

Multisensory Approaches to Helping Young Children Learn Mathematics

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Outline:

1. Investigate learning from a multisensory perspective
2. Explore activities in different mathematics content areas
3. Discuss results from a research study that focused on a multisensory approach
4. Examine resources for students and teachers

Activities for teaching

- **A geometry example** – sort objects (pattern blocks and/or real-world objects) according to attributes such as number of corners, straight vs. curved sides, etc.

Other geometry ideas:

- **A data example** – use tactile objects and materials (thumbtacks, puff paint, etc.) to display data points and create tally tables

Other data ideas:

- **A number example** – listen to sounds repeated and identify mathematical aspects such as the number of sounds made, or more, less or equal numbers of one sound or another

Other number ideas:

- **A measurement example** – use non-standard units of measure such as the width of a finger, a tactile “inch” worm, a paper clip, etc.

Other measurement ideas:

- **A pattern (algebra) example** – use fabrics made from contrasting textures and colors to represent a quilt pattern

Other pattern ideas:

Guidelines for adapting lesson materials

- Tactile & Auditory – use tactile (fabric, puff paint, yarn, etc.) materials and auditory (instruments, clapping, etc.) resources instead of or to enhance print materials
- Lighting – consider the fact that reflected light, glare, and bright light may need to be minimized
- Contrast – use high-contrast coloring rather than colors that will be more difficult to distinguish
- Print – increase the white space on a print page
- Time – allow more time for visual processing and/or to complete tasks using other senses

Classroom resources

- iPads – screen enhances perception of images with additional capabilities including audio options for students, and interactive hands-on manipulation
- online resources –
 - supplementary instructional videos for teachers and/or students, interactive games and other manipulatives
 - websites such as
 - <http://www.livebinders.com/play/play/36989> --- iPod Touch & iPad resources for PreK – 12 educators
 - <http://www.readyforlearning.net/html/math.shtml> --- a collaborative website that provides links to early literacy in several areas, including mathematics
- other –
 - synthetic speech (artificial human speech produced by a computer)
 - scanners, practical note-taking devices
 - jumbo and/or talking calculator
 - magnifying glass, reading guide made from cardstock or construction paper, audio recorder

Print resources consulted for this presentation

Fennell, F. (Ed.). (2011). *Achieving fluency: Special education and mathematics*. Reston, VA: NCTM.

Smith, S. (2013). *Early childhood mathematics* (5th ed.). Boston, MA: Pearson Education, Inc.