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 equipartitioning.

We seek to create a curriculum supplement that:

- promotes children's understanding of subitizing and fair sharing (equipartitioning),
- uses interactive media on touch-screen tablets,
- integrating 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

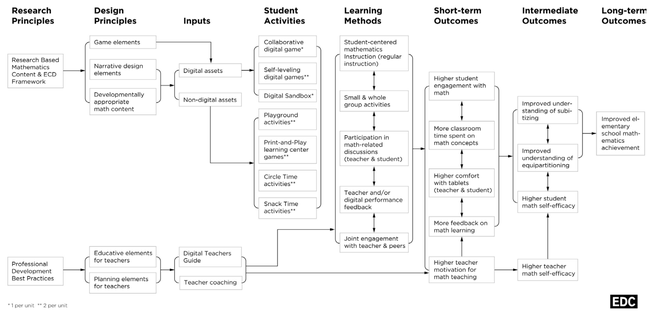
Year 3 (Fall 2013-Winter 2014)
- Conduct field trial to test the impact on students and teachers

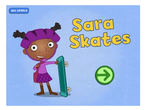
Year 4 (Winter 2014-Summer 2015)
- Analysis and dissemination

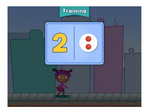
The NGPM Curriculum

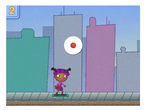
- Developed through a collaboration between the development team at WGBH and the research team at EDC & SRI
- Units will
  - blend digital and non-digital activities, and
  - integrate individual, paired, small group, and whole-class activities.
- Digital Games (iPad)
  - 2 Self-leveling digital games 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

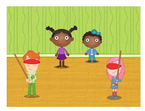
Next Generation Preschool Mathematics : Logic Model

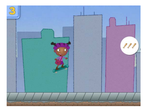


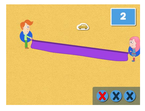


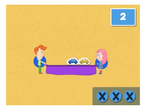




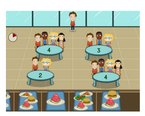


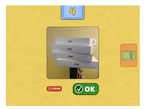


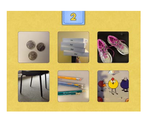


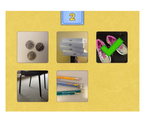


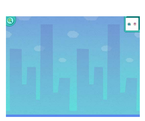


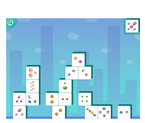
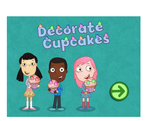



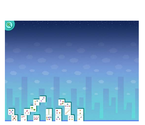








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Design & Research Loop

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.

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

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