

Introducing Tactile Graphics to Young Children

(Adapted from *Building on Patterns*, Second Edition, *Prekindergarten: Reference Volume*, pp. 30-32.)

Graphics are used to communicate information in print media at all levels. In addition to pictorial images, children learn to interpret charts, maps, diagrams, and other graphic information. Understanding and interpreting this non-textual information is vital in many areas of study.

Children who read braille must also learn to interpret and understand graphics. For blind and visually impaired students, tactile graphics are a critical means of providing non-textual information.

According to the Braille Authority of North America (BANA) (2011), "The interpretation and reading of a tactile graphic is a skill that must be taught to a braille reader. Students in kindergarten through grade 3 are developing skills to read tactile graphics and may need assistance in interpreting the information being presented, depending on the complexity of the tactile graphic" (p. 11-1).

While it is important to present tactile graphics to young children who are blind very early, they must first learn to interpret the graphics before the graphics can be meaningful. They need to be prepared for symbolic learning, the concept that something (such as a shape or a raised drawing) can represent something else (a real object, such as a pizza or a ball). Typically, preschool-aged children are in the process of learning many new concepts, such as size, shape, and texture; they are learning to generalize, for instance, that a ball, pizza, and plate are all round like a circle (Wright & Stratton, 2007). A child who is blind will need deliberate instruction during everyday experiences with many round objects over time, pairing and comparing the objects with raised circles, in order to begin to understand the idea that the circle is a shape and that the real objects share that shape as one of many characteristics.

Consequently, when tactile graphics are used to illustrate a story or symbolize something in an activity, it is necessary to deliberately *build* understanding while they are being introduced. The following guidelines should be followed when introducing tactile graphics to young learners who are blind.

1. Build the foundation for understanding graphically presented information.
 - Provide many opportunities to experience real-life concepts through everyday activities at home, at school, and in the community.
 - Make sure that children handle real objects within activities while pointing out their most important features.
 - Explore models together with the real objects they represent, pointing out important or distinguishing features.
 - Explore two-dimensional and symbolic representations (tactile graphics) of objects with guidance.
 - Young children with visual impairment require repeated opportunities to explore the tactile qualities of objects both independently *and* with guidance.

2. Pair tactile graphics with real objects and models. Kapperman et al. (2000) provide the following guidelines for introducing and working with tactile graphics for children:
 - Whenever possible, present the child with many opportunities to interact with the real objects before expecting them to interpret graphic representations.
 - Use three-dimensional objects or models alongside tactile graphics whenever possible, but especially when introducing a new concept or type of graphic display.
 - Emphasize the critical features and relationships on the graphics first.
 - “When selecting models to represent actual items or concepts, make sure that the critical features of each object or concept are present in the model to be used” (p. 391). For example, a toy car should have wheels that move, and a model of a bird should have feathers and two legs.

3. Teach students how to explore tactile graphics.
 - Make sure the child is seated squarely at the table to ensure consistent orientation.
 - Anchor the graphic so that it stays in place as the child uses it.
 - To begin, ask the child to “sweep” the graphic with both hands, open flat, to get an overall idea of its size and complexity.
 - Explain the purpose of the graphic to the child.
 - Draw the child’s attention to specific parts of the graphic and explain each part and how it relates to the other parts.
 - Allow the child to feel items independently.

4. The following ideas will be helpful developing student interest and engagement with tactile graphics.
 - When reading a story to your child/student, provide real objects that are included in the story and plenty of time for tactile exploration and discussion, both before and

while the story is being read. Objects will support understanding the same way that pictures support understanding for a child who has vision.

- When guiding children in object exploration, point out defining features, such as shape, size, and texture. Make comparisons when possible, such as, “The pumpkin is round, like a ball, but it has a hard stem on the top.”
- Compile a box of tactile materials that can be used for on-the-spot illustration of stories, such as a glue stick, feathers, buttons, foil, fabric pieces, straws, pipe cleaners, cork, and textured paper. See also Materials for Making Tactile Graphics and Tactile Markers on the BOP-K Teacher Resources page.
- Encourage your child to illustrate their own stories with the tactile materials.
- Teach children to understand a raised-line drawing by pairing it with the real object that it represents, pointing out the similarities and the differences. For instance, a raised-line drawing of a spoon should be presented with a real spoon; talk about the shape that is the handle of the spoon and the shape that is the bowl. Children may need many opportunities to experience this pairing before they understand that the raised-line drawing represents the spoon. (For more information on this topic, see [APH's Setting the Stage for Tactile Understanding Kit](#) and Guidebook [available as free-of-charge download].)

The introduction of tactile graphics to young children is exciting, important, and should be done with great care. Most importantly, teach young children that tactile graphics can be fun and creative; they can be used to illustrate stories and provide meaning just as pictures do in print books. Eventually, tactile graphics will provide a means of graphic representation that will allow them to participate academically in all subjects, including math, science, and social studies.

References

- Braille Authority of North America. (2011). *Guidelines and standards for tactile graphics, 2010*. <https://www.brailleauthority.org/guidelines-and-standards-tactile-graphics>
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- Wright, S., & Stratton, J. M. (2007). *On the way to literacy* (2nd ed.). American Printing House for the Blind.