

WINTER 2009–2010

HIGHSCOPE

ReSource

A M A G A Z I N E F O R E D U C A T O R S

HighScope's Numbers Plus Curriculum

The What and How
of Early Math Learning

Training Teachers to Teach
Preschool Math

Data-Driven Decision Making



Dear Readers:

We are all worried about the economy, but you can discover something interesting

by looking at certain economic graphs: How bad it looks depends on how far back you look. From early 2008 until now, the nation's economy as represented by the real gross domestic product (GDP), has taken a nosedive. But if you look at the bigger picture, starting back with 1990, you see steady progress upward, ending with a short drop since 2008 (back down to the 2006 GDP). Still bad, but now that nosedive looks like a temporary setback.

This same long-term perspective has transformed our ideas about early childhood programs. Back in the 1960s, it looked as if early childhood programs could have only a short-term temporary effect. Then we looked at the effects of the HighScope Perry Preschool program as participants became teens and adults. By looking at the big picture, we saw the enormous potential of high-quality early childhood programs to increase success in school and adult employment, to reduce crime, and to provide a huge return on public investment. More research by others has subsequently confirmed this potential. State governments and the federal government saw it too and started investing more. All thanks to a shift in perspective from the short term to the long term.

With this issue of *ReSource*, we are pleased to introduce to you our new Numbers Plus Preschool Mathematics Curriculum, a set of 120 activities for small and large groups, developed with funding from the U.S. Department of

Education. This curriculum enhances the HighScope preschool curriculum by applying HighScope active learning principles and practices to early childhood mathematics objectives. These objectives — number and operations, geometry, measurement, algebra, and data analysis — fit well with recent recommendations of the National Council of Teachers of Mathematics and National Association for the Education of Young Children, and the National Research Council's Committee on Early Childhood Mathematics.

In our lead article Ann Epstein writes about "The What and How of Early Math Learning," discussing recent research that recognizes the mathematical thinking that young children engage in, such as observing, navigating in space, comparing quantities, and communicating ideas. The article also addresses *how* teachers can effectively draw out and support young children's mathematical abilities. Because learning mathematics is sequential, young children need to count objects before they can add or subtract numbers; they need to understand comparative words like *longer* and *shorter* before they can measure and compare the lengths of two objects. While some educational models use this sequencing to justify having young children participate in groups in which they all engage in the same activities in the same sequence, Numbers Plus sequences learning *within* each activity, with each child participating at his or her own level.

Also in this issue, Marijata Daniel-Echols summarizes the recommendations of the National Research Council's Committee on Early Childhood Mathematics, published in their report *Mathematics Learning in Early*

Childhood: Paths Toward Excellence and Equity. Beth Marshall explains how Numbers Plus training can scaffold teachers' early math learning so that they can more effectively support and teach children. HighScope's debut Numbers Plus workshop at our May 2009 International Conference got enthusiastic reviews from participants, and now our trainers are taking the course on the road and on the Web. In other training news, Gavin Haque writes about HighScope's flexible Step By Step approach to professional development, which meets the needs of individual agencies with different time constraints and budgets.

Finally, Dr. Daniel-Echols presents an article about data-driven decision making — how practitioners are becoming increasingly research literate and partnering with organizations like HighScope to build programs that contribute in significant ways to the development of the young children they serve.

Sincerely,

Larry Schweinhart, President

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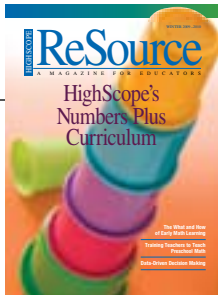
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THE HIGHSOPE FOUNDATION is an independent, nonprofit organization founded by David Weikart in Ypsilanti, Michigan. HighScope's mission is to lift lives through education by engaging in curriculum development, research, training, and publishing and communication.



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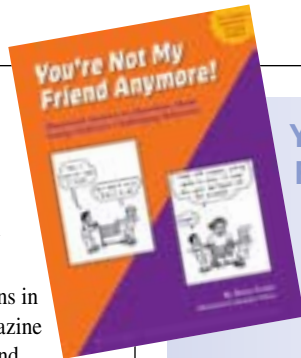
What's New

News on the foundation's latest projects and products

@HighScope?

New Format for ReSource!

Welcome to the first issue of *ReSource* in a new format. We've combined the magazine you know and enjoy reading with a **product catalog** to give you two publications in one. On one side is *ReSource* magazine with all the educational features and articles you have come to expect. Flip over the magazine and you'll find our product catalog for easy reference and shopping. We hope you'll enjoy the convenience of having both publications at your fingertips with this new format!

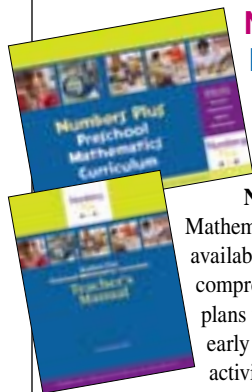


You're Not My Friend Anymore!

Illustrated Answers to Questions About Young Children's Challenging Behaviors

This new book from author Betsy Evans features a series of 21 illustrated scenarios, providing a close-up look at children's challenging behaviors and the ways in which adults respond to conflict situations. The book compares "typical" (or more traditional) adult responses to the more effective and productive problem-solving approach that fosters children's social-emotional competence. See page 12 for an excerpt from this new HighScope publication.

Now Available! New Numbers Plus Curriculum & Training



HighScope's new **Numbers Plus** Preschool Mathematics Curriculum is now available. Numbers Plus is a comprehensive set of detailed plans for small- and large-group early childhood mathematics activities, with ideas for extending learning throughout the program day (see Catalog, p. 11, for more information).

Aligned with the standards of the National Council of Teachers of Mathematics, the 120 activities in Numbers Plus are divided into five content areas: Number Sense and Operations, Geometry, Measurement, Algebra, and Data Analysis. (See the related article on early math learning and Numbers Plus on p. 5.)

Numbers Plus training is also up and running with on-site and online training options (see related article, p. 17 for details). Both the 2-day workshop and 6-week online course introduce participants to important math concepts in the five content areas of Numbers Plus and cover how adults can scaffold children's math learning using specific interaction strategies. Participants also learn about adding materials to their classrooms to support children's math learning.



Ideas From the Field

Need a jump-start on your plans for small-group times? HighScope's **Ideas From the Field** can help!

Ideas From the Field is a new addition to HighScope's eTools — it is a Web page where real teachers share their favorite activities for small-group times. We choose the most innovative plans teachers send us, and then post them in an easy-to-follow format so that you can quickly go from looking at an activity on the Web page to adapting it for your classroom. Ideas from the Field is updated on a regular basis (look for Ideas From the Field in the "What's New?" box at highscope.org), so be sure to check back often to see a fresh idea for a teacher-tested activity that you can use in your classroom.

If you are one of those lucky teachers who have an excess of great ideas for small-group times, we would like to offer you the chance to share your favorite small-group-time plan with your HighScope colleagues. If your idea is chosen, it will be posted on Ideas From the Field. You'll be

sure to hear "Wow, why didn't I think of that?" from your colleagues. You'll also receive a \$15.00 gift certificate to HighScope's online store. For a small-group-time form and more information, go to Ideas From the Field in the "What's New?" box on our home page (highscope.org).

HighScope at NAEYC

HighScope will again be a Gold Sponsor of NAEYC's Annual Conference and Expo, which will be held this year November 18–21 in Washington, D.C.

As part of the sponsorship, HighScope will co-sponsor, with Community Playthings, a featured session called "**When Learning Comes Naturally: Nurturing Children's Connection to the Environment**," presented by Cheryl French, Rachel Grob, and Lorayne Carbon of Sarah Lawrence College, and William Crain of The City College of New York.

The program profiles the efforts of various schools to introduce children to the natural world and to encourage them — through play, classroom activities, exploration, and their own creative work — to make a lasting connection to the environment. "When Learning Comes Naturally" premiered on public television September 1.

Produced by Jonathan Diamond Associates in association with the Child Development Institute at Sarah Lawrence College, **The Learning Child Series** has been produced to assist parents and educators in guiding children to become motivated and thoughtful learners, engaged by the discoveries that are a part of learning. In addition to this session sponsorship, HighScope (along with Clorox) is sponsoring the first-ever NAEYC conference bag.

HighScope will have a large exhibit at the conference that will feature free mini-workshops on useful activities in the classroom throughout the day on Thursday and Friday. Visit us at booth #931 and see a demonstration of our OnlineCOR assessment tool. HighScope staff and field consultants are presenting several sessions at the conference as well.



The What and How of Early Math Learning

by Ann S. Epstein

If there is any question about whether preschoolers are interested in and ready to learn mathematics, just observe their play. Here are some comments from young mathematicians:

- “Six children and six napkins. And a spoon to eat mud soup on top of each one.”
- “Make this end [of the ramp] higher so the cars will go down faster.”
- “Add more water to the other glass to make them even.”
- “You be the daddy kitty because you’re the tallest. She’s the baby because she’s the littlest. And I’ll be the mommy so I can sit in the middle.”
- “I made two kinds of orange. This one has lots of yellow and this one has lots of red.”

In the past 25 years, researchers have come to appreciate how much young children enjoy and are capable of doing mathematics. For example, when psychologist and researcher Herbert Ginsburg and his colleagues observed children’s free play, they were amazed not only by how much children used mathematical ideas, but also by how advanced their thinking was (Ginsburg, Inou, & Seo, 1999). Professor Arthur Baroody (2000) says preschoolers actively build their knowledge and understanding of math concepts from daily experiences



Adults can support and extend — scaffold — children’s early math learning by systematically engaging them in working with materials, pursuing their own investigations, and drawing conclusions.

and the lessons they derive from them. Children then use this knowledge to solve problems.

What Does Early Math Learning Look Like?

Educators have also discovered that early mathematics is more than reciting numerals or rote counting. Many types of activities lay the groundwork for current and later math learning. Young children explore *number and operations* when they count the blocks in a tower, do *geometry* when they put together jigsaw puzzles, practice *measurement* to figure out who is tallest, use *algebra* to create patterns on a pegboard, and apply *data analysis* when they use class preferences to determine how much of each ingredient to put in the trail mix at snacktime.

The National Council of Teachers of Mathematics (NCTM) recognizes these five math content areas in its educational standards; the

first three (called “focal points”) are especially important in the early childhood years (NCTM, 2000, 2006). These five math content areas, briefly defined below, are also the basis of HighScope’s new Numbers Plus Preschool Mathematics Curriculum (Epstein, 2009), a set of 120 small- and large-group activities, developed under a grant from the U.S. Department of Education.

- **Number and operations** involves understanding whole numbers and realizing that numbers represent quantity. It includes learning number words and symbols, counting, comparing and ordering quantities, composing (combining) and decomposing (dividing) numbers, and simple addition and subtraction.
- **Geometry** involves identifying shapes and describing spatial relationships, and includes learning the names and properties of 2- and 3-D shapes, transformation (changing shapes, putting them together and taking them apart), and spatial reasoning (using position, direction, and distance words).
- **Measurement** involves identifying measurable attributes and using them to compare objects, actions, people, and events. For young children this means learning simple measurement terms and processes, under-

standing what a unit is, and comparing and ordering attributes.

- **Algebra** involves identifying patterns and relationships, including describing, copying, and creating simple alternating patterns (such as ABABAB, ABCABCABC, or AABAABAAB) and recognizing and describing increasing and decreasing patterns (such as cycles of plant growth or children getting older).

- **Data analysis** involves formulating and answering questions by collecting, organizing, and analyzing information. In the early years this includes describing attributes, organizing and comparing simple data, representing findings on simple charts or graphs, and interpreting and applying the lessons learned.

Of course, we shouldn't look for preschoolers to derive square roots, do geometric proofs, calculate metric conversions, solve algebraic equations, or perform a regression analysis. As

with other academic subjects, we need to be careful that our expectations are in line with their emerging abilities. On the other hand, we should be aware of all the developmentally appropriate ways in which young children do engage with mathematical ideas and processes. For example, math learning is taking place whenever children are engaged in the following activities:

- Observing — discovering and creating knowledge about the world using all their senses
- Exploring materials — investigating the properties of objects and how things work
- Working with numbers — making intuitive judgments about quantity and grasping one-to-one correspondence
- Ordering things — putting things in order based on an attribute such as size, loudness, weight, or color intensity
- Navigating in space — moving in their surroundings, fitting things together and taking them apart

- Comparing quantities — recognizing bigger and smaller, more and less
- Identifying regularities — recognizing, copying, and creating patterns; recognizing routines and repetition in events
- Classifying objects — organizing and sorting information into categories
- Drawing conclusions — explaining what one observes and making predictions
- Communicating ideas — sharing their thoughts through talking, gesturing, drawing, and writing

How Do Adults Support Early Math Learning?

Just because “math is everywhere,” however, does not mean early math learning can be haphazard or left to chance. In addition to recognizing *what* young children understand, teachers and parents must also know *how* to foster their learning in ways that neither under- nor overestimate their abilities. Adults scaffold (support and extend) learning when they systematically engage children in working with math materials,

In this activity from HighScope's Numbers Plus Curriculum, children explore shapes and patterns as they build skills and knowledge in the content areas of geometry and algebra. Adults can describe and copy children's patterns, pointing to the shapes children use and saying their names in order.



Successful Sequencing for All Children

Sequencing early mathematics learning within (not across) activities is effective because it

- 1. Acknowledges the diversity of young children's developmental and ability levels.** Teachers maximize each child's potential to engage at his or her own level by accommodating strategies to children, rather than expecting children to adjust to the activities. Conversely, in a fixed sequence, a teacher may proceed to a higher-level activity before all children have mastered concepts from an earlier activity. The children who have not mastered the concepts will be further lost during each successive activity.
- 2. Encourages children to learn from peers.** Mixed developmental and ability groups allow children to learn from their classmates. Children are challenged when they have to make sense of differences between their own conclusions and those of their peers. Having to explain their reasoning to others also encourages children to think about and articulate their thought processes.
- 3. Accommodates different needs for practice.** In all content areas, children need different levels of practice to master or internalize a skill or concept. If the group advances to the next activity, even a child who appears to understand an earlier task may need to stay at the same level for a while. Sequencing within activities accommodates such differences in pacing, while follow-up and related activities provide additional opportunities for practice.
- 4. Recognizes day-to-day variations in interest and attendance.** On any given day, a child may not be interested in the topic addressed or may be absent. Teachers need the flexibility to use what the child is interested in as a springboard for meaningful engagement with some component of math. They also need a mechanism for engaging children who may have missed one or more math activities entirely. Sequencing within activities provides this flexibility.
- 5. Guarantees all children will have a positive and meaningful learning experience.** Early childhood educators, and teachers in the later grades, all want young children to develop a positive attitude toward mathematics. By providing children with engaging and successful math experiences from the outset, we help them gain confidence and remain engaged with the subject.

pursuing their own mathematical investigations, and drawing math-based conclusions. We can encourage their mathematics reasoning with thoughtful comments, such as *I wonder what would happen if...* and *Why do you think...?*

A joint position paper of the National Association for the Education of Young Children (NAEYC) and NCTM, titled *Early Childhood Mathematics: Promoting Good Beginnings*, also emphasizes that adults must actively create a math-friendly environment:

Because young children's experiences fundamentally shape their attitude toward mathematics, an engaging and encouraging climate for children's early encounters with mathematics is important. It is vital for young children to develop confidence in their ability to understand and use mathematics—in other words, to see mathematics as within their reach. (NAEYC & NCTM, 2002)

Embedded in the teaching strategies of Numbers Plus are five essential principles of active participatory learning: materials, manipulation, choice, child language and thought, and adult scaffolding.

Educators further agree that learning mathematics is sequential. Children must acquire certain foundational knowledge and skills before proceeding to the next level. For example,

- A child must count with one-to-one correspondence (enumerate) before doing addition and subtraction.
- Recognizing simple shapes (triangle, rectangle, circle) precedes combining them into complex shapes.
- Understanding *longer* and *shorter* comes before measuring and comparing two or more lengths.

Math curricula differ, however, on how they accomplish this sequencing. One way is to carry out activities in a fixed order, that is, the curriculum is sequenced *across* activities. Every child is expected to participate in the same activity in the same way, moving through the

sequence. This is the model used in most math programs. A second, more effective option is to sequence instruction and learning *within* each activity. In this approach, children at all levels participate together in the same activity, but they engage with the materials and ideas according to their own knowledge and skills. Teachers individualize or differentiate instruction to scaffold each child's learning. Children also observe and learn from one another.

The second model — sequencing math learning within each activity — is the one used in Numbers Plus. This method allows children of different developmental and ability levels to work together in a successful and valuable learning experience. Each activity includes a detailed table with examples of what children at earlier, middle, and later developmental levels may say and do, along with strategies teachers can use to support them.

How Can Math Learning Be Active Learning?

Embedded in the teaching strategies of Numbers Plus are five essential principles of *active participatory learning*: materials, manipulation, choice, child language and thought, and adult scaffolding. These principles, the foundation of the HighScope Curriculum (Epstein, 2007; Hohmann, Weikart, & Epstein, 2008), are also the basis of all good developmental practice. The first three describe the types of learning opportunities adults provide to children. The fourth encourages teachers to observe what children do and say to identify their developmental level. The fifth principle describes what educators typically think of as “teaching,” that is, what adults do and say. Many curriculum models focus only on the teacher's role, without first giving them strategies to understand children's development and maximize individual learning. Numbers Plus does both.

Materials. Active learning programs offer young children an abundant supply of diverse, age-appropriate materials. Taken as a whole, these materials appeal to all the senses and are “open ended.” They lend themselves to being used in a variety of ways and help to expand children's experiences and stimulate their thought. Because preschoolers primarily deal with the world in concrete terms, materials help them pose and answer math questions, for example, sorting and counting collections to determine which group has more.

Manipulation. Young children learn when they handle, examine, combine, and transform materials and ideas. They make discoveries



As children fill cups of different sizes with water and estimate how much each one holds, they are beginning to understand the concept of measurement. A child might, for example, estimate in nonnumerical terms how much a cup holds by saying “It holds a bunch” or “There’s only a little in this one.”

stage of understanding and reasoning. Teachers meet this objective by acting as partners in the discovery process. Young children frequently solve problems using a guess-try-check strategy. Adult scaffolding helps them anticipate outcomes, gather and analyze data, and interpret and apply the findings. This “hypothesis testing” is the scientific process at work! Without adult involvement, the final step — figuring out *why* something does (or does not) work — does not often happen spontaneously in young children.

By using an appropriate early math curriculum, adults can instill a sense of confidence in children that they are mathematical doers and thinkers.

Active learning is consistent with the instructional processes advocated by NCTM (2000; problem-solving, reasoning, communicating, connecting, and representing) and the balanced approach recommended by the National Mathematics Advisory Panel (2008), i.e., neither exclusively child centered nor teacher directed.

Conclusion

Numbers Plus reflects children’s wide-ranging math interests and the strategies adults can use to support math development. Each activity details the “what” and “how” of early math learning: the materials needed, how to introduce the activity, ways to scaffold learning at different developmental levels, how to end the activity, and follow-up ideas for extending math learning in all areas of the classroom and into other parts of the daily routine. In addition, Numbers Plus provides information teachers can share with parents — a workshop and handouts in English and Spanish — on how to support their young children’s early math learning at home. By using an appropriate early math curriculum, adults can engage young children in the joy of discovery, build their knowledge and skills, and instill a sense of confidence that they are mathematical doers and thinkers. ■

Ann Epstein is HighScope’s Senior Director of Curriculum Development.

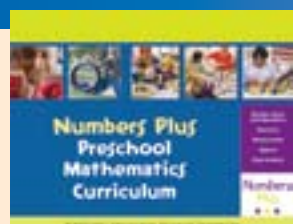
through direct hands-on and “minds-on” contact with these resources. Preschoolers are beginning to develop mental representations of objects and actions (forming images in their minds). Yet they still need to handle materials to experience their properties and see how their own actions bring about change, for example, discovering that two triangles can be rotated and combined to make a rectangle.

Choice. Children who are active learners choose materials from those provided by adults. They change and build on their play ideas, and plan and carry out activities according to their interests, needs, and the challenges presented by teachers and parents. In an active learning setting, adults encourage children to define and solve math problems of interest to them. Exercising choice means making distinctions — determining what one *will (not)* do, choosing materials *because* they help accomplish one’s goals, deciding to use *some or all* of the objects, and so on. Understanding

and using such words and concepts are the underpinning of logic and reasoning.

Child language and thought. Children in active learning classrooms are encouraged to describe what they are doing and articulate their understanding of what they observe. They communicate verbally and nonverbally as they think about (reflect on) their actions and modify their thinking to take new learning into account. Talking helps children shape and clarify their thinking. When adults ask children to reflect (*How do you know...?*) and predict (*Would it be different if...?*), they invite children to make sense of their world. Children also challenge one another’s mathematical thinking. They learn important concepts through resolving discrepancies with peers. For example, if both claim to be taller, they can use measurement to determine who is correct.

Adult scaffolding. “Scaffolding” means adults support children’s current level of thinking and challenge them to advance to the next



Numbers Plus Preschool Mathematics Curriculum

The Numbers Plus Preschool Mathematics Curriculum is a comprehensive set of detailed plans for small- and large-group activities with ideas for extending mathematics learning throughout the program day. A Numbers Plus workshop participant tells us, “Numbers Plus training has taught me that it doesn’t have to be hard or stressful to teach math to my children!”

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Key Components of Effective Preschool Mathematics Instruction

by **Marijata Daniel-Echols**

The recently released National Research Council (NRC) report *Mathematics Learning in Early Childhood: Path Towards Excellence and Equity* (July 2009) provides recommendations for both the mathematics content of what should be taught to preschoolers and the process by which that content is delivered. The starting point for the report is that high-quality preschool math instruction is rare. While this presents a problem for all children in preschool, it has profound implications for poor children. Children living in poverty often enter school with less mathematics knowledge than their peers — and the achievement gap tends to grow over time as they move through the K–12 system. The impact on children at risk for school failure is two-fold: they are not getting adequate math instruction at school and are less likely to get it at home.

The recommendations within the report are designed to provide early childhood educators with clear guidance on how to deliver high-quality math instruction. In 2007, the National Council for Teachers of Mathematics (NCTM) released *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence*, a document that provides information on key math content areas to be mastered by grade level. Building on the NCTM work, the NRC report highlights the concept of “number” and the areas of geometry, spatial thinking, and measurement as the essential content areas that must be addressed in preschool. The report identifies very specific “teaching-learning paths” within each of those areas, specifying the topics that a child needs to know. While the report acknowledges that there is variability within and between children, it maintains that there is a developmental sequence that must guide how topics within larger content areas are taught. For example, within the content area of number, two- and three-year-old children’s mastery of one-to-one correspondence in counting one to three objects precedes their ability to count large sets (1–15 objects) when they are four years old. Thus, learning standards, classroom instruction, and materials should support these learning “pathways.” The report’s authors assert that much of the variability within and between children to move along the “teaching-learning paths” they describe is the result of “differences in opportunities to learn and practice these competencies” (p. 53).



So how do early childhood educators ensure that they are giving children extensive and repeated math experiences? A central recommendation from the report is that there must be time in the preschool day for explicit math instruction. Oftentimes, math concepts are ancillary to other activities. For example, an activity focused on a scientific concept might involve counting, but there is no particular attention paid by the teacher or child to the process of counting. The point is not that math content should not be embedded within other areas. In fact, integrating math throughout the preschool day is supported. However, there must also be intentional math instruction in whole or small groups that use specific techniques to support the mastery of math content.

Intentional math instruction is interactive, conversational, emphasizes children’s ability to understand concepts, uses scaffolding, employs concrete materials and manipulatives, and allows for adult support for the use of technology. A teaching force able to do all of these things must have both professional development supports for their own mastery of content as well as guidance on process. This requires “extensive contact hours and a sustained effort” — that is, the training teachers receive must be grounded in theory, tied to curriculum, delivered by a knowledgeable trainer, and support implementation on an ongoing basis through feedback from mentors and coaches (pp. 8–25).

The report makes an important point in its discussion of teacher professional development, which is that “...a focus on understanding children’s developmental progression in mathematics tied to specific activities through a curriculum is the most salient feature of effective professional development in mathematics” (pp. 8–25). Curriculum matters, specifically, a research-based mathematics curriculum that has as its foundation knowledge of early childhood development as it relates to content, an understanding of the teaching strategies needed to support that development, and activities that can be used to intentionally teach content and provide repeated opportunities for children to practice skills.

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Early Math Learning: Number Sense and Operations

The following activity is excerpted from the Numbers Plus Preschool Mathematics Curriculum.

by Ann Epstein

Cake Cutting

Children cut play dough birthday cakes to learn about dividing and reassembling the whole and its parts.

Time of day:
Small-group time

Suggested earlier activity:
Birthday Cake

Content area:
Number Sense & Operations

Topic(s):
Comparing & Ordering (Quantity),
Composing & Decomposing, Counting

Materials

Materials for each child and teacher:

- Ball of play dough
- Rolling pin
- Plastic knife
- 5–10 birthday “candles” (pegs, twigs, crayons, or other items that can serve as pretend candles)

Shared materials:

- Chart paper and markers

Backup materials:

- Extra balls of play dough and knives
- Extra candles

Beginning

- Tell the children that you like to share your birthday cake with other people.
- Model rolling out your play dough, and say *I want to share my cake with all of you. How many pieces do I need to cut my cake into?* Discuss the children’s ideas.

- Ask for the children’s help in counting the number of people (including yourself) in the group. Cut your cake into equal-sized pieces, and count, with the children, the number of pieces. Put a candle in each piece, and recount the number of pieces and candles, emphasizing one-to-one correspondence.
- Give a piece of cake with a candle to yourself and each child, pretend to eat it, and then remove the candles and roll your play dough back into a ball.
- Give each child a ball of play dough, a knife, and a set of candles. Ask the children how many people they will share their cake with.

Middle

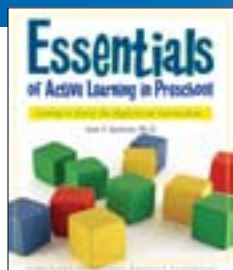
- Ask, *How many people can you give a piece of cake to?* Count the number of pieces together with each child.
- Encourage the children to make more than one cake. Ask questions, for example: *What if there were three people at your birthday party? How would you cut your cake then? Suppose you invited 10 people to your party? How could you give each of them a piece of birthday cake?*

End

- Write the children’s names on chart paper, and record the number of pieces into which they cut their last cake. Talk about who cut their cake into a bigger or smaller number of pieces or the same number of pieces. Order the cakes from biggest to smallest number of pieces (and vice versa).

To support a child in a later developmental range during this activity, an adult might ask for help in cutting a specific number of pieces of cake, saying “I have four people in my family.”

- With the children, rewrap the play dough and sort the candles and knives. Remind them where the materials are stored if they want to use them at work/choice time.
- Referring to the chart paper, send the children to the next activity according to the number of pieces in their last cake: *Whoever cut their last cake into five pieces can put on their coat, Whoever cut their last cake into three pieces....* Continue until all the children have moved to the next activity.



Essentials of Active Learning in Preschool:

Getting to Know the HighScope Curriculum

Essentials of Active Learning presents a comprehensive introduction to the HighScope Preschool Curriculum, covering theory and research, teaching practices, curriculum content, assessment, and training. This book is a must-have whether you are planning to adopt the HighScope Curriculum or are just looking for information on what it takes to have a successful active learning environment.

WC-P1335 \$29.95

Ideas for follow-up

- Serve something that needs to be cut up at snacktime, such as an entire melon. Ask how many pieces are needed, and cut and count them with the children. Ask *What if we want to cut extra pieces for those who want seconds?*
- At snacktime and work/choice time, discuss with the children whether pieces of the things they divide are the same size or not. Discuss which are bigger, smaller, or the same size, and ask them how to make the portions fair (the same size).
- Related activities: 9. Counting Candles, 10. Counting Shapes on Pizza, 16. Going Shopping, 30. Roll of the Dice, 36. Too Many or Too Few Bears ■

Ann Epstein is HighScope's Senior Director of Curriculum Development.



As they do activities related to number sense and operations, children learn number words and symbols, counting, combining and dividing (composing and decomposing), and addition and subtraction.

Developmental range: Supporting children at different levels

Earlier

Children may

- Explore rolling dough, using the knife, or sticking candles in dough.
- Say they have the most pieces regardless of the actual number.
- Refer to pieces of cake non-numerically, (e.g., *I made lots of pieces*).
- Compare visually (e.g., say four pieces of cake spaced far apart are more than four close together).

Adults can

- Talk about whether children cut cake into a bigger or smaller number of pieces than their (adults') cake.
- Put a candle in each piece of cake to emphasize oneness and twoness, etc.
- Align pieces in a cake to children's pieces of cake to encourage comparison.
- Put three pieces of cake close together and count them together. Put three pieces farther apart and ask the children, *How many now?* Count together.
- Ask which piece children want. Talk about whether a piece is bigger, smaller, or the same size as the other piece.

Middle

Children may

- Cut a different number of pieces than they want to serve.
- Eyeball (visually estimate) the number of pieces.
- Count but make mistakes in counting.
- Not state the last number counted as the total.
- Put one candle in each piece of cake.
- Compare but not by how many (e.g., *Sam cut four pieces and I made five so I got more*).
- Cut cake in unequal-sized portions.

Adults can

- Model counting strategies: Touch or point; move cake piece aside after counting.
- Emphasize that the last number is the total: *1, 2, 3, 4. You cut four pieces of cake.*
- Ask the children to compare the number of pieces in their cakes.
- Ask if all pieces are the same size. If not, ask what children could do about it.
- Ask if children want to write the number of pieces on the chart. Take dictation or write the number for children to trace or copy.

Later

Children may

- Count candles and pieces of cake correctly; include themselves in total (e.g., *Five friends and one for me, so six pieces*).
- Compare and order three or more cakes with different numbers of pieces.
- Cut cake into equal-sized portions.
- Reassemble cake into a whole. Count pieces in both configurations.
- Dictate/write the number of pieces on chart.

Adults can

- Use the wrong number of candles, and ask the children to help put in the correct number.
- Ask for help cutting a given number of pieces.
- Partially reassemble a cake. Ask the children how many more pieces to make it whole.
- Ask, *What if two more children joined the group? How many pieces would we need?*
- Pose problems with more than 10: *Can you help me cut the cake if I invited 12 to my party?*
- Ask, *What if I wanted to give each person two pieces of cake?*

You're Not My Friend Anymore!

From *You're Not My Friend Anymore! Illustrated Answers to Questions About Young Children's Challenging Behaviors*, by Betsy Evans (see Catalog, p. 12 for more details)

What If...?

A child picks up a toy or a chair and throws it, or a child scratches a friend when he doesn't get what he wants. Shouldn't these actions lead to a time-out for that child? Aren't there certain behaviors that require strong action from the adult so that the child learns these behaviors are unacceptable and must stop?

I Hate This Car!

A Typical Situation and Response...



What Happened Here?

When the child threw a car, the adult's initial (and appropriate) response was to stop the behavior. This was followed by a time-out, removing the child from the scene where she could not hurt others. However, this approach solved only part of the problem. It still wasn't clear why the child was upset to the point of throwing a car. Young children will be physical when upset — they don't yet know how to *say* what they feel or *describe* what they need. Adults make things worse by punishing *the child* instead of responding to his or her feelings and needs. Unrecognized angry feelings and unmet needs may lead to another, more dangerous action — in this case, throwing the chair during time-out.

If you find yourself in a situation like this, consider these strategies:

INSTEAD OF...

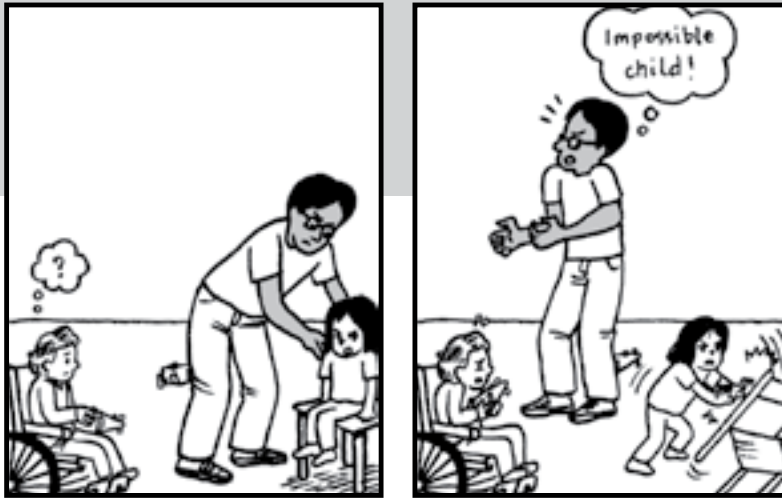
Instead of assuming that the child is being "bad" and punishing her,

Instead of ignoring the child's upset feelings,

TRY THIS...

▶ Quickly and calmly get on the child's level and set limits on the action (throwing) that is unsafe.

▶ Name those feelings, using a nonjudgmental tone.



**What is the reason...
...that time-out and other punishment strategies have been discredited
by early childhood specialists?**

Children are active explorers and active communicators; they learn best — and express most of their feelings — by *doing*. When young children are annoyed by a toy, they will probably show their annoyance through an obvious action and/or by making a loud noise. Adults need to stop children when they do unsafe things while also remembering that it is generally not the child's *intention* to be unsafe.

The latest guidelines for developmentally appropriate practice published by the National Association for the Education of Young Children (Cople & Bredekamp, 2009) emphasize reasoning together with children rather than reacting to their violations of rules with harsh discipline. Problem solving works because preschoolers are increasingly capable of expressing their needs and wants — and eventually their feelings — in words, as they develop an understanding of the consequences of their actions. In contrast, ineffective strategies include “punishing unacceptable behavior, refereeing disagreements, and repeatedly putting the same children in time-out or disciplining them in other ways unrelated to their actions” (p. 159). A time-out for inappropriate behavior may have little effect because it is not related to the underlying problem, fails to acknowledge and help children express their feelings, and does not help the child learn to problem-solve in a safe and collaborative way.

A problem-solving response to the same situation:



What Happened Differently This Time?

In this problem-solving approach, the adult quickly stopped the child's unsafe behavior. By getting on the child's level, the adult was less threatening. Since the child didn't feel frightened or shamed by the adult, she was more able to listen when that adult set limits by saying *Throwing toys needs to stop. That might hurt someone*. This helped to make clear that the adult disliked the action of *throwing toys*, not the child or her feelings. The adult also gave reasons for the limit. A logical rather than punitive consequence then became possible: a problem-solving negotiation is a logical consequence. After initially setting limits, the adult began the problem solving by insisting on an agreement that throwing would stop. The problem solving that followed provided an active learning opportunity for both children. The adult understood the frustrated child's point of view, knowing that she did not intend to be "bad." With adult support and lots of practice, her impulse to "act out" frustration will eventually be replaced by the ability to *say* she is frustrated and that she has a problem.

Adults can be most helpful to children if they are calm themselves. In order to stay calm, parents and teachers can remind themselves that their children are not "bad," they just need new skills.



Something More to Consider...

As we react to young children's behaviors, it is important to consider how children learn best and what motivates them to stick with something until they have learned it. Can children actually *learn* in a time-out chair? If you wanted to learn a new language, how long would you need to sit alone in a chair (sorry, no language tapes allowed...)? Clearly, learning requires much more support than time-out chairs have to offer.

So let's think about how we *all* learn. Consider one of your own skills (e.g., cooking, singing, etc.). How did you become skilled? What motivated you to stay with an activity until you did it well? It is very likely that you acquired *confidence in your skills* because you were *enjoying yourself while making choices, doing something of personal interest, and experiencing success*. These are the five factors of *intrinsic motivation*, and they help all learners to develop long-term skills.

As we consider motivation factors, it is important to notice that fear and shame are not included. Children do not learn well when they are afraid of adults or sense that adults think poorly of them. Strong self-esteem is one of the most important ingredients needed to succeed as a learner. All children will make mistakes as they grow and learn (as adults do as well). If we are patient and give them time to practice new skills, they will indeed become successful problem solvers.

Stop, Think, & Discuss...

Think of something you tried to learn recently, such as a second language or a new hobby. How much time did it take you to become more confident? List the things that helped you to learn a new skill. Did you need someone to punish you for your errors? Or did factors such as developing confidence, enjoyment, success, and support make it easier to learn?

Forging Research Partnerships

Connecting Research to Practice is the Foundation of Data-Driven Decision Making

by Marijata Daniel-Echols

Over the past several years, as program accountability pressures have mounted and federal research dollars have been funneled towards preschool curriculum research, early childhood professionals have had to become more research literate. In particular, program administrators and staff members are now more fluent in the languages of research and assessment. For example, terms like *scientifically based research*, and *valid and reliable assessment*, are common points of reference between researchers and their project program partners. In that context, the ability of researchers to work in partnership with practitioners and report results in ways that are useful to their program partners has also grown in importance.

In 2007, the National Association for the Education of Young Children (NAEYC) and the Society for Research in Child Development (SRCD), with the support of the Johnson Foundation, which provided the Wingspread conference site in Racine, Wisconsin, convened a meeting of researchers and early childhood professionals. The goal was to develop a set of “action-oriented” recommendations for making research-based knowledge available to early childhood practitioners in ways that would be usable for them and ultimately lead to improved outcomes for children, especially those at-risk. The 25 recommendations that came out of the conference were divided into five main themes: develop infrastructures that require partnering between researchers and practitioners; increase the knowledge base of effective teaching strategies and their implementation; focus on professional development; encourage collaboration among existing early childhood institutions; and strengthen communication of information about child development to practitioners, families, and policymakers (NAEYC & SRCD, 2008).

HighScope’s Research Tradition

Many of the goals highlighted by the NAEYC & SRCD collaboration are realized everyday in HighScope’s applied research and program evaluation work. As a research and development organization, HighScope occupies a unique space in the field of early childhood education. Our professional development programs and curriculum materials benefit from a

strong research tradition, and our researchers are able to situate theory within the context of practice. While HighScope’s grounding in research undergirds our curriculum content and materials, the work of our research team also supports continual improvement of policy and practice in many programs and settings that do not necessarily use the HighScope Curriculum. Specifically, program evaluation projects funded through federal, state, and private funds serve as pathways to discussions with program stakeholders and decision makers.

HighScope is grounded in a strong research tradition, and our researchers situate theory within the context of practice.

HighScope’s ability to bridge the space between research and practice starts with putting together a research team that has theoretical and statistical expertise as well as real-world classroom experience. HighScope’s researchers have diverse academic backgrounds in fields such as child development, developmental psychology, public policy, special education, and others. Many of those same staff members also have a range of practitioner experience as teacher educators, professional development trainers, preschool teachers, and in child care center administrators.

This dual understanding of research and practice is brought to bear each time a new project begins. The first step is always setting out to build a partnership with program stakeholders, such as administrators, teachers, parents, and policymakers. In the case of our work evaluating state-funded preschool programs for the Michigan Department of Education and South Carolina’s Office of First Steps, for example, this has meant meeting with government employees, program administrators, and political appointees to establish clear expectations for the focus and ultimate uses of the evaluation work.

A strong collaboration between the research team and the program partner increases the

likelihood that problems that arise during the project will be resolved and that at the end of the process the program partner comes away with a clearly described summary of its strengths and an actionable delineation of its challenges. This is done by the research team and the program partner coming together to identify the goals of the program, comprehensively describe the intervention, curriculum, or set of services in place to achieve those goals, and specify the attainable, measurable outcomes of interest. For example, one partner wanted to collect data on a preschool in which it had invested funding for teacher training and classroom equipment; specifically, the organization was interested in data that would show positive outcomes related to children’s school readiness and student achievement in elementary school. Our research team first encouraged our partner to avoid measuring child outcomes out of context. In this case, as in all of HighScope’s evaluation work, we stressed the importance of also measuring other variables that might affect those outcomes, such as child and family background characteristics, preschool program quality, and teacher beliefs and practices.

Rewards of Partnership

HighScope’s researchers help our partners clarify their logic model — that is, their theory about how the specific components of their program lead to achieving the stated goals of the program and desired outcomes for program participants — and prioritize the kind of information they want to get from the evaluation process.

Once the research findings or evaluation report is finished, HighScope often is then invited by our partners to stay on as consultants. Examples of the work we do with our partners in that role include developing strategies to explain research findings to stakeholders, presenting research to the larger academic and practitioner community, and designing new data collection and/or management systems. The transition from evaluator to consultant is predicated upon the building of a research and practice partnership. At that place where research and practice meet, data-driven decision making can then change the field for the better. ■

Marijata Daniel-Echols is HighScope’s Research Chair.

Me, Teach Math? I Can't Do Math!

SCAFFOLDING TEACHER'S MATH LEARNING WITH NUMBERS PLUS PROFESSIONAL DEVELOPMENT

by Beth Marshall



Just as teachers scaffold children's learning, the Numbers Plus trainer starts at the teacher's level before offering gentle nudges into new understanding. Above, Beth Marshall at HighScope's International Conference, May 2009.

HighScope's Numbers Plus Curriculum kit and activities are easy to understand and easy to use. So why should someone invest in training on Numbers Plus? During the research phase of Numbers Plus, we found that while some early childhood teachers love math, the vast majority have negative feelings about math based on their early experiences in school. Some teachers are even "mathophobic" and identify themselves as people who "can't do math." Numbers Plus professional development training is designed to scaffold teachers' math learning so that they come to recognize that they *can* do math and support children's early math learning in the process.

Scaffolding Teachers' Math Learning

Just as teachers scaffold children's learning, the Numbers Plus trainer starts at the teacher's level before offering gentle nudges into new understanding. That means trainers acknowledge participants' frustrations and negative feelings about math, but we also connect math to activities in our everyday lives that require math skills: for example, estimating how much farther one can drive before getting more gas in the car, measuring ingredients when cooking,

balancing the checkbook, and packing a suitcase for a trip. Once we agree that math is already an important aspect of our daily lives and activities, we examine our negative feelings about the subject more closely. Typically, training participants trace these feelings back to early school experiences and the fact that math concepts were often presented by teachers in the *abstract* with unfamiliar vocabulary rather than through the use of concrete materials and everyday accessible language.

Preschool Math $\neq -1/a \cos(ax + c)$

Next, the training delves deeper into math concepts at a preschool level. Teachers spend time learning about each of the five math content areas (number sense and operations, geometry, measurement, data analysis, and algebra) and their corresponding topics through a variety of hands-on activities, small-group discussions,

and interactions with the surrounding environment. For example, participants learn about composing and decomposing (combining and dividing) — a topic in the number sense and operations content area — using pennies. They solidify their understanding of shapes by finding isosceles triangles, rectangular prisms, and things with vertical symmetry by going on a shape hunt around the training space. Once the teachers themselves have a solid understanding of preschool math, the training then looks at how to share these ideas appropriately with young children.

Scaffolding Children's Math Learning

Embedded in each of the one hundred and twenty Numbers Plus activities are specific strategies teachers can use to provide scaffolding (or differentiated instruction) to individual children at their level of development (See Teacher's Corner, p. 10). These strategies include conversing with children about math and asking questions to acknowledge and extend children's efforts (e.g., *You put lots of buttons on your pizza. Let's see how many*); providing and encouraging children to use materials and tools appropriate to each content area (e.g., sorting baskets, geometric shapes,

Teacher Feedback

"I'm just no good at math, so how will I ever be able to teach it to my children?"

— *Numbers Plus training participant*

"Thank you for making a subject I didn't like in school one that is a lot easier to teach. Now I want to teach my kids that math can be fun and is all around us, not only in the classroom!"

— *Participant in the Numbers Plus Research Project*

"Geometry used to terrify me, but now I get really excited to do a small-group or a transition activity based on this area."

— *Participant in the Numbers Plus Research Project*

"Now I feel more confident in all the different areas of math, not just counting."

— *Participant in the Numbers Plus Research Project*

"This was useful in many ways, especially in giving me great ideas on how to teach math during small-group time in a way that benefits children at all developmental levels."

— *Participant in the Numbers Plus Research Project*

"I am very confident now in my skills for supporting math learning. Before I took this class, this was not the case. It gave me the tools to be a better teacher of math for preschool children."

— *Participant in the Numbers Plus Research Project*

"Great training!...It really gave us a way to share with others what we were struggling with or what we were learning. It was great to meet new people and learn about math in a very 'nonscary' way."

— *Online workshop participant*

counting animals); encouraging children to define and solve math problems; and participating as a partner with children in their activities and learning process.

In the Numbers Plus training, a good deal of time is spent helping teachers learn to use these strategies. In the traditional (face-to-face) workshop, participants analyze a Numbers Plus activity in depth, identifying the developmental ranges addressed in the examples and the corresponding adult scaffolding strategies (which support current levels of thinking as well as

Math really is everywhere, but math learning doesn't just "happen." Adults must actively and systematically engage children in the process.

offer gentle extensions into the next stage of understanding and reasoning). Participants then read sample scenarios of math-related small-group times and determine if the teacher is applying scaffolding strategies or not. If participants determine that the teacher in the scenario is not scaffolding, they write out what the teacher could have done differently to more effectively scaffold children's math learning. Finally, participants role-play a Numbers Plus

activity, practicing how to work with children at different developmental levels. This practice helps teachers readily identify children's development levels and become competent in using the suggested scaffolding strategies.

Training Options

Numbers Plus training is available as either a two-day on-site workshop or as a six-week online training. No matter which method of delivery, each participant will receive a certificate for six clock hours of professional development (or 0.6 CEUs) upon successful completion of the course. The on-site workshop is an attractive option for getting all staff up and running with Numbers Plus in a relatively short period of time. The online training includes all of the same content as the on-site workshop. An advantage of the online training is that staff can learn and apply a little bit at a time. For example, participants can spend a week on one content area, such as geometry, and can actually try out a related activity (e.g., Marshmallow Shapes, Let's Dance, etc.) with the children in their classroom. They can then share their experience and what they learned in the online classroom and get helpful feedback and suggestions from their peers. The next week, they go on to tackle another content area.

Math Learning Everywhere!

Whatever training option participants choose, they all ultimately apply their new knowledge about preschool math to their classroom setting. They look at each of the main content areas and topics and rethink their classroom materials in light of how each lends itself to children's math learning. Discussing gaps and problem-solving solutions, they leave Numbers Plus training with new ideas about free, found, or low-cost materials that will support children's math learning in all areas of the classroom.

Math really is everywhere, but math learning doesn't just "happen." Adults must actively and systematically engage children in the process, encouraging them to work with materials, pursue their own investigations, and draw conclusions. When teachers really understand the concepts behind the Numbers Plus activities, they can then use the appropriate strategies to scaffold children's early math learning and help them actively construct mathematical knowledge. ■

Beth Marshall is HighScope's Interim Director of Early Childhood.

An advantage of HighScope's Numbers Plus online training, which runs for six weeks, is that staff can apply what they're learning in their classrooms and get immediate and helpful feedback from other workshop participants.

The screenshot displays the HighScope Numbers Plus Online Workshop interface. On the left, there are navigation menus for 'How to Use It', 'Profile', 'Module Menu', and 'Administration'. The main content area is titled 'Topic outline' and contains a welcome message: 'Welcome to the HighScope Numbers Plus Online Workshop! This course is 6 weeks long (2 weeks if you include the registration week). Each week asks you to study to the following topics...'. Below this, there is a section for 'Registration Week' with a video thumbnail showing a teacher and a student. The interface also includes a 'Module Menu' on the right with links for 'Course Outline', 'Feedback', and 'Helpdesk'.



Steps Into Training

INTRODUCING TWO NEW COURSES FROM HIGHSOPE

by Gavin Haque



Participants in HighScope training workshops get the tools they need to successfully implement the HighScope Curriculum. Step by Step is a new training option that can be tailored to individual program goals and budgets.

One of HighScope's greatest contributions to the field of early childhood education is sharing its discoveries, knowledge, and expertise with educators who want to incorporate into their programs the same practices and strategies they see in HighScope classrooms. To support teachers in this endeavor, HighScope continues to serve more than 5,000 teachers and program administrators with its two-day workshops, five-day workshops, customized training, online courses, Preschool Curriculum Course (PCC), Training of Trainers (TOT) Course, and its Combined Preschool Curriculum and Training of Trainers Course. As a result, HighScope indirectly serves 100,000 students in twenty-one countries and territories.

Numbers Plus Early Mathematics Curriculum

In 2006, HighScope received a grant from the United States to develop an early childhood mathematics curriculum. From that effort, HighScope developed Numbers Plus, a curriculum consistent with standards of the National Council of Teachers of Mathematics (see related article, p. 5). Numbers Plus provides user-friendly guidelines and strategies to use during

small-group times in classrooms that use the HighScope Curriculum. Strategies from Numbers Plus are also appropriate for use during parts of the daily schedule in programs that utilize other early childhood curricula.

To accompany the introduction of the Numbers Plus Curriculum, HighScope offered and received glowing reviews for the very first Numbers Plus workshop at its May 2009 annual spring conference in Ypsilanti, Michigan. Like all of HighScope's courses, this workshop is offered on site, at HighScope headquarters in Michigan, or online for those who are unable

to attend an on-site workshop. (For more information on workshop content, see related article, p. 17). Tuition for two-day workshops starts at \$240 per participant. Tuition for the online Numbers Plus workshop is \$190 per participant plus \$25 for course materials.

HighScope is currently scheduling online Numbers Plus workshops and ten on-site workshops beginning this fall. Watch for a course coming near you. To reserve a space in the Numbers Plus workshop, or to learn about scheduling a workshop, please visit www.highscope.org or, contact Educational Services at 734.485.2000, ext. 218.

HighScope Step By Step

As noted above, the HighScope Curriculum is utilized in thousands of programs worldwide. Its success in helping children experience positive outcomes is documented in numerous Head Start Programs, public school pre-K programs, early childhood inclusion programs, corporate child care centers, private child care programs, dual-language programs, family child care homes, and many state-sponsored prekindergarten programs. In fact, HighScope colleagues from the State of Georgia announced that the one-millionth student will enroll in Georgia's

Continued on page 22

Training

@HighScope

Workshops —

Learn more about the HighScope educational approach by attending workshops, customized training, HighScope Regional Conferences, or the HighScope International Conference. Topics include all the major elements of the HighScope approach — active learning, adult-child interaction, the daily routine, HighScope key developmental indicators, and assessment using the Child Observation Record (COR).



Courses —

Designed for more in-depth curriculum training, courses range from one week to seven weeks in length. They include curriculum training designed for teachers and administrators and adult training courses designed to prepare participants to be HighScope trainers.

Advanced Courses —

Recommended for those who have taken the HighScope Curriculum and/or Training of Trainers (TOT) courses. These courses offer in-depth, sophisticated work with **content areas**, such as literacy, mathematics, science, visual arts, movement and music, the Preschool Child Observation Record (COR), and the Preschool Program Quality Assessment (PQA). They also cover a wide range of **processes**, such as mentoring, evaluation, and working with children and adults in full-day programs and multiage, bilingual, and intergenerational settings.

For more information on HighScope's Teacher, Trainer, and Program Certifications, please visit our Web site at highscope.org

Online Courses

- Numbers Plus, \$220/person
- Intentional Lesson Planning, \$75/person
- Assessing Preschool Program Quality Using the PQA, \$125/person
- Child Observation Record (COR), \$240/person
- HighScope's Child Planning and Recall Process, \$125/person
- Work Time, \$125/person
- Small-Group Time for Active Learners, \$125/person
- Large-Group Time for Active Learners, \$125/person

Watch highscope.org for dates!

Spotlight on Training from HighScope

New Course from HighScope

HighScope is for Elementary-Age Students Too!

- Kindergarten Teachers
- Primary Grade Teachers
- Principals
- Child Care Staff
- Curriculum Specialists
- Mentor Teachers

Wondering what happens to pre-K children when they enter big school? HighScope now offers a workshop that examines the HighScope Curriculum in elementary grade classrooms. Discover what plan-do-review looks like in a K–3 classroom, learn how to plan meaningful content workshops, and gain practical ideas for setting up a learning environment that meets local, state, and regional guidelines and HighScope principles.

Tuition: \$500/person

Contact HighScope today to schedule a course in your area. Full Scholarships are available for host agency's staff.

Customized Workshops by HighScope

Classrooms and child care programs are unique. HighScope staff is available to visit programs and provide classroom observation, feedback, and mentoring. One HighScope staff member can visit and provide support for two to three classrooms per day. Strengths and opportunities identified in these sessions help drive curriculum and training plans for teachers and supervisors. With input from teaching staff, parents, and others, HighScope can design a course agenda to deliver to fifteen workshop participants. Fees for customized services are \$1,200/day plus travel expenses.

WORKSHOPS

Summer 2010

HighScope offers the following workshops and courses at the foundation's headquarters in Ypsilanti, Michigan. Workshops provide examination and discussion about a specific component of the HighScope Curriculum. Training Courses provide teachers with all of the technical assistance to fully implement the curriculum and to build the capacity to provide ongoing support to their colleagues.

Introduction to the HighScope Curriculum for Infants and Toddlers

This week-long workshop is designed to provide teachers with an overview of the successful HighScope Curriculum for Infants and Toddlers. This is a perfect opportunity for Early Head Start teachers, Head Start teachers, program administrators, and parents.

IN543 • July 12–16 or August 23–27, 2010
\$500/person

Introduction to the HighScope Curriculum for Preschool Teachers: Basic Principles and Strategies

This workshop provides teachers with a one-week overview of the components of the HighScope Curriculum. Discussion will focus on curriculum content areas, valid and reliable assessment, the HighScope daily routine, team building, effective adult-child interaction strategies, and more.

IN511 • June 21–25 or July 26–30, 2010
\$500/person

Preschool Child Observation Record (COR)

This workshop provides teachers with background, knowledge, and practical applications of the COR. The Preschool COR focuses on children's everyday activities rather than isolated tasks used in standardized school readiness and achievement tests.

WK513 • July 12–14, 2010 • \$340/person

New Course!

Analyzing Data and Making Classroom Plans with the Child Observation Record (COR)

Teachers who are already familiar with the COR and/or have taken training on the COR learn more about "driving" instruction based on observation-based assessment. In this workshop, teachers and HighScope staff will work together to develop plans based on data obtained from the COR and input from colleagues.

WK513A • July 15, 2010 • \$110/person

Introduction to HighScope's Growing Readers Early Literacy Curriculum

The Growing Readers Early Literacy Curriculum (GRC) is a comprehensive set of detailed plans for more than 90 teacher-led small-group activities and accompanying children's book collection. The activities actively engage and instruct young children in literacy comprehension, phonological awareness, alphabetic principle, and concepts about print. In this workshop participants will learn how to use these materials effectively to help children build new knowledge and literacy skills. The *Growing Readers Early Literacy Curriculum* is available for \$474.95/classroom.

WK610 • July 20–21 or August 10–11, 2010
\$225/person

New Course Numbers Plus Early Mathematics Curriculum

The *Numbers Plus Early Mathematics Curriculum* is a collection of 120 activities that promote development of skills in numeracy, measurement, geometry, algebra and data analysis. Aligned with the National Council on Mathematics, *Numbers Plus* is a comprehensive set of detailed plans for small- and-large group activities. The *Numbers Plus Early Mathematics Curriculum* is available for \$274.75/classroom.

WK623 • July 22-23 or August 12-13, 2010
\$225/person

Education Through Movement Summer Training

This training will be held at the Florida FFA Leadership Training Center in Haines City, Florida. For more information, please visit highscope.org or call Karen Sawyers at 734.485.2000, ext. 224.

Registration deadline: April 1, 2010
MM001 • June 6–12, 2010 • \$975.00/person
(includes tuition, lodging, and meals)

TRAINING COURSES

New Course HighScope Infant-Toddler Curriculum Course

Appropriate for caregivers, teachers, and teacher-trainers, this comprehensive course is designed to improve both staff skills and overall program quality. In-depth discussion occurs with the following topics: creating a supportive environment, establishing and managing an effective daily schedule, observation and

assessment, assessing program quality, and working with colleagues and parents.

TE530 • \$2,025/person • June 15–18 and June 21–25 plus eight days (to be announced) in Summer 2011.

Preschool Curriculum Course (PCC)

(Conducted over two summers)

The four-week Preschool Curriculum Course is designed to prepare teachers and caregivers to implement the HighScope Curriculum in their early childhood programs. **\$3,135/person**

Week 1

Fundamentals in the HighScope Preschool Curriculum

TE511 • August 2–6, 2010

Week 2

Children in the HighScope Preschool Environment

TE512 • August 9–13, 2010

Weeks 3–4

Summer of 2011

Training of Trainers (TOT)

(Conducted over two summers)

Prerequisite is the Preschool Curriculum Course or equivalent.

The three-week Training of Trainers course is designed for those who have already completed extensive training in the HighScope Curriculum and wish to extend their skills to training adults in the educational approach. The course is held over two summers at the HighScope Foundation headquarters in Ypsilanti, Michigan; two weeks the first summer and one week the second. Those successfully completing the course earn certification as HighScope Trainers with an endorsement in the HighScope Preschool Curriculum. **\$3,960/person**

Week 1 Developing and Presenting Workshops

TR515 • July 19–23, 2010

Week 2 Observation/Feedback

TR516 • July 26–30, 2010

Week 3

TR517 • Summer 2011

For more information on HighScope's professional development options, customized on-site training, or certification, please contact Gavin Haque at 734.485.2000, Ext. 218, or via e-mail at training@highscope.org, or visit our Web site at highscope.org.

To register for training, call 734.485.2000, Ext. 234, fax 734.485.4467, or register online at highscope.org.

HighScope Step By Step

Step 1: Building Awareness

The Step 1 Training sessions provide three days of discussion and instruction focused on active versus passive learning, how children learn, and how HighScope teachers apply adult-child interaction strategies. Tuition is \$580 per person for a minimum of twenty staff. Agencies with smaller audiences are charged a fee of \$2,200 per day plus HighScope staff travel expenses.

The Step 1 Resource Library includes

- *Essentials of Active Learning in Preschool* (book)
- *The HighScope Daily Routine* (DVD)
- Daily Routine Cards
- *From Message to Meaning* (book)
- *Tasty Talk: 40 Mealtime Conversation Starters* (cards in metal lunchbox)
- *Lesson Plans for the First Thirty Days* (book)
- *Letter Links* (book)
- Adult-Child Interaction Posters
- "I Know What's Next!":
Transitions Without Tears of Turmoil

\$240.55

Step 2: Building Knowledge

Step 2's training sessions provide three days of discussion and instruction on setting up the indoor learning environment and defining planning and recall times, and offers an introduction to all of the components of the HighScope Curriculum. Tuition is *\$580 per person for a minimum of twenty staff. Agencies with smaller audiences are charged a fee of \$2,200 per day plus HighScope staff travel expenses.

*Participants may take Planning and Recall Time online for \$145, which reduces the overall fee to take the other workshops in Step 2 to \$435.

The Step 2 Resource Library includes

- Key Developmental Indicators (KDIs) Chart
- Classroom Area Signs (large size)
- *The Indoor and Outdoor Learning Environment* (DVD)
- *Real Science in Preschool* (Teacher's Idea Book)
- *Educating Young Children* (book)

\$147.76

Step 3: Applying Knowledge

Step 3's training sessions provide four days of instruction around observing children and making plans, creating interesting and effective small-group time and large-group time activities, writing anecdotes, and assessing a program's effectiveness. Tuition is *\$770 per person for a minimum of twenty staff. Agencies with smaller audiences are charged a fee of \$2,200 per day plus HighScope staff travel expenses.

*Content on Small-Group Time and Large-Group Time are available as online courses for \$145 per person per course. Participants who complete both courses online reduce the fee for remaining coursework in Step 3 to \$480.

The Step 3 Resource Library includes

- *80 Activities for Small Groups* (Explore and Learn Quick Cards)
- *Small-Group Times for Active Learners* (DVD)
- *50 Activities for Large Groups* (cards)
- *Large-Group Times for Active Learners* (DVD)
- Classroom Area Signs for Planning and Recall (small size)
- *The Song Book* (book)
- *"I'm Older Than You, I'm Five": Math in the Preschool Classroom* (Teacher's Idea Book)
- *Fee, Fie Phonemic Awareness* (book)
- *Preschool Program Quality Assessment (PQA) Starter Pak*

\$246.45

Step 4: Advanced Study

The Step 4 professional development program is six days of study, covering Art, Science, Social-Emotional Development, Language and Literacy, Math, and Movement and Music. Tuition is \$1,170 per participant for audiences of 20 or more. Agencies with smaller enrollment are charged \$2,200 per day plus HighScope staff travel expenses.

The Step 4 Resource Library includes

- *Storybook Talk* (book)
- *Movement in Steady Beat* (book and CD)
- *Rhythmically Moving 1-4* (CDs)
- *Let's Talk Literacy* (book)
- *Preschool Readers and Writers* (book)
- *Growing Readers Early Literacy Curriculum*
- *Me, You, Us: Social-Emotional Learning in Preschool* (book)
- *Small-Group Times to Scaffold Early Learning* (book)

\$695.45

Step 5: Specialized Focus

Tuition is *\$940 per person for five days of service for groups of twenty or more. Agencies with smaller enrollment are charged \$2,200 per day plus HighScope's travel expenses.

*The Child Observation Record is available as an online course with tuition of \$240 per participant. Participants completing the online course need only pay \$700 for Step 5 workshops.

The Step 5 Resource Library includes

- *"You Can't Come to My Birthday Party!": Conflict Resolution With Young Children* (book)
- *Moving Past Praise* (DVD)
- *Child Observation Record (COR)* (preschool assessment system)
- *The Essential Parent Workshop Resource*

\$330.70

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Pre-K program this year. This is significant as the HighScope Curriculum is the very first early childhood curriculum that Georgia adopted for use in its Pre-K program.

Training, of course, plays a huge role in successful implementation of the HighScope model. But with the downturn in the global economy, a shortage of qualified substitute teachers, and a calendar that is overloaded with meetings, audits, and school events, many teachers and programs raise the inevitable question, *How can we afford training?*

Starting With the Basics

In response, HighScope has developed a new program called Step by Step (see sidebar left). Similar to the Preschool Curriculum Course, HighScope Step by Step provides the "basics" to help teachers get started while allowing the flexibility of participating in coursework when resources are plentiful. Step by Step is also a resource library. Acquiring the Step by Step library and/or coursework is just as effective if completed in one year, two years, or over a long period of time.

Teachers can move through Steps 1 through 3 in succession or in a sequence of their own choosing.

HighScope's Step by Step course consists of ten days of instruction which are divided into three segments (Steps 1-3). Once staff have completed these basic steps, they can move to Step 4 (Advanced Study) and Step 5 (Special Focus). Teachers can move through Steps 1-3 in succession or in a sequence of their own choosing. Yet another choice is for programs to talk to HighScope about "unbundling" and designing a course based on an agency's individual needs.

In other words, HighScope offers more than one way to get started with our educational model. Teachers can acquire Step by Step resource materials, participate in Step by Step training courses, or both. Watch for Step by Step in your community. Or, contact Educational Services to bring this brand new course to your community. ■

Gavin Haque is HighScope's Director of Educational Services.