

PLANNING AND DESIGNING QUALITY TACTILE GRAPHICS



AMERICAN
PRINTING
HOUSE





Planning and Designing Quality Tactile Graphics

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PLANNING AND DESIGNING QUALITY TACTILE GRAPHICS



Learning Objectives

- **Participants will explain what a tactile graphic is and what it is not.**
- **Participants will state the most important part of making a tactile graphic.**
- **Participants will identify resources available to them to aid in the decision and design process.**


What Tactile Graphics Are

- Tactile **representations** of pictorial information in a relief form.
 - It conveys information
 - Is to be examined by touch
- A set of symbols.
- Provide equivalent information.



What Tactile Graphics Are NOT

- Reproductions
- Raised line versions of print
- Automatically easily read and understood



NO

Visual Perception

- “Whole to Part”
- Simultaneous observation
 - all parts of an object in its totality
 - relationship to other objects
- An image can be identified despite different rendering styles.



Tactile Perception

- “Part to Whole”
- Sequential acquisition
- Depth is difficult to interpret



Transcriber's Job

- Preserve the original purpose.
- Represent, not interpret.
- Identify the contents to be included.
- Choose proper symbols to represent them.

Guidelines and Standards for Tactile Graphics, 2010

- **Free download <http://brailleauthority.org/tg/index.html>**
- **Provides detailed information and standards to guide those individuals who produce tactile graphics.**
- **Evolved from an accumulation of information gathered in surveys and research.**
- **Conforms to standard practices set forth in other BANA guidelines.**

Decision Tree

- Would the information be more meaningful in text form?
 - Identify
 - Simplify
- What information will be conveyed?
- What production method will be used?

1.8 **Decision Tree**
Is this appropriate for a tactile graphic?

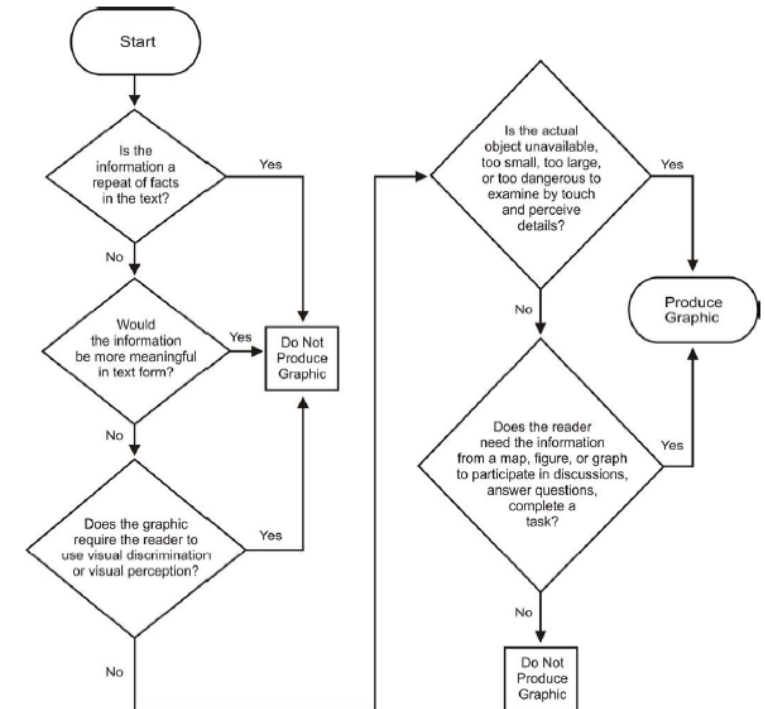


Image Options

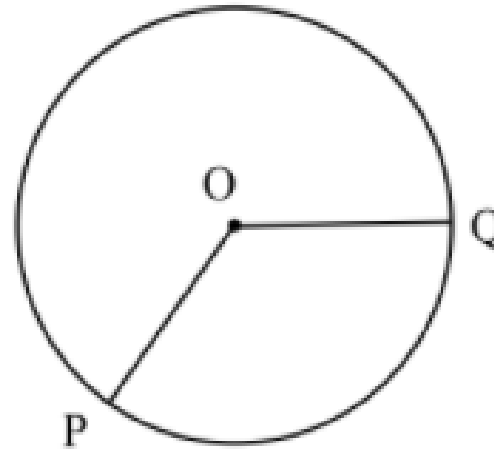
- Transcriber's Note
- Tactile Graphic
- Combination

Know the Difference

The diagram shows a circle with centre O .
 P and Q are points on the circle.

Angle OPQ is 54° .

Work out the size of angle POQ .
You must give a reason for your answer.



Intent

Identify the learning objective.

- What concept will the reader need to learn from the figure?
- What task is the reader supposed to accomplish and what do they need to do it?



Practice Time...

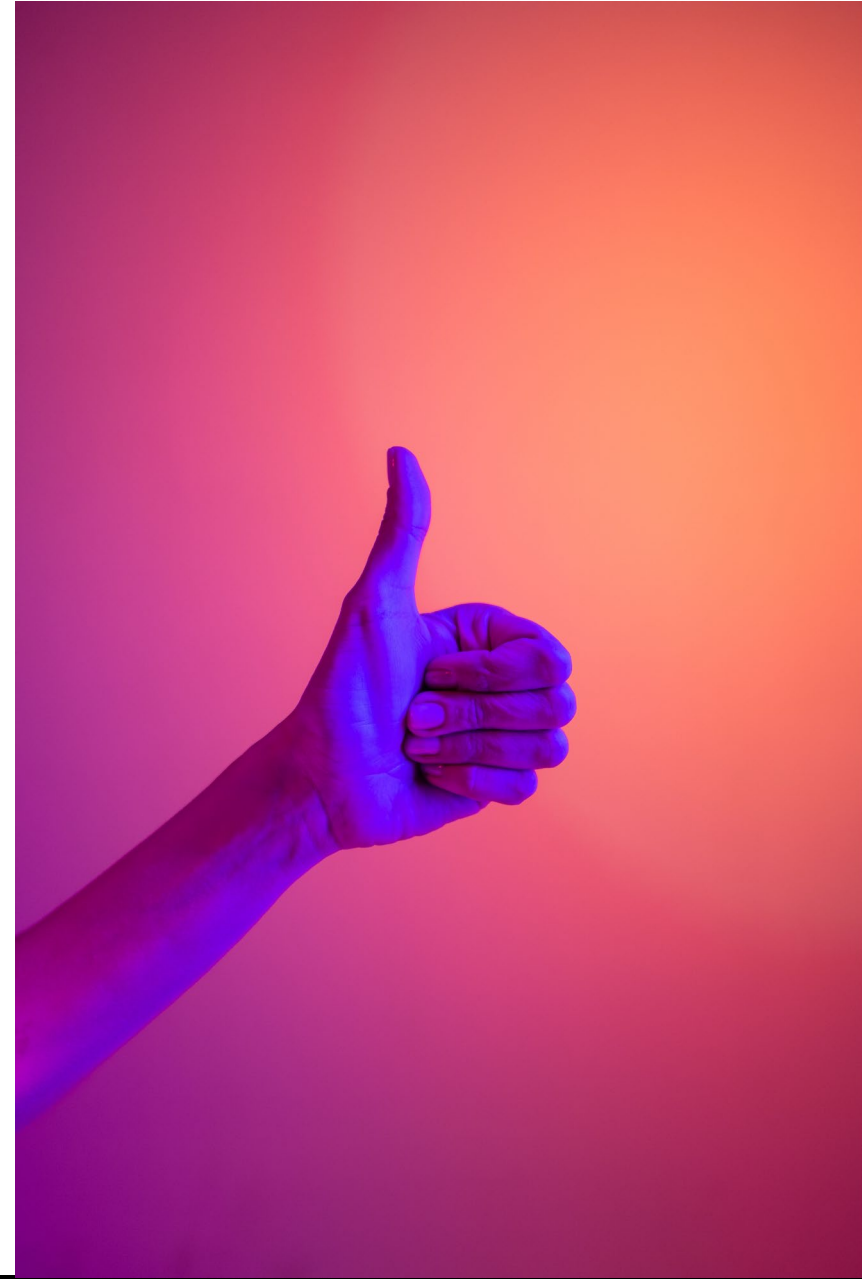


Image #1: Make it into a graphic?

Study the example problem showing a multiplication sentence to represent equal groups. Then solve problems 1–9.

Example

There are 2 leaves. There are 6 ladybugs on each leaf. How many ladybugs are there altogether? Write a multiplication sentence.



There are 2 equal groups of ladybugs. Each group has 6 ladybugs.

Multiplication sentence: $2 \times 6 = 12$

Use the picture below to answer problems 1–4.



1 How many equal groups are there? _____

2 How many ladybugs are in each group? _____

Example

There are 2 leaves. There are 6 ladybugs on each leaf. How many ladybugs are there altogether? Write a multiplication sentence.



There are 2 equal groups of ladybugs. Each group has 6 ladybugs.

Multiplication sentence: $2 \times 6 = 12$

YES!

6.8 Counting Symbols

- Simple tactile shapes
- Follow print for layout
- Include enclosures for grouping purposes

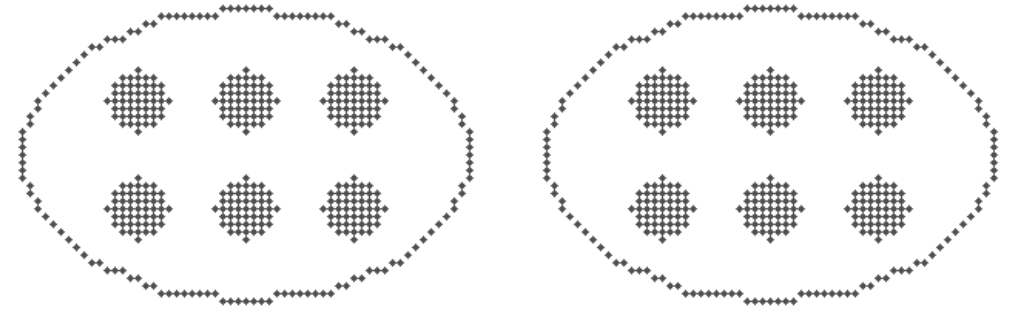


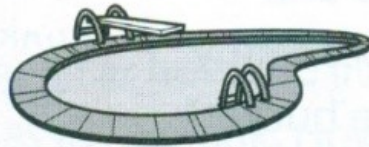
Image #2: Make it into a graphic?

5 Estimate whether each object holds less than, equal to, or more than a liter. Write *less*, *more*, or *equal*.

a.



b.



c.

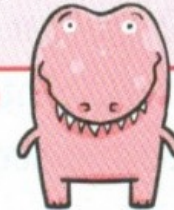


a. _____

b. _____

c. _____

What is something you know that holds about one liter of water?



No!



Image #3: Make it into a graphic?

PREPOSITIONS OF PLACE

I True or False.



1.- The radio is in the table.

TRUE

FALSE

2.- The telephone is behind the plant.

TRUE

FALSE

3.- The book is on the table.

TRUE

FALSE

4.- The lamp is under the sofa.

TRUE

FALSE

5.- The TV is front of the sofa.

TRUE

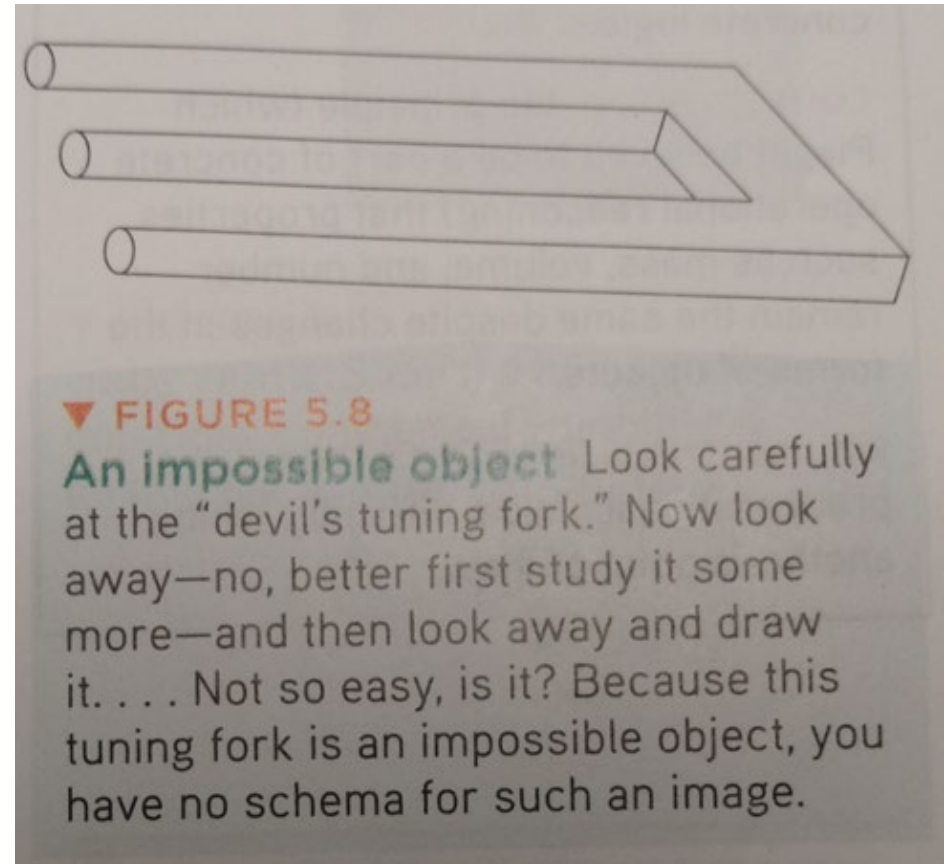
FALSE

No! Tasks requiring visual discrimination or visual identification are not appropriate for a braille reader.

On, above, and below?



Perpendicular?



Time to Design...



Four Components

- Area
- Line
- Point
- Label





Area Texture

- Represent regions of extent
- An area is to explore
- Factors to recognition



Linear Symbols

- Represent linear information
- A line is to follow.
- Bold solid, dashed, or dotted lines are easier to follow.
- Irregular shapes, e.g. zigzag, dash-dot-dot-dash, double track are more difficult to follow.



Point Symbols

- Represent specific locations
- A point is to locate.
- Circle ● Square ■ Triangle ▲
- Minimum size: 1/4 inch

Labels (braille)

- Labels should be placed in the most appropriate location.
- Label may be used to represent an area or point.
- Long labels should be substituted with key.
- Titles can be added for clarity.



Braille with Drawing Programs

- Copy/Paste from translation software.
- Each Production method has a different font.
- Typing in a drawing program will require ASCII.

	⠠	⠡	⠢	⠣	⠤	⠥	⠦	⠧	⠨	⠩	⠪	⠫	⠬	⠭	⠮
	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
⠠	⠡	⠢	⠣	⠤	⠥	⠦	⠧	⠨	⠩	⠪	⠫	⠬	⠭	⠮	⠯
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
⠠	⠡	⠢	⠣	⠤	⠥	⠦	⠧	⠨	⠩	⠪	⠫	⠬	⠭	⠮	⠯
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
⠠	⠡	⠢	⠣	⠤	⠥	⠦	⠧	⠨	⠩	⠪	⠫	⠬	⠭	⠮	⠯
P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_

Characteristics of a Complex Diagram

- Too many specified areas to represent.
- Too many line styles.
- Too many labels required.
- Too much explanation required to be understood.
- Three-dimensional information.

Make it readable

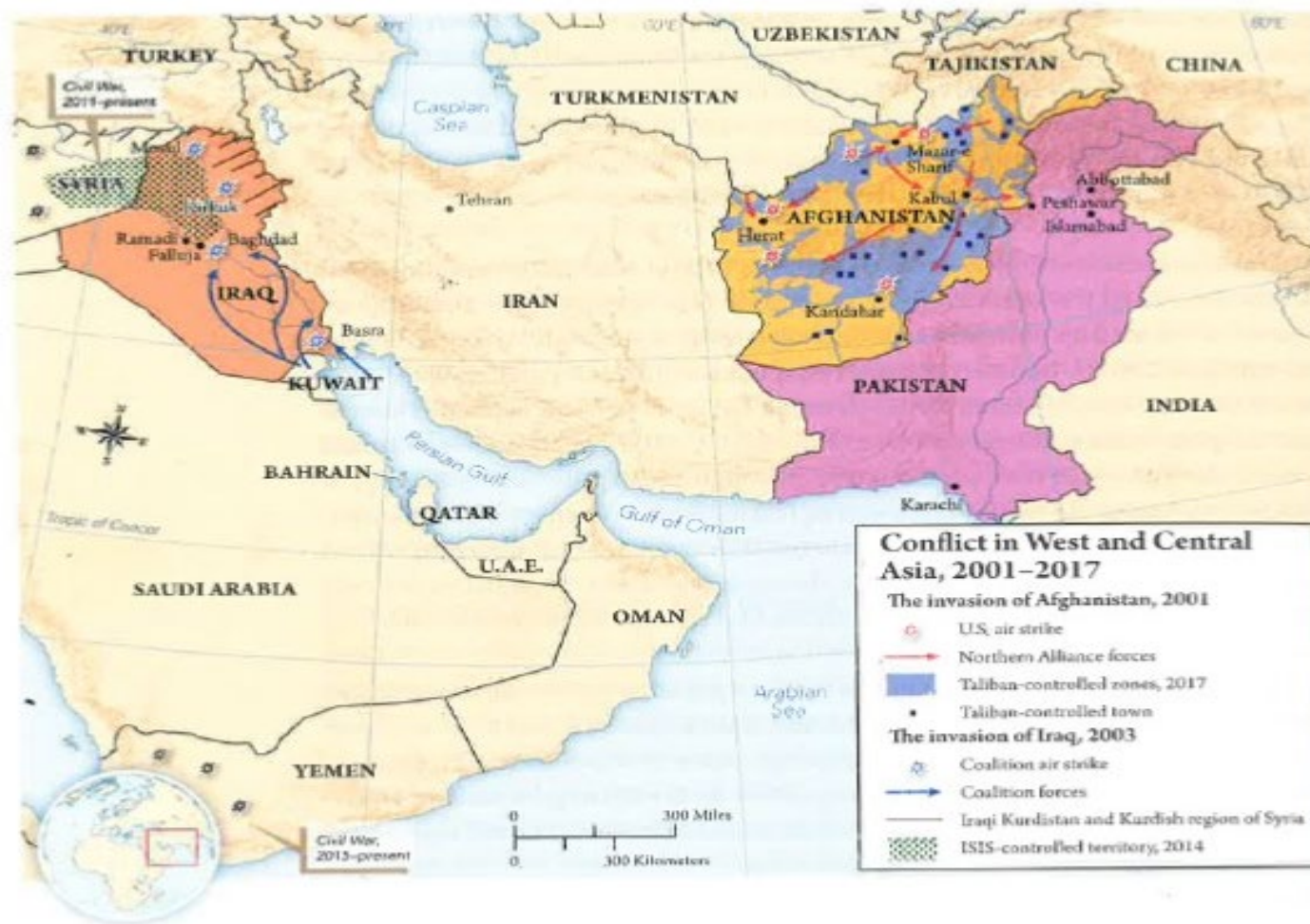
- Simplification
- Elimination
- Consolidation
- Distortion
- Separation
- Changing view
- Modifying size, position, scale, or layout

Avoid Clutter and Simplify

- Spacing is a key to avoiding clutter.
 $\frac{1}{4}$ " rule
- Limit of 5. Limit of 3 for lower grades.
- Eliminate unnecessary elements of the original picture.

Separation

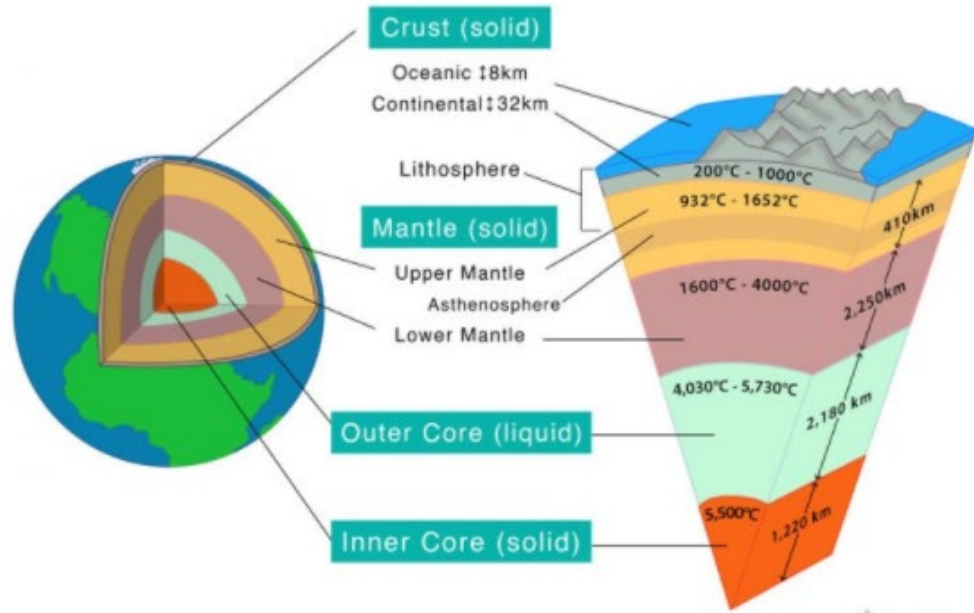
- Logical division
- Point of reference
- Entire image has to be “rebuilt” from layers



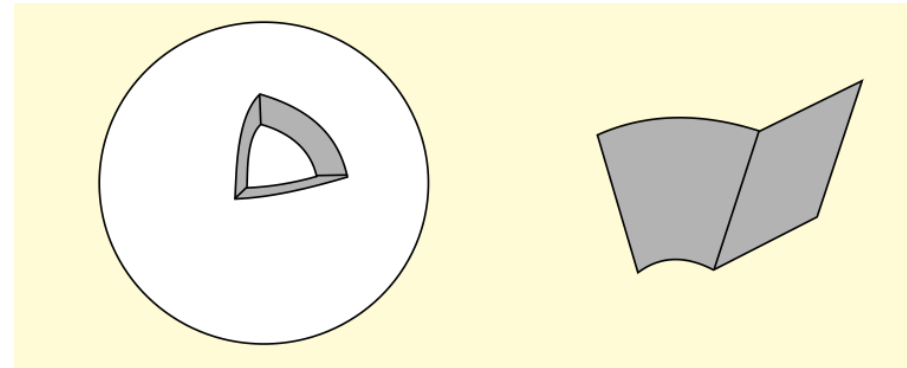
MAP 28.5 Wars in Afghanistan and Iraq, 2001–2011 After the terrorist attack on September 11, 2001, the U.S. government, with the help of Western and Afghani allies, launched an attack on the Taliban—a group in control of Afghanistan and a supporter of al-Qaeda. In 2003, the United States and its allies invaded Iraq on the grounds that it had weapons of mass destruction—which was not true.

Three-dimensional

Layers of the Earth



Shape of outer core in 3-D and angled views.



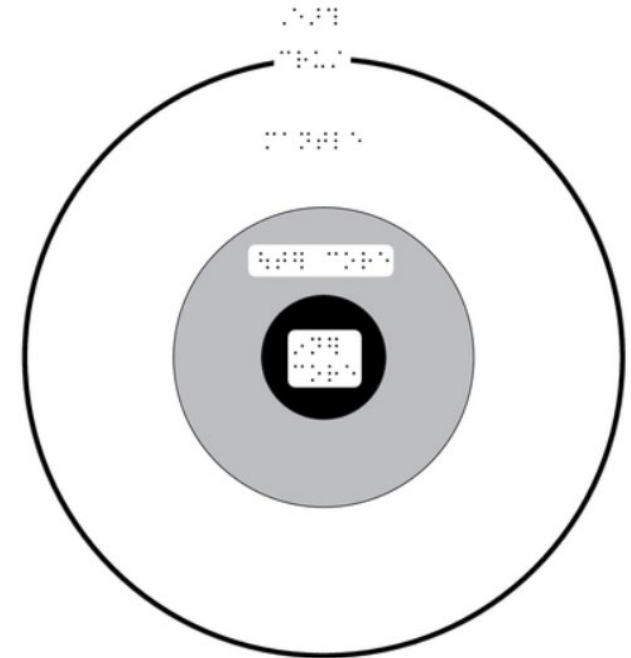
Simplified Cross-section View

Tactile Graphic Image Library (TGIL)

imagelibrary.aph.org

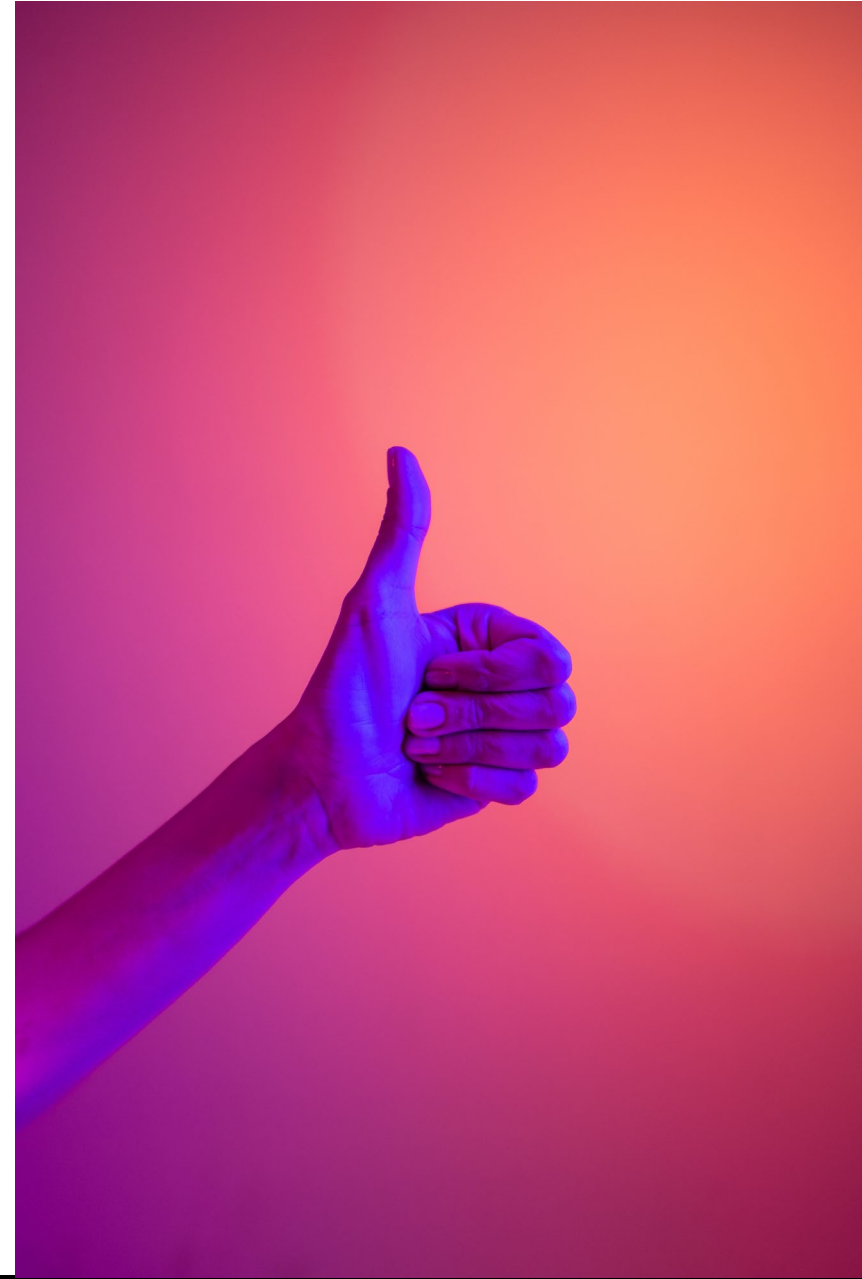
- Free
- Downloadable
- Customizable
- For all Production Methods

File Name: Interior of Earth

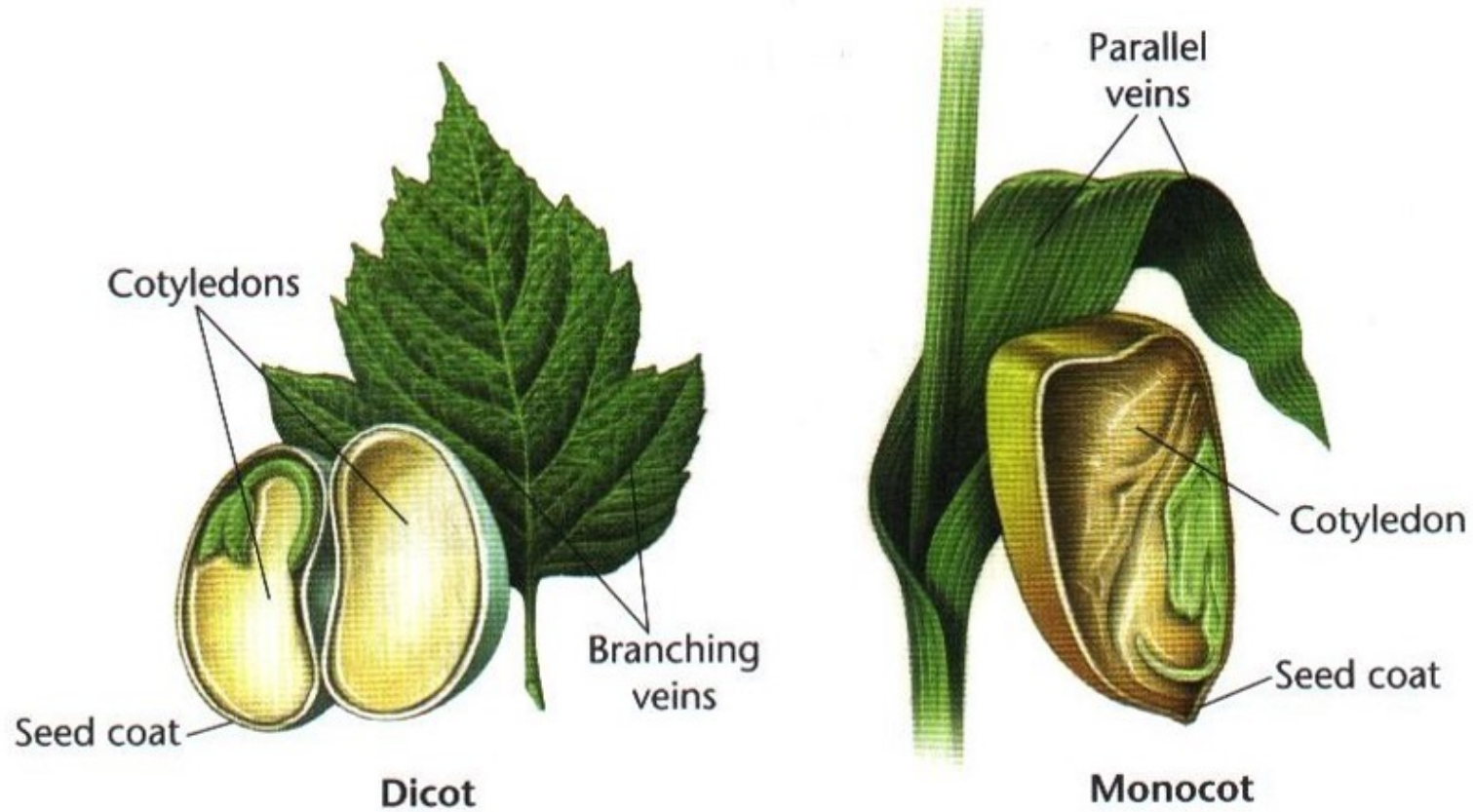


Name: Interior of Earth

Practice Time...



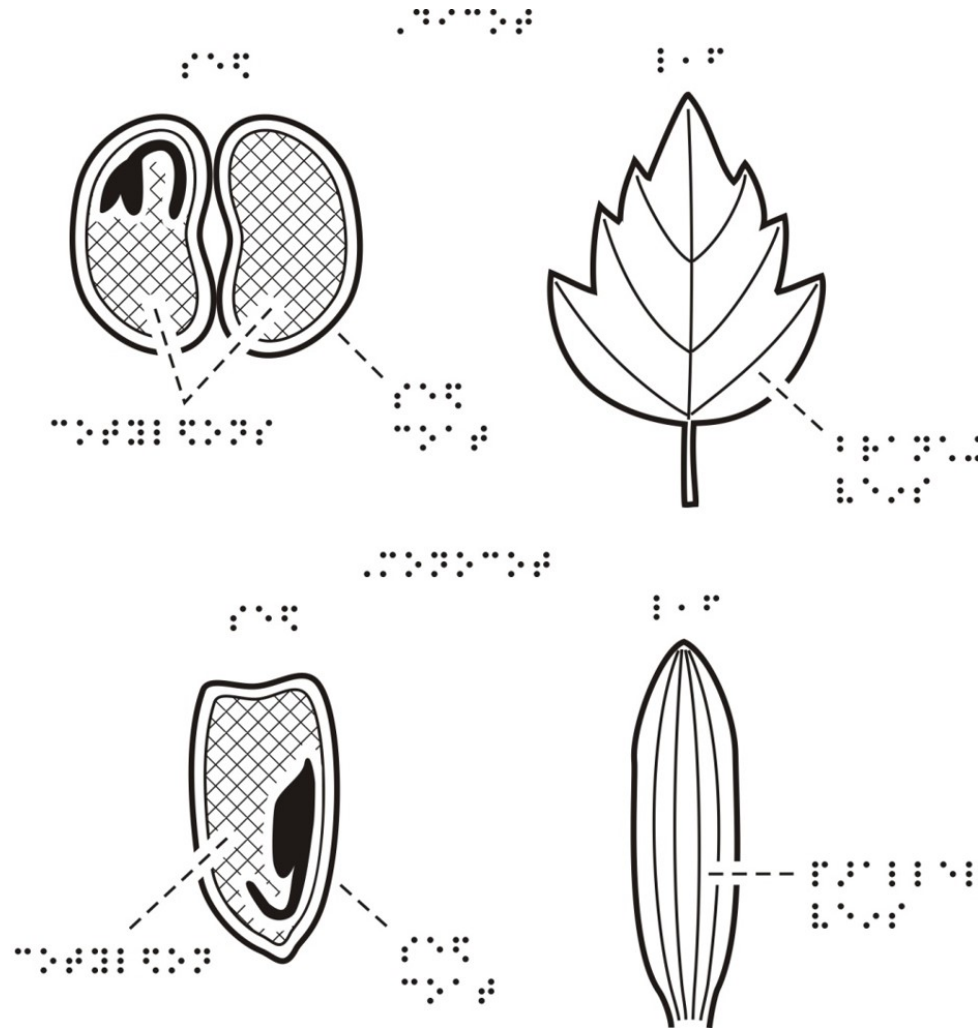
Comparison of Seeds and Leaves



The Planning

- Intent: Comparison
- Separate the overlapping seeds and leaves
- Simplify the shape and detail of the leaves
- Change the viewing angles
 - Seeds as cross section
 - Leaves flattened and straightened
- Add extra labels to identify the items
- Production Method: Electronic/ Thermography

The Design



Keys

- area textures
- line textures
- point symbols
- alphabetic key
- numeric key

transcriber's note in 7/5

blank line

area symbols left-aligned, top aligned with dots 14 of braille, description in 6/8

blank line

blank line

line symbols left-aligned, aligned with dots 25 of braille, description in 6/8

point symbols centered within the first four braille cells, description in 6/8

alphabetic and numeric keys in 1/3

space before diagram

space before page number

□ □ □

The image shows a Braille key chart with various symbols and their corresponding Braille representations. The symbols include a transcriber's note, blank lines, area textures (solid and stippled), line textures (solid and dashed), point symbols (open and closed circles), and alphabetic and numeric keys. A diagram of a page layout is shown at the bottom, with a space before the page number indicated. The chart is surrounded by a Braille border.

Proofreading

- Matching the Key
- Measurements
- Intent
- Hierarchy
- Page numbers
- Braille

Resources Available

Guidelines and Standards for Tactile Graphics, 2010 (with Graphic Supplement), BANA <http://brailleauthority.org/tg/>

Tactile Graphics, by Polly Edman (AFB Press)

Tactile Graphics Guidebook, by John Barth (APH)

NBA *Bulletin* and CTEBVI *Journal* Articles

APH Hive <https://aphhive.org/#/home>

Tactile Graphic Image Library imagelibrary.aph.org

Tactile Skills Matrix <https://sites.aph.org/tactile-skills/>

Upcoming Access Academy Tactile Graphics Webinars

- **Setting the Stage For Tactile Understanding**
Wed. January 20th: 1:30-2:30 (ET)
- **Explore and Use The Tactile Graphic Image Library**
Wed. January 27th: 11:30-1:30 (ET)
- **Tactile Graphic Quota Embosser**
Wed. February 3rd: 11:30-1:30 (ET)
- **Creating Collage Tactile Graphics**
Wed. February 10th: 11:30-1:30 (ET)

Acknowledgements

The information and/or examples in this webinar were gathered from many resources, including publications, conferences, workshops, and websites by American Printing House for the Blind, National Braille Association, Braille Authority of North America, Canadian Braille Authority, and many other individuals, professionals, and organizations. I wish to express sincere appreciation for their expertise and generous contributions.

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