PreK Published!

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The Building Blocks project’s first curricula have just been published. These materials are for preschool. Kindergarten teachers might also like to try out the software materials, as they contain several levels above preschool.

The products include (1) a complete curriculum for preschool and (2) a set of most of the math materials from the package. Let’s take number 2 first. This is called the DLM Early Childhood Express Math Resource Package (see “How to Order” on p. 3). It includes three components. First and foremost is the Building Blocks software for preschool, including 11 activities with multiple developmental levels and an entire management system. Second is the “Math Guide,” which contains guidelines for teaching math to young children (on and off computer), ideas for teaching math throughout the day, and concise descriptions of the off-computer activities and games that complement the software. It also includes activity sheets for the on- and off-computer activities and blackline masters for other materials, and, third, it includes a set of pattern blocks.

Field Test New PreK-2 Version

The next step for Building Blocks is developing and conducting field tests of the Building Blocks PreK-grade 2 stand-alone version! We are interested in having you help us field test these new PreK-2 materials, which would supplement other programs, especially Investigations and Everyday Math. These materials will include the software we have already produced (which had to be rushed to publication, so we missed many having many of you field test it, unfortunately), and will build on that base, adding more developmental levels and new software and off-computer activities.

If you are interested in being a field test site for this stand-alone version, please let us know as soon as possible. We will plan to get you materials and schedule visits if you like. If you are not local, we will also accommodate you! Again, please e-mail, phone, or write us.

Building Blocks Research

We have some exciting news to share on research we’ve been conducting on the Building Blocks materials. After a year-long research project in several preschool classrooms—unfortunately, only a month or so with the software—we have some wonderful results. We were struck by many children’s great need for math, but also their great potential for learning.

As an example of the need, one girl who turned four years of age one day early in the year declared, “It’s my birthday today!” When asked how old she was, she replied, “I don’t know.” She didn’t know. She couldn’t count to four verbally, and certainly couldn’t count out four objects.

By the end of the year, she was counting past 10 and eagerly playing games and performing activities on and off the computer that required her to count objects to 10 with understanding.
**Building Blocks Software—What’s There?**

What is in the first Building Blocks software package? Quite a lot, we believe! It contains 11 activities, and 10 of these activities have multiple levels, with some levels being substantially different activities. Also, it has a management system that individualizes work for each child and it works in English and Spanish (or both). *DLM Math Software:*

**Connects** children’s informal and school mathematics. Research tells us this is early childhood mathematics education’s “missing link.”

**Includes** everyday activities and objects such as building blocks, art, and music, and mathematical objects specifically designed to facilitate mathematical thinking.

**Connects and mathematizes** key activities from everyday life, such as setting a table, and special mathematical objects and actions or processes that allow endless possibilities for math explorations.

**Finds the mathematics in, and develops mathematics from, children’s activity,** helping children extend and mathematize their everyday activities, from building blocks to art to puzzles.

For example, children:

- set a party table, matching one-to-one and counting
- play dinosaurs shopkeeper, counting up to ten, adding, and so on to fill orders
- build stairs, counting, ordering numbers, and adding
- decorate cookies with Mrs. Double Trouble, comparing, matching and producing
- play memory games in both number and geometry; for example, matching numbers or congruent shapes
- make mystery toys, matching and identifying by name a wide range of geometric shapes
- design and build their own scenes with shapes, developing shape composition abilities, knowledge of shape transformations, and number concepts
- solve shape puzzles, turning, flipping and sliding shapes and copying and completing patterns

We believe in integrating off- and on-computer experiences. For example, children love puzzles. We build on that to challenge them to solve “geometric composition” problems—putting together shapes to make new shapes.

Children solve puzzles by filling a puzzle outline with pattern blocks. The paper and computer puzzles are at 4 levels along our research-based learning trajectory.

Children do a similar activity on the computer, where the pattern blocks snap together in a satisfying manner and stay put.

The computer’s tools for actions such as sliding and turning help children become more aware of these mathematical processes.

As if this is not enough, the powerful management system automatically assigns children to just the right level of challenge in our learning trajectory (see our Vol. 3 newsletter). It also keeps records for the teacher, to use for assessing children’s understandings and for reporting to parents.

The Management System helps because it:

- Guides children through research-based learning trajectories- that is, helps children through an optimal learning path for each particular topic...
- Assigns children tasks within each activity that are at the appropriate level of difficulty, moving “up” or “down” to accommodate each child’s needs
- Stories all this information so the child returns to the right place on the path the next time they sign onto the computer
- And – it helps you to:
  - Personalize the program...
  - Remember your assignments from one day to the next...
  - Provide children with work at their own level each time they work at the computer
  - Record children’s progress and provide reports on individual children and on your class
  - Provide individualized help to children who need it and enrichment to those who are ready for a challenge.
The only math materials that the resource guide does not include are the day-by-day lessons included in the Teachers' Editions, which can also be purchased separately.

Separately from what? These math components are also part of a large package, "DLM Early Childhood Express," that covers all goals—all developmental areas (e.g., social-emotional) and all subjects, literacy, mathematics, science, social studies, etc., for preschoolers, including teacher editions, lots of books, software, manipulatives.

SO, if you wish to just use software, you could order the "DLM Express Math Resource Package." If you want the day-by-day (week-by-week) math lessons, you could also purchase the Teachers' Editions (but note, you would be buying all lessons, not just math). And if you want the books, “big books,” and all the rest, you would want to order the whole "DLM Early Childhood Express." See "How to Order" on this page for more information.

In geometry, one girl was asked if she knew the name of the trapezoid. She immediately said, "trapezoid," and pointed to the computer, indicating where she had learned that vocabulary term. In the computer activity Mystery Toys, each shape name is pronounced as children match shapes. Later, the children are asked to click on the correct shape when the computer pronounces its name. This was a popular activity with the children and they enjoyed imitating the "computer" voice when they named shapes. Throughout the study, discussions encouraged children's descriptions while motivating the development of precise language. Early talk clarified the meanings of terms. With such clarification, children learned to explain why a shape belongs to a certain category-"It has three straight sides." Eventually, they internalized such arguments; for example, saying, "It is a weird, long, triangle, but it has three straight sides!"

See a chapter Julie Sarama recently wrote about Building Blocks, including our research, at the web site, http://www.gse.buffalo.edu/org/buildingblocks/. We will soon have the comprehensive, standardized interview assessment findings analyzed, and we'll look forward to sharing those results as well.

How to Order

For those who mostly want the software (which at this time is packaged with the "Math Resource Guide" and pattern blocks; see "PreK Published!" on p. 1 for more information), order the DLM Express Math Resource Package, ISBN 007-572-2720.

The daily lessons are in the Teachers' Editions (which have lessons for all areas), ISBN 007-572-1899, 007-572-1902, 007-572-1910, and 007-572-1929.

For the entire package (a huge curriculum covering all developmental areas and all subjects, such as literacy, mathematics, science, social studies, etc., for preschoolers, including teacher editions, lots of books, software, manipulatives—i.e., the entire Math Resources Package), ask for "DLM Early Childhood Express," ISBN 007-572-7242, for the English version, or ask for the national version for English and Spanish.

To order, call SRA/McGraw-Hill at (800) 843-8855 (or 888-772-4543) or see www.sra4kids.com. They should be shipping now!
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New Grant Builds on Building Blocks
The Building Blocks team at UB have received funding from the U.S. Dept. of Education to be one of any a handful of researchers to participate in a national Preschool Curriculum Evaluation Research project. With Alice Klein and Prentice Starkey of the Univ. of California—Berkeley, Julie Sarama and Doug Clements will lead a large assessment of the immediate and long-term effectiveness of math in the preschool—combining Building Blocks with Klein and Starkey’s math curriculum. Stay tuned!

Thanks to Teachers
We want to express our deep appreciation for the staff at the field test sites. At school 78 in Buffalo, that includes Nadine Hirsch, Jane Spell, Cathy Leuthe, and the wonderful support staff. At Holy Cross Head Start Northwest, Natalia Ziemdev, Linda Bialek, and Kristina DeAngelis. We also thank the supportive administrators, Michelle Kassirer, Janice Kilijanski, Grace Schaefer, and Marion Canedo. We also thank Deborah Houck, Maureen Fradin, Donna Donner and other friends at Olmsted #64.

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