

Next Generation Preschool Math (NGPM)

The Next Generation Preschool Math project (NGPM) is a 4-year, NSF-funded research study that focuses on the integration of digital content in the preschool classroom. Under this grant, the team developed eight math iPad apps (four for subitizing and four for equipartitioning), a new curriculum to integrate the technology with 46 original hands-on and traditional classroom activities, and a digital Teacher's Guide that included reports of children's learning in the math apps and three professional development modules. Images from the digital games are shown below.

nextgenmath.org



Birthday Café (subitizing)

Children seat friends at the table and make sure that each friend gets something to eat.



City Skate (subitizing)

Children collect groups of a specific number of objects as they go through the city.



Jungle Gym (subitizing)

Children dangle robots with the same number of dots together on the jungle gym.



Treasure Bubbles (subitizing)

Children work together to pop bubbles with a specific number of treasures inside.



Photo Friends (equipartitioning)

Children's pictures are in the game, and they work together to distribute items equally.



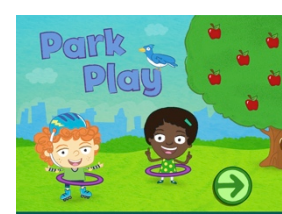
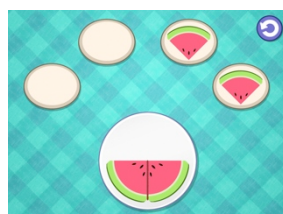
Lemonade Stand (equipartitioning)

Children tilt the iPad to get the same number of ice cubes into each cup.



Breakfast Time (equipartitioning)

Children cut up breakfast items and share them with friends.



Park Play (equipartitioning)

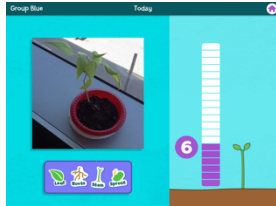
Children equally share apples, hula hoops, pie, and bubble clouds.



Next Generation Preschool Science (NGPS)

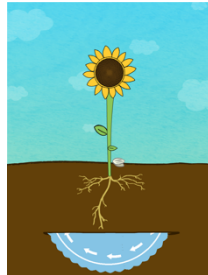
The Next Generation Preschool Science project (NGPS) is a 4-year, NSF-funded research study that 1) integrates established classroom activities with digital learning resources to promote young children's engagement in science practices and understanding of science concepts, and 2) includes professional development resources to support teachers and guide classroom implementation. Images from some early prototypes of the digital games are shown below.

nextgenprek.org



Plant Toolkit

Children document their plant's growth using pictures, labels, and a measurement tool in their toolkit.



Sunflower Sprout

Children simulate the process of seeds growing into sunflowers.



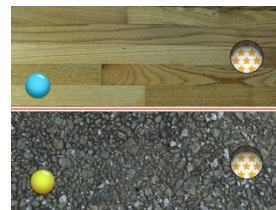
Bean Grow

Children choose a combination and sequence of variables to experiment with what plants need to grow.



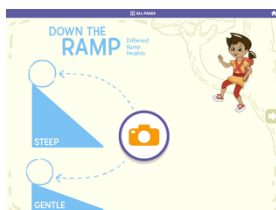
Happy Harvest & Salad Maker

Children collect tomatoes from a garden in Happy Harvest and can add them into their salad – along with other fruits and veggies – in Salad Maker.



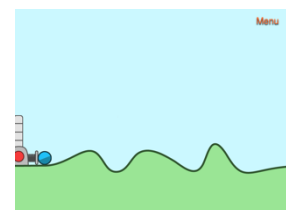
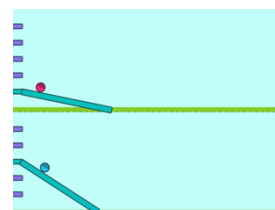
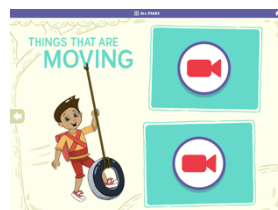
Textures

Children tilt the iPad to explore how objects move along different surface textures.



Ramp Journal

Children document their ramp experiments and observations of motion in their journal.



Ramp Simulation

Children simulate how objects move on different ramps and then more complex pathways.