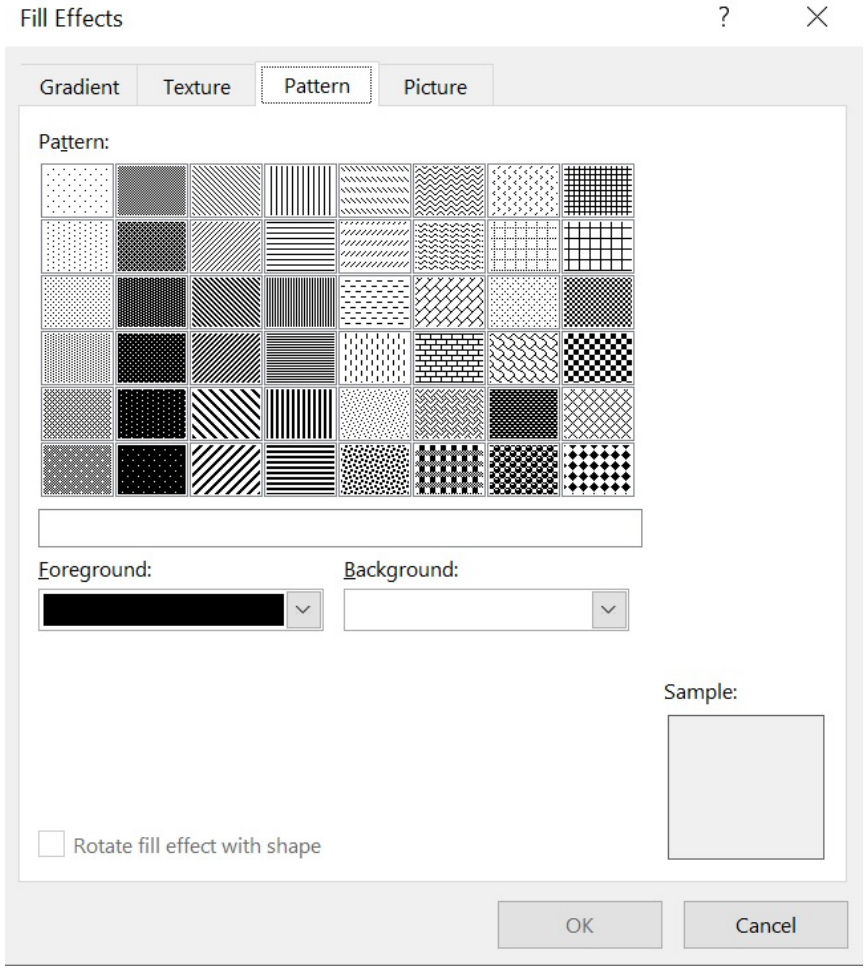
Graphics with Word: Pattern Fill



A ➔ Tab ➔ Arrow keys

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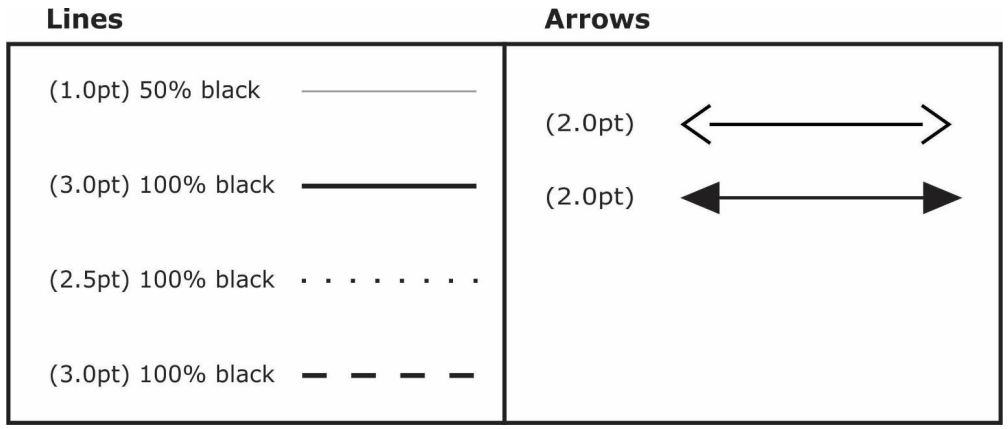
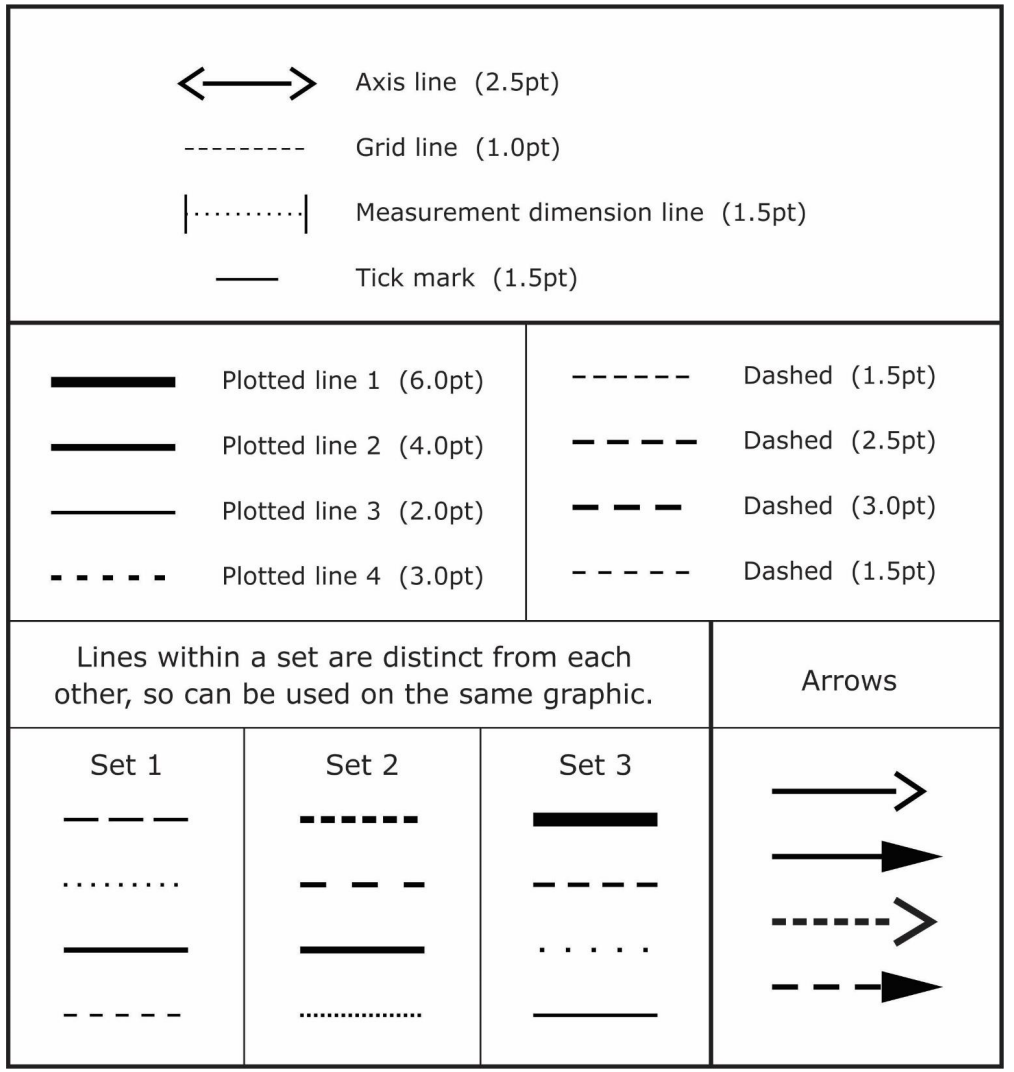
BANA: Line Styles



Embossing



Microcapsule

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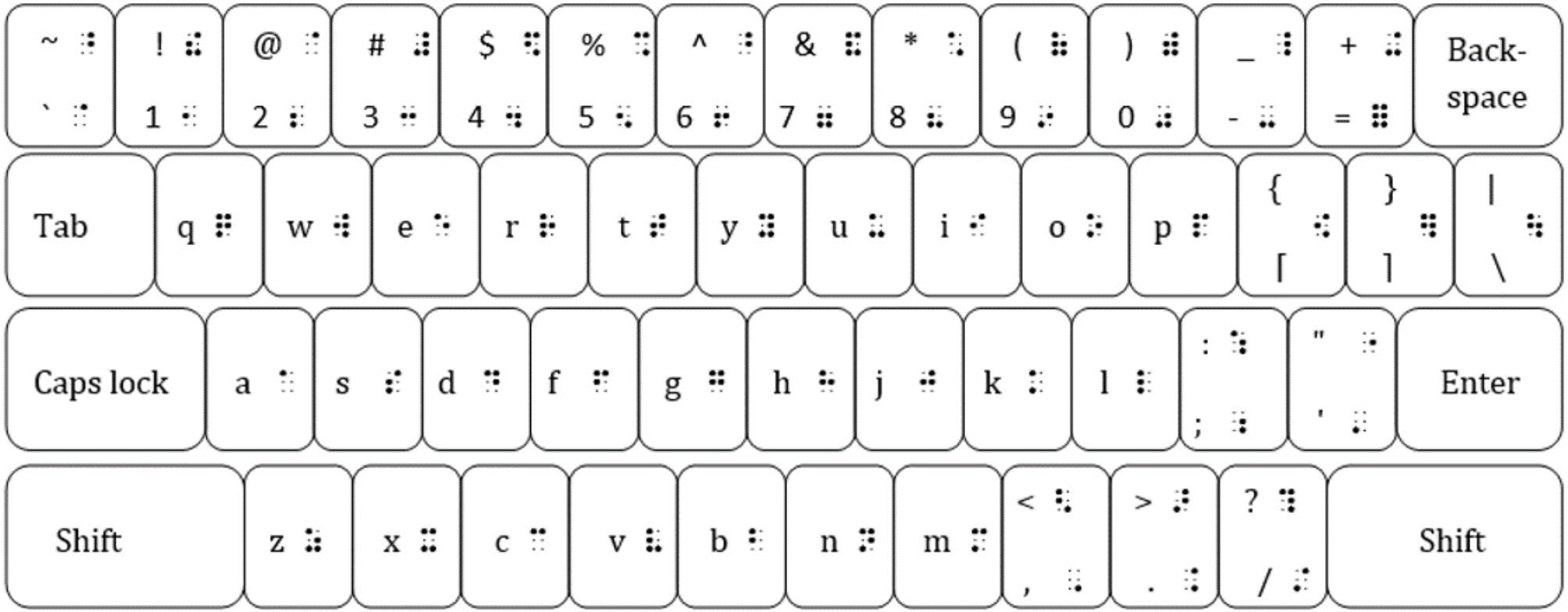
Braille Labels

- Braille Font
- Placed a minimum of 1/8 inch to ¼ inch away from anything around it
- Placed horizontal on the graphic
- Capitalization should follow print
- Grade 1 indicator required for uncapitalized letters not capital letters
- Labels that are split between two braille lines, the runover is left justified

ASCII and QWERTY Keyboard



Demo

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Your Graphic

What application do you plan on using to create your digital tactile graphic file keeping in mind the production method and file type needed?

a. Microsoft Word and PowerPoint
b. Canva
c. Corel Draw
d. Tactile View
e. Tiger Software Suite
f. Firebird
g. Other – put in the chat

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Process to emboss

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APH Embossers

- PixBlaster
  - 7 dot heights
  - Tiger Designer (TSS)
  - Braille: BBZ, BRF, BRL, TXT
  - Graphics: PRN, PDF, JPG, PNG
- PageBlaster
  - Uncomplicated graphics
  - 15 DPI
  - Firebird
  - PRN
    - PDF (take screen shot and open in Firebird)

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Map of Florida

Instructional purpose

- locating big cities

Key features

- shape of state, cardinal directions, large landmarks

Unnecessary features

- Rivers, parks, small cities

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Search the TGIL

- Go to imagelibrary.aph.org
- Login and search
  - Florida map
- View and Download
  - Original = PDF
  - Thumbnail = JPG
  - Preview = JPG
- Open in editing software to add braille labels

Tactile Graphic Image Library

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Customize Graphic

- Add braille labels and markers
  - Font Braille29
  - 80%Dots
  - Braille36
- Don’t forget your BANA Guidelines

Print/Emboss

- Depending on the embosser and software
  - Convert file type with save as if needed
- Emboss or print and swell
- Proofread and adjust

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Self-Evaluation Rubric

- Can the graphic be read and understood with clarity?
- Does it accurately convey the instructional purpose of the original assignment?
- Does it have enough detail to illustrate the meaning it conveys, without extraneous information?
- Does it have enough definition to be legible?
- Is it well-labeled and titled?
- Does it include appropriate textures, without sharp edges?
- Is it age/grade-level appropriate?
- Is it durable for its intended use and user?

Designing for the Monarch

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Monarch Guidelines

- Make the graphic as clean and uncluttered as possible, with clear delineations between elements
- Be cautious about shape fills
- Experiment! Don't be afraid to make mistakes
- Ask students for feedback
  - Improve your graphics production based on their suggestions, preferences, and needs

File Types for the Monarch

- PDF
- JPG
- PNG
- PDF files appear with two Zoom levels,
- JPG and PNG appear with multiple Zoom levels.

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Spacing

- Keep elements (lines, areas, points, etc.) as clean as possible
- Separate objects at least one braille cell apart
  - The center of your fingertip should fit between any two graphic elements
  - Use blank space or different line textures to distinguish between overlapping elements
- Don't put labels too close to or too far away from the elements
  - Labels need to be at least ¼-inch away from any graphic element or additional text
- Retain a margin of at least ½-inch around your entire graphic

Line Weights on the Monarch

- Use only true black lines
- 1-point weight creates 1-dot lines,
- 12-point weight creates 2-dot lines
- Horizontal/vertical lines may need different weight than diagonal lines

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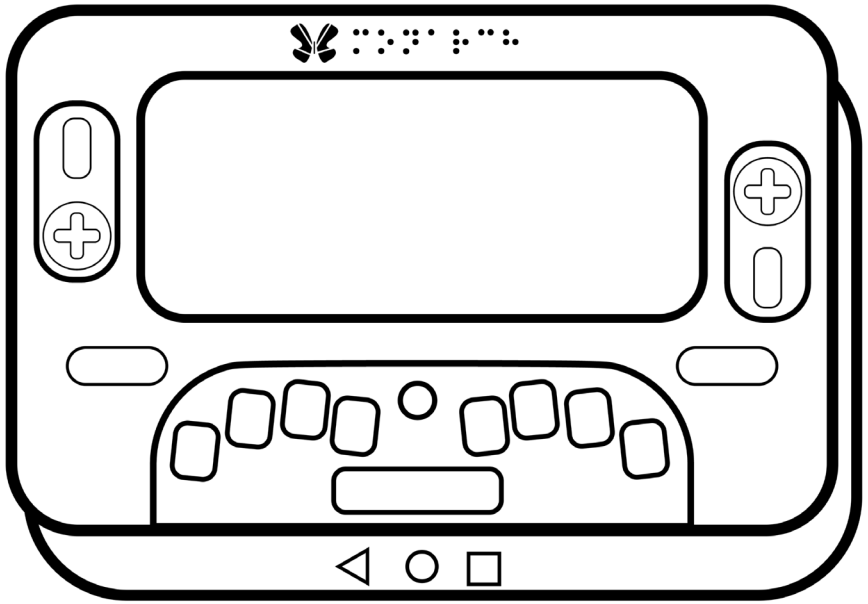
Size on the Monarch



- The Monarch can display images best between 3.5 x 8” and 11 x 11.5”
  - Large enough to be accurately discriminated and read
  - Small enough to fit within the Monarch’s Zoomed-in window,
  - A maximum space of 11 x 11.5” also ensures that a graphic can be embossed easily

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Voice from the Field

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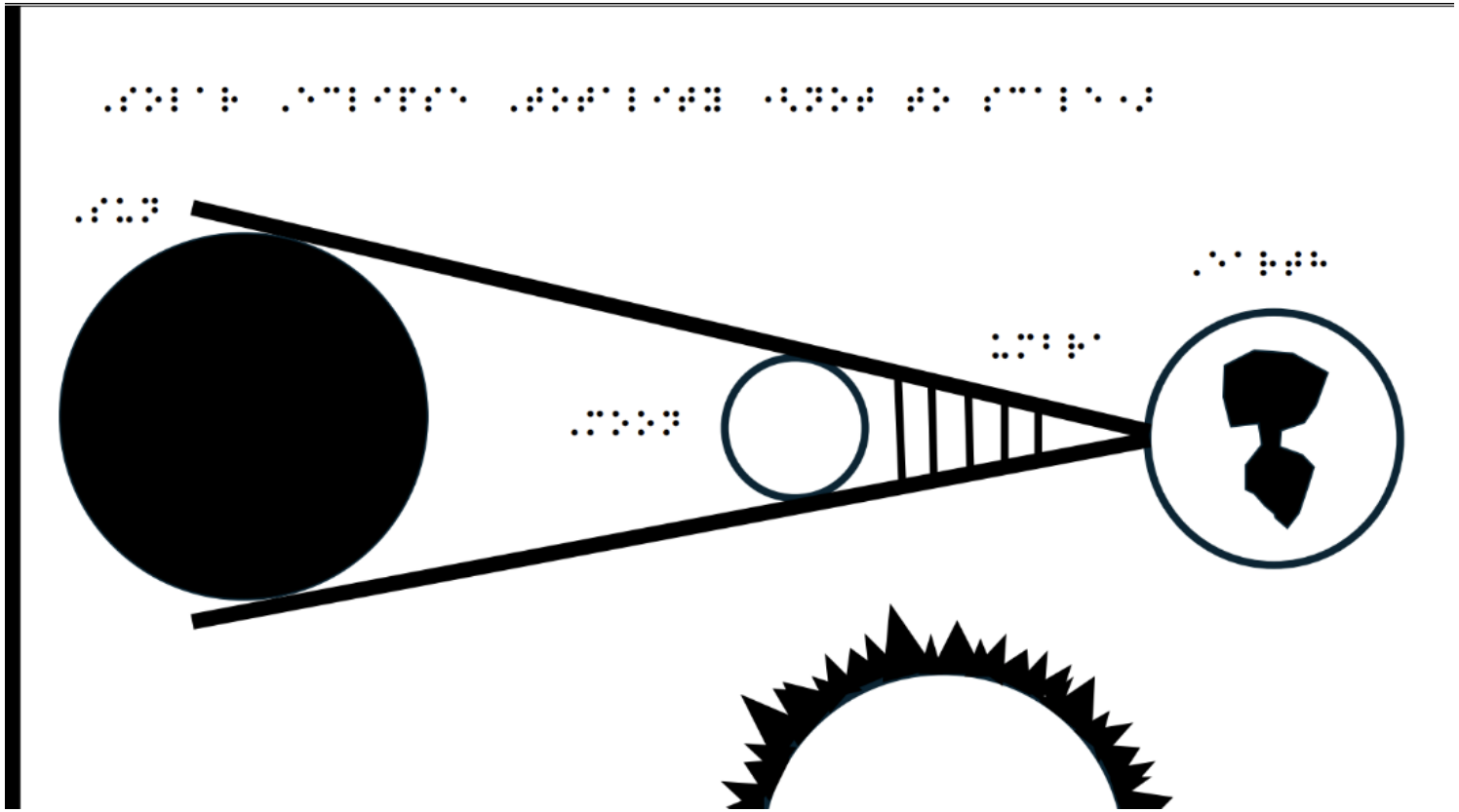
Eclipse Designed for the Monarch



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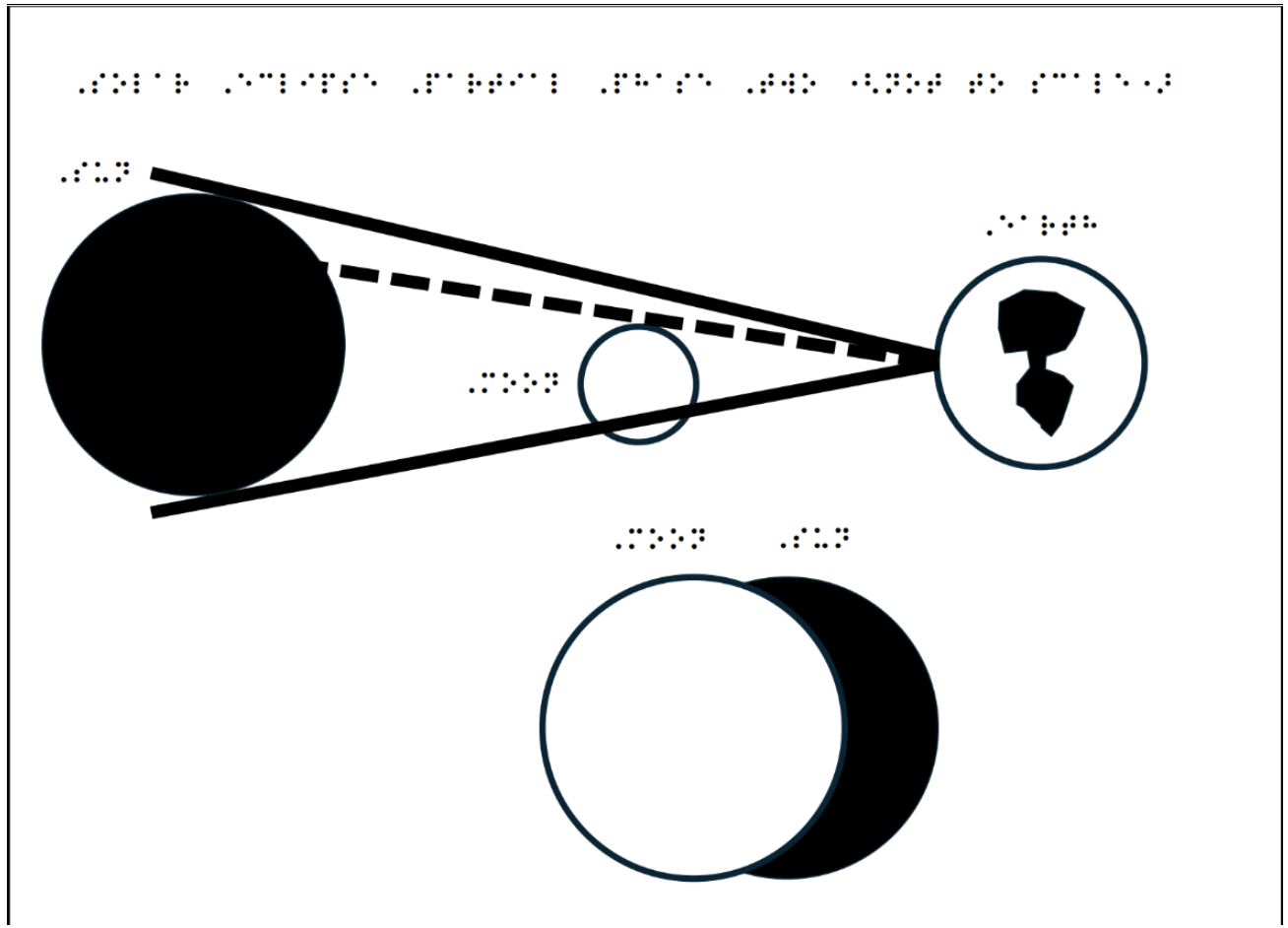
Eclipse 2



Tips and Tricks

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Pro Tip

- In Word or PowerPoint – Make a ribbon with the most used shapes
  - Select File > More Options > Options > Customize Ribbon/Quick Access Toolbar.
  - To add a new tab to the ribbon, select New Tab
  - Add insert symbols and customize keyboard shortcuts

Microsoft Designer

- AI generated images
- IOS app or website
- Sign in with your Microsoft account
- Choose Coloring Book Pages
- Or Create from Scratch
- Write or edit prompt
- Generate image and share
- Saves as PNG

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AI Generated Example

An illustration of a garden gnome as a **simple line drawing** with **no shading**, wearing a polka dot mushroom hat and riding a snail in a **coloring book style**. The **black and white** illustration should be **minimal** with **open space between the lines** and a **white background**.

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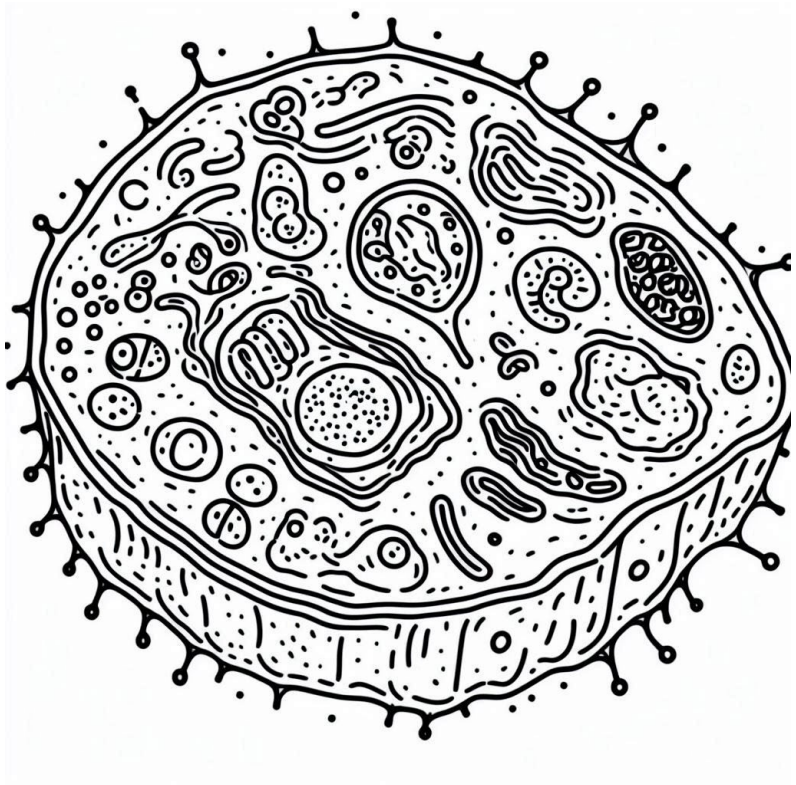
AI Caution – Plant Cell



- AI is not perfect
- Adds a lot of extras
- May be fun for students but not for instruction
- Students can learn how words change the images

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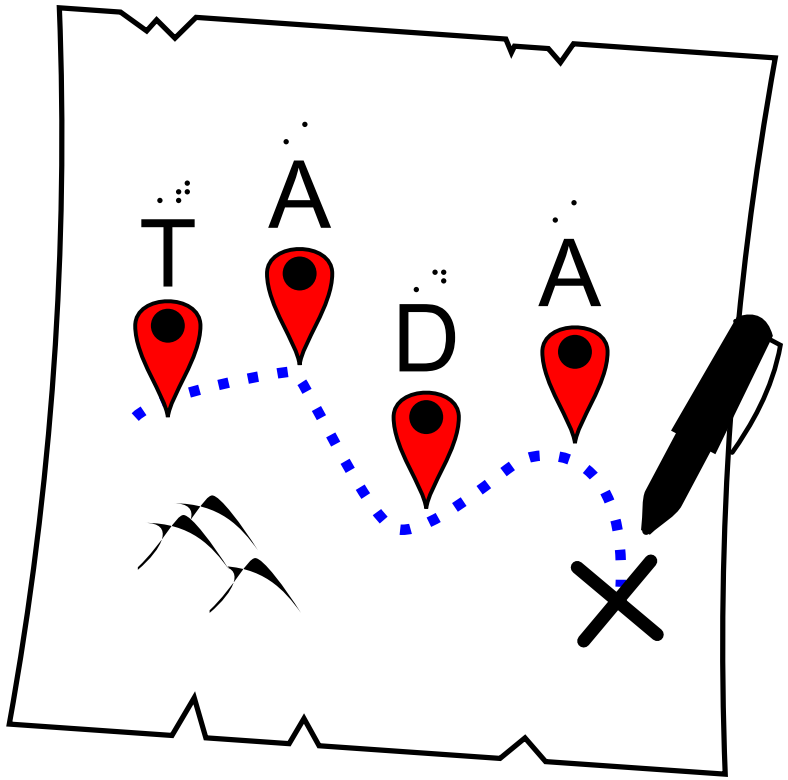
Student Resources

- NYPL Dimensions
- Blind SVG
- TADA
- Microsoft Design (AI images)



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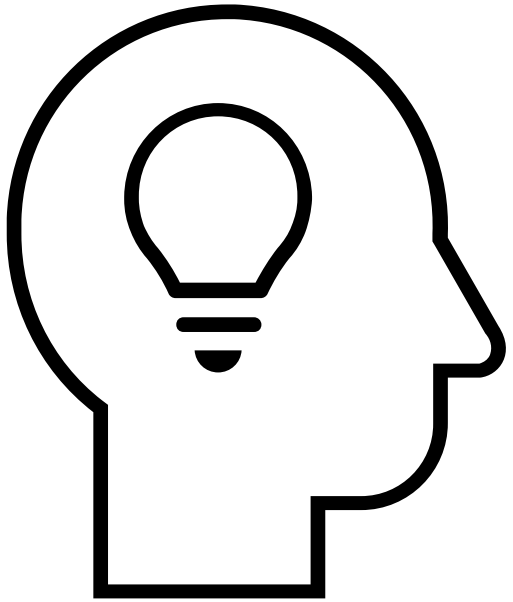
Share Your Plan



In the chat box tell us about the graphic you plan to create and the tools you will use.

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Share Your Graphic with the TGIL

- TGIL graphics generally follow these requirements:
- Clean, well-designed, and embossable.
- Generalizable and useful to any user. have universal classroom applicability.
- The APH logo will be added to all images and the original creator's name will be included in the Production Notes on the download page.

Tactile Graphic Image Library

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Mastering the Monarch Hive Course

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Resources:

- Explore and Use the Tactile Graphic Image Library (youtube.com)
- APH Tactile Graphic Image Library
- Guidelines and Standards for Tactile Graphics | Braille Authority of North America
- Creating Digital Images for Tactile Graphics Machines, Part 1 – Perkins School for the Blind
- Creating Tactile Graphics with Firebird Software – Perkins School for the Blind

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References

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