INTRODUCTION

Presenting
• Martha Cyr, Mia Dubosarsky, Melissa Sue John (WPI)
• Colleen Bostwick, Christine Grudoff (Worcester Head Start)

In the room
• Susmitha Wunnava, Theresa Bruckerhoff, Liz Rogers Wright, Suchira Channoi

Other members of the team
• Florencia Anggoro (Holy Cross)
• Ugur Celik, Leah Holt, Miranda Lawell (WPI)

Who is in the room?
DISCLAIMER

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ABOUT SEEDS OF STEM

• STEM curriculum developed in Head Start Classes
• Funded by the Institute of Education Sciences (IES)

• Emphasis on science, math, and problem solving

• Development Team
  – 6 Worcester Head Start teachers
  – 4 Researchers & 1 Evaluator
  – 2 graduate students & 3 undergraduate students
THE CURRICULUM

• 8 integrated units
• MA Pre-K framework and Head Start Framework learning outcomes
• Unit description
  – one science concept
  – steps for solving problems
  – Problem Panda, the character that connects the units
THE CURRICULUM

Follows guidelines for EC HQ STEM*:

1. Developmentally appropriate
2. Culturally responsive
3. Application of the engineering design process
4. Designed based on academic standards
5. Technology integration (use of tools)
6. Connected to non-STEM disciplines
7. Real-world and STEM careers
8. Nature of assessment

* Adapted from the Dayton Regional STEM Center’s Quality STEM Framework (2011)
CURRICULUM DEVELOPMENT

PROCESS

• Collaborative
• Trial and error
• It’s a process!
• Elaborated feedback form used to revise units
TEACHER’S PERSPECTIVE

• Curriculum testing
• How do the children respond to the topic of problem solving?
Improve

Share

Create

Ask

Brainstorm

Plan

Reflect

Manipulate

Improve

Test

Create

Plan
THE RESEARCH

• Develop the curriculum at HSI (1/2015-6/2017)
• Pilot-test curriculum at HS2 using control and intervention groups (9/2017-6/2018)
• Examine
  – whether the children in the intervention group met the learning outcomes of the curriculum compared to control group
  – whether the curriculum increased children’s understanding and problem solving skills compared to control group
  – whether teachers increased their self-efficacy in teaching STEM as a result of teaching Seeds of STEM
AUDIENCE FEEDBACK

• Units 1-3 are available on the tables
• Review the units and share your feedback on the provided sheets

Time: 20 min
FOR MORE INFORMATION

Visit

https://seedsofstem.org/