Next Generation Preschool Math
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Project Goals
We propose to address the critical need for high quality early childhood mathematics education by developing a multi-media curriculum supplement.

We will investigate if and how engagement with activities in this media-rich, curriculum supplement improves low-income preschoolers’ early learning of number and equi-partitioning.

We seek to create a curriculum supplement that:
• promotes children’s understanding of subitizing and fair sharing (equi-partitioning),
• uses interactive media on touch-screen tablets,
• integrates new multi-touch activities with existing hands-on activities;
• enhances opportunities for learning with interactive media through shared use with adult guides and peers; and
• provides professional and technical support materials for preschool educators.

Project Timeline
Year 1 (Summer 2011-Fall 2012)
• Develop and test student materials
Year 2 (Fall 2012-Fall 2013)
• Develop and test Digital Teacher Guide and student supports
Year 3 (Fall 2013-Winter 2014)
• Conduct field trial to test the impact on students and teachers
Year 4 (Winter 2014-Summer 2015)
• Analysis and dissemination

The NGPM Curriculum
• Developed through a collaboration between the development team at WGBH and the research team at EDC & SRI
• Units will
  • blend digital and non-digital activities, and
  • integrate individual, paired, small group, and whole-class activities.
• Digital Games (iPad)
  • 2 Self-leveling digital games per unit
  • 1 Collaborative digital game per unit
  • 1 Digital Sandbox activity per unit
• Non-digital Classroom Activities
  • Priming activities per unit
  • Action songs and fingerplays per unit
  • Read-aloud books per unit
  • Transition or priming per unit
  • Learning center activities per unit
  • Playground and snack activities per unit

Formative research seeks to determine:
• what features of the activities help students understand the mathematics and
• what behaviors indicate student understanding of mathematical concepts.

Our approach to development integrates previous research findings with formative research to inform the design process. Integral to the process is evidence-centered design.

We borrow from the Evidence-Centered Design (ECD) to:
• provide a conceptual framework for developing the units,
• facilitate collaboration within our multi-disciplinary team, and
• ultimately, create a cohesive argument linking the targeted mathematical content to the resulting curricular activities.

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Design & Research Loop

Next Generation Preschool Mathematics - Logic Model

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