

Next Generation Preschool Science (NGPS)

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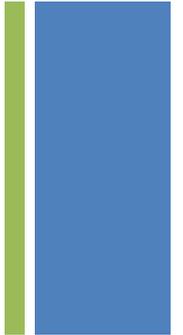
NSF PI Meeting

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Next Generation Preschool Science

PROJECT GOALS

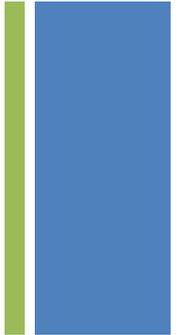


- Develop, iteratively refine, and evaluate *Next Generation Preschool Science*—an innovative program that can be easily adopted in preschool classrooms to promote young children’s learning of key science practices and concepts.
- The program:
 - (1) integrates common and established learning experiences, such as book readings/discussions and hands-on explorations, with developmentally appropriate digital activities that provide unique and interactive learning opportunities and
 - (2) includes professional development resources to support teachers and guide implementation

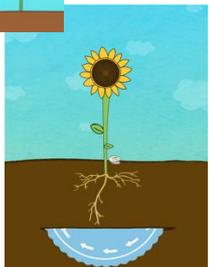


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PROJECT GOALS

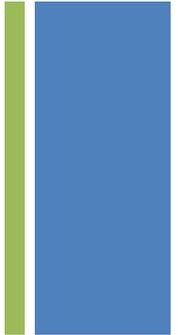


- **NGPS** includes 3 curricular modules and related teacher resources.
 - Each module covers a different science topic (Big Idea) and provides children opportunities to engage in science practices and talk.
 - Module 1: Life Science (*How do plants grow?*)
 - Module 2: Physical Science (*How do objects move?*)
 - Module 3: Earth Science (*What makes shadows?*)
 - Modules include:
 - (1) Books readings
 - (2) Investigations that integrate hands-on activities with digital activities (classroom toolkit)
 - (3) Simulations or games that provide unique opportunities for children to practice engaging in science practices





Next Generation Preschool Science Approach

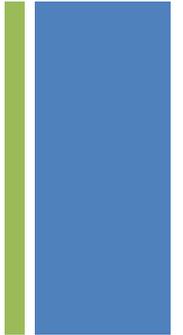


- **Iterative design process (1st and 2nd years)**
 - Research-based content domain analysis → blueprint
 - Feedback from teachers and expert advisors
 - User tests with children
 - Field tests with teachers and children
- **Evaluation of implementation and outcomes (3rd year)**
 - Pilot to evaluate promise
 - Child assessments
 - Classroom observations
- **Examination of sustainability (4th year)**
 - Research continued implementation of NGPS program – successes and barriers/challenges



Next Generation Preschool Science

Preliminary Findings (Year 1)



- Module 1 User Testing and Field Testing
 - Children demonstrated new knowledge and skills relating to some of the learning goals (science content, scientific practices, and science talk)
 - Teachers experienced few challenges using the digital tools in conjunction with hands-on activities
 - Teachers may benefit from additional training to support children's engagement with:
 - some of the scientific practices (such as posing testable questions and interpreting data)
 - some aspects of science discourse (such as responding to the ideas of others).