



**T-BASE COMMUNICATIONS**  
Solution Experts

# Hybrid

Enhancing the learning experience  
when combining electronic and  
tactile formats

IN SIGHT. IN SOUND.  
IN TOUCH WITH YOUR CUSTOMERS.™

# What is Hybrid?

- Why tactiles matter & which subjects absolutely demand them
- Standards around integrated formats
- How to package tactile with electronic and audio
- Benefits of hybrid for you & your students
- Concrete examples of integrated tactiles



# T-Base and Education

- We understand & empathize with the needs of students
- Mirror delivery and accessibility with sighted peers
- Literary text, music, Nemeth and tactile graphics
- English and Spanish
- Braille, large print, e-Text, accessible PDF, audio CD, and DAISY



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# Our Expertise

## Accessible Learning Materials

- Member of BANA
- Accessible Media Producer (AMP) with NIMAC

## Accessible Tests and Exams

- Unique security environment
- Private and confidential
- HTML for online testing

## e-Learning



# Introductions

## Thought Leader: Aquinas Pather

- 20 years experience
- Chair of the BANA Tactile Graphics Technical Committee
- Braille Literary Transcription
- Tactile Graphics Instruction



# Why Tactiles Matter

- Graphics are an important part of the expression of ideas and the representation of information
- Good graphic interpretation skills leads to good literacy skills
- Blind children exposed to graphics at an early age learn braille much faster
- Tactile graphics and braille literacy allow students to continue into more advanced academic tasks i.e. standardized testing and advanced mathematics and science
- The ability to interpret tactile graphics play a big role in everyday life. (Orientation and Mobility needs of the blind)



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# Which Subjects Absolutely Demand Them

## **STEM subjects**

- Science
- Technology
- Engineering
- Mathematics

## **Geography**

## **Economics**

## **Mathematics**

- Graphs, Diagrams and Charts

## **The Sciences**

- Botany
- Zoology
- Physics
- Chemistry



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# Tactiles 101

- Tactile Graphics are available in thermoform plastic, microcapsule paper, thermo graphic ink or computer embossed braille
- To enhance readability, titles, brief introduction, a key or a legend is needed
- The art of efficiently describing tactile graphic information is providing the simpler graphics to depict the more complex graphics
- All tactile graphics are hard copy products to be explored by the finger tips
- Layout, design principles, braille formats and general display of tactile graphics are governed by BANA standards.
- Few instructional manuals exist and there is no recognized Tactile Graphic Design course YET.
- Proofreading is key



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# Ideal Packaging with Integrated Tactiles

## 4 reasons why Hardcopy Tactile + Electronic Text makes sense

1. Some textbooks are only available as eBooks in digital format. The only way of producing graphic content from eBooks is to create tactile graphics separately
2. The need to have the printed text and the print illustrations in a timely fashion
3. Graphics and text can be produced independently = production time and cost are greatly reduced
4. Portability of information making it readily available for students



# How to Package Tactile with Electronic and Audio

## **BANA Guidelines and Standards 2010**

- Modern textbooks have changed in the way they are produced
- Dedicated an entire section on Tactile Graphics Supplements to use when providing tactile graphics separately from e-Text, audio or braille
- Specific Guidelines when formatting Supplementary Tactile Graphics  
<http://www.brailleauthority.org/tg/web-manual/index.html>



# Standards Around Integrated Formats

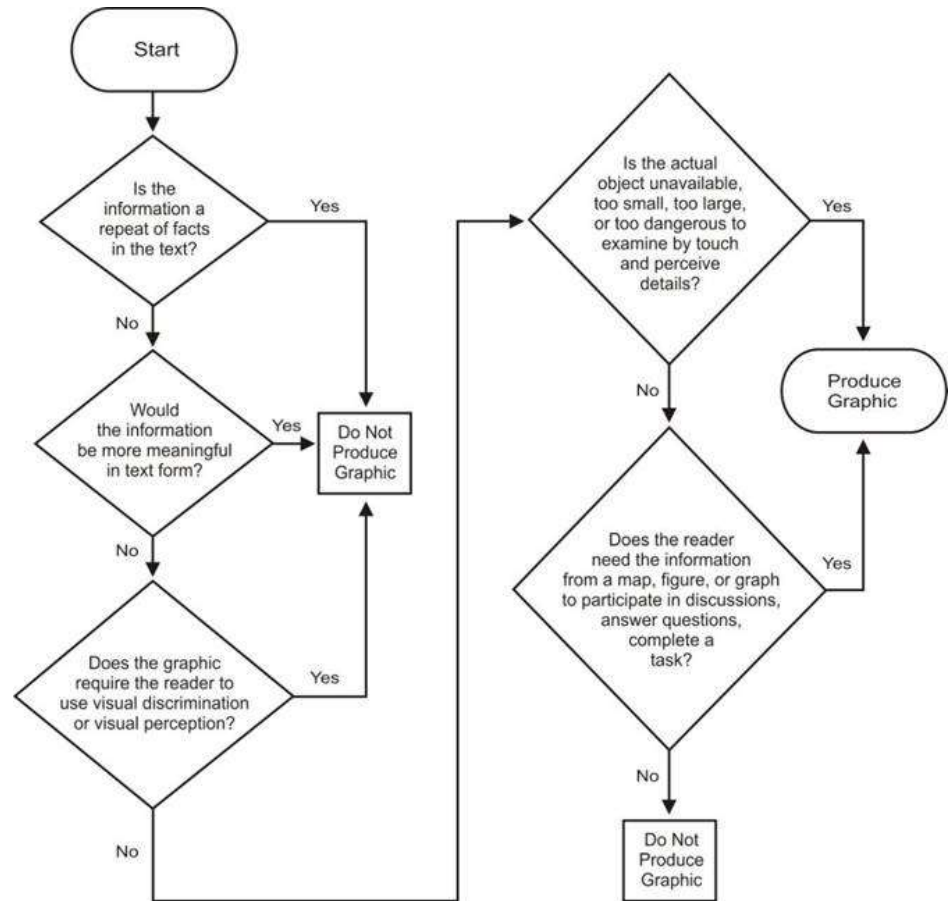
## Guidelines Stipulate:

- Where tactile graphics should be placed within braille volumes
- The instances when separate Tactile Graphic Volume supplements are a more viable option
- Whether tactile graphics are inserted in braille or separate volumes, the same design techniques and production method applies
- Braille formats for tactile graphics supplements have the same standard as other supplementary pages
- Title pages, Graphics Symbols pages, Transcriber's Notes pages and Table of Contents pages still have to be used



# Decision Tree

1. Diagram purpose
2. Complexity
3. Production time



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# Why Recommend Hybrid Formats

**Hybrid learning materials  
enhance student learning experience and ensures success.**

- Timely delivery
- Portability
- Reduce cost
- Student choice



# Examples of Hybrid Use

## CONSOLIDATION – COMBINING TEXTURES

- Technique of combining area textures to improve the readability without having to resort to dividing the diagram into many parts.
- A diagram with many distinct areas may sometimes be grouped into fewer textures.

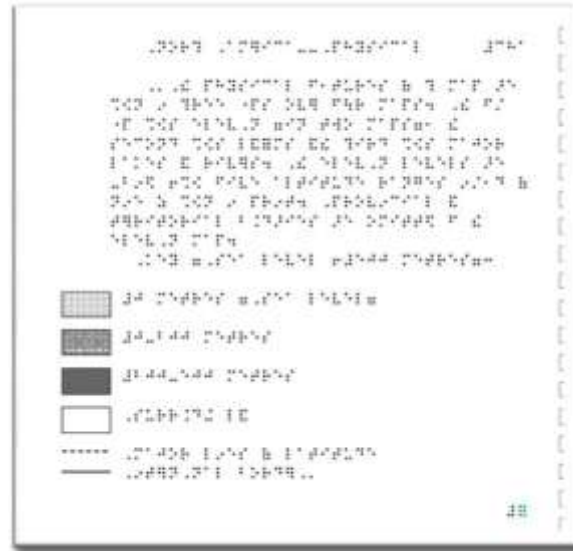
## NORTH AMERICA – PHYSICAL



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# Examples of Hybrid Use

## CONSOLIDATION – COMBINING TEXTURES

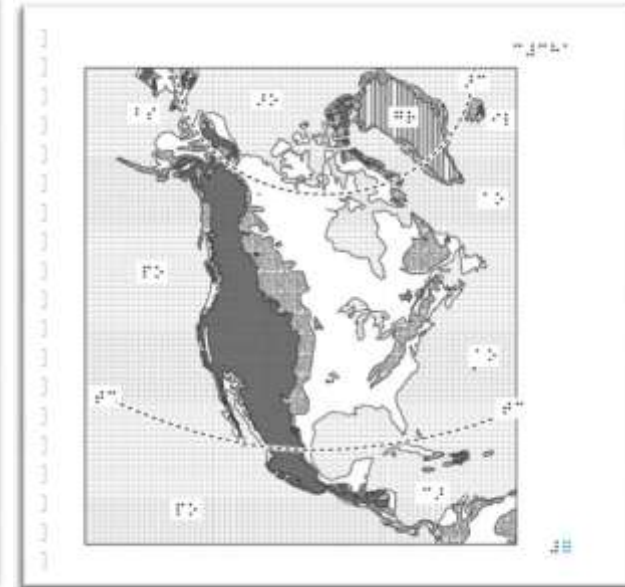


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# Examples of Hybrid Use

## CONSOLIDATION – COMBINING TEXTURES



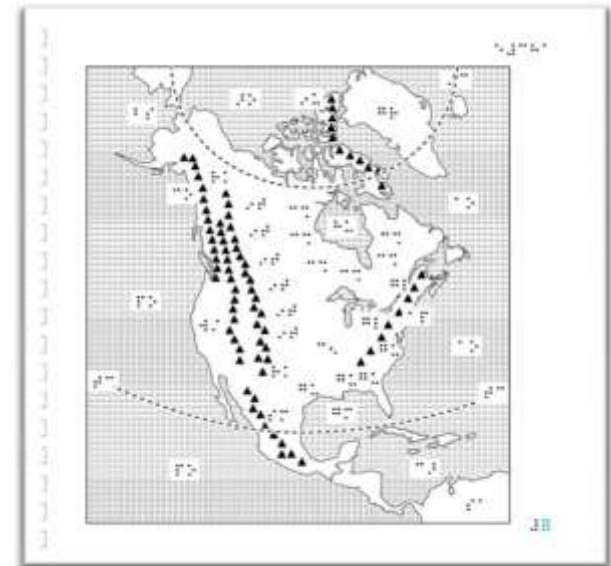
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# Examples of Hybrid Use

## SEPARATION

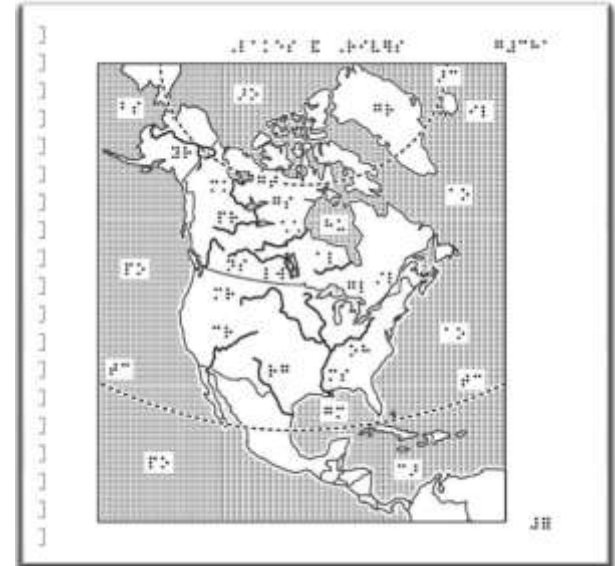


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# Examples of Hybrid Use

## SEPARATION

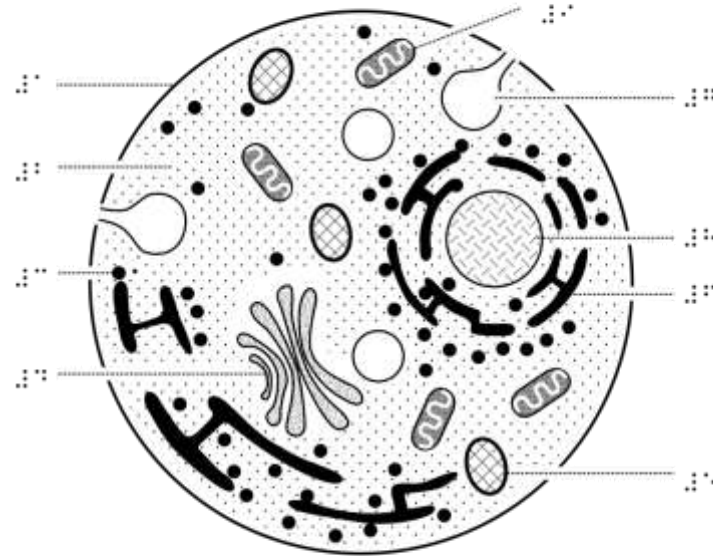
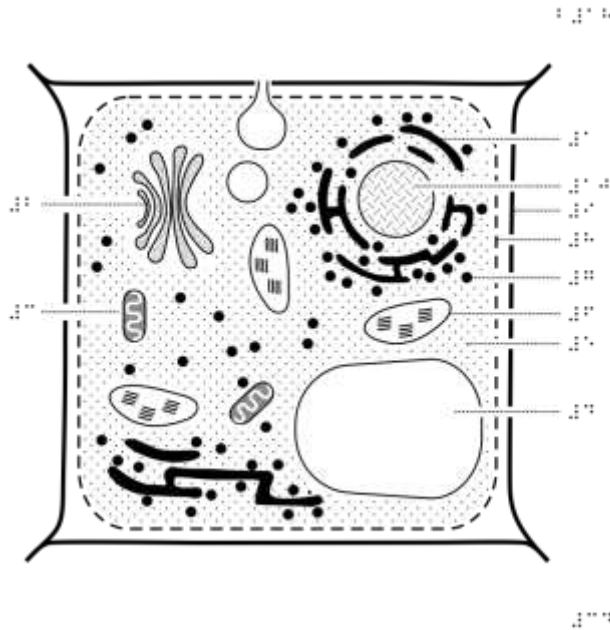


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# Cell Diagrams

## Animal/Plant



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# Microscope Diagram

Microscope Diagram

1. Eyepiece

2. Objective Lenses

3. Stage

4. Slide

5. Stage Microscope

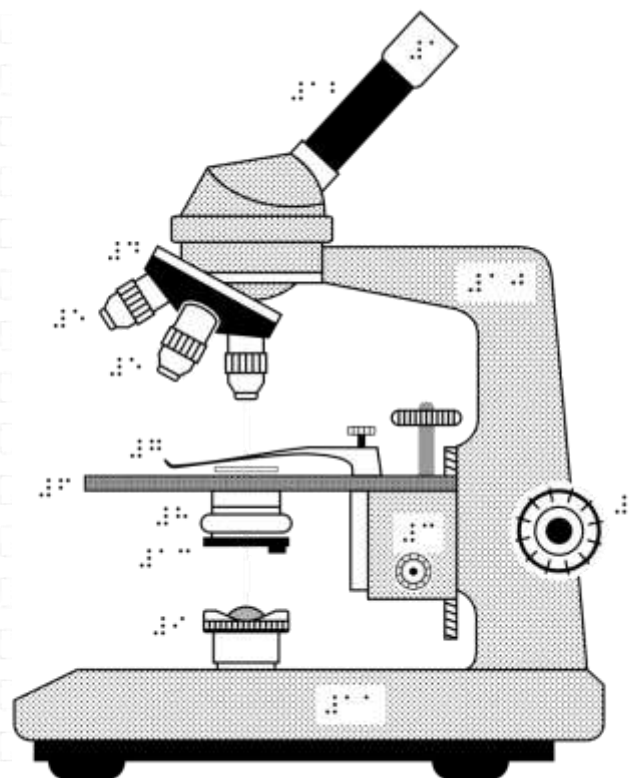
6. Stage

7. Objective Lenses

8. Stage

9. Stage

10. Stage



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# Summary

- Benefits of hybrid format
- Good graphic interpretation skills leads to enhanced learning experience
- E-text alone may not be 'good enough'
- Tactiles are fundamental for changing landscape



# Helping you help your students' prosper and grow

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<http://www.accesstext.org/>

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