Structures and Practices to Support NGSS Implementation

Meegan Adames, K-12 Science Supervisor, New Brunswick
Alicia Killean, K-12 Math & Science Supervisor, Holmdel
Introductions

Alicia

Meegan

Participants -- district, position, grade levels under your supervision, where you are in the process of NGSS implementation
Getting Started with NGSS - Holmdel

In-House PD Series:

- **Year 1 (14-15): Monthly meeting** of K-12 teachers (2 teachers per grade level K-6, plus 2 middle and 2 high school teachers) to read and discuss the K-12 Frameworks Book.
- **Year 2 (15-16): Monthly meeting** of K-12 teachers to explore the NGSS standards and write lessons/curricula which was based off of the standards.
- **Department** and **Team Meetings** devoted to looking at shifts in NGSS
- **K-5 Elementary program was piloted** (16-17)

Out of District PD:

- Individual teachers went to workshops of their choosing (Science Convention, NJDOE Workshops, etc)
Getting Started with NGSS - New Brunswick

Pre-Implementation Work with MS & HS Science Teachers

- Rider Gap Analysis Workshop Series (14 - 15)
- Rider Lesson Planning Workshop Series (15-16)
- Summer Academy 2015 to kick off 6 - 12 curriculum writing
  ○ Collaborated with Rutgers CMSCE
- Highlighted various aspects of NGSS at department meetings and PD days
- Teachers attended New Jersey Science Convention & workshops at Raritan Valley Community College with Wil Van Der Veen (2014, 2015)
- SENCER Summer Institute (2015, 2016, 2017) to make connections to civic engagement
- Release time for curriculum writers to work together and with me (15-16)
Getting Started with NGSS - New Brunswick

Pre-Implementation Work with K-5 Teachers

- Rider Lesson Planning Workshop Series (15-16)
- Summer Academy 2016 to kick of K-5 curriculum writing
  - Collaborated with Liberty Science Center
- Visited all 48 K-5 Common Planning Time meetings to introduce NGSS in Spring 2015 & 2016
- Half Day PD sessions with each grade level in Spring 2015, 2016 & 2017 where we engaged in hands on experimentation, looked for connections to NGSS
  - Collaborated with Liberty Science Center
- Release time for curriculum writers to work together and with me (16-17)
Getting Started with NGSS - Participants

What steps did you take to get ready for NGSS, pre-implementation?
Where Are We Now? - Holmdel

Strategies to Support Implementation - K-12

- **PD for K-5 teachers** implementing new program
- **Lead teachers** in each grade from pilot to assist grade level teams as needed.
- **All team and department meetings** focused on resources and supports for NGSS (Notebooking, Assessments, Evidence Statements, Phenomena)
- **Release Time** for grade level teachers to collaboratively unit plan and develop assessments
- Beginning 6-12 **vertical articulation** to discuss assessments, labs, and activities.
- Converting **lab and storage space** for teachers in grades 4&5
Where Are We Now? - New Brunswick

Strategies to Support Implementation - 6-12

- Workshops with Rider on Assessment (16-17) and Engineering Design (17-18)
- Workshops with Rider/BSCS on Assessment Design (2017)
- Rutgers MSP worked with 4 “star” teachers
- Developed a PD team of teachers to help me plan appropriate PD for peers
- All district PD days for 6-12 science teachers focus on NGSS
- MS Common Planning Time & HS Department Meetings
- Grant money to pay groups of teachers to come over the summer to work on improvements to curricula & assessments
- HS physics teacher with an admin duty is reviewing MS physical science units and & working with MS teachers during release time. Also helping with assessment data analysis.
Where Are We Now? - New Brunswick

Strategies to Support Implementation - K-5

- **Workshops with Rider** on Assessment (16-17) and Engineering Design (17-18)
- Workshops with Rider/BSCS on Assessment Design (2017)
- Used teachers working on an **administrative internship** to review K-5 curricula with me
- **K-5 Science Team**: teachers who come to after school PD and volunteer to share information with peers informally and at **faculty meetings**
- **Science Resource Managers** (stipended position) push out materials to encourage teachers to tackle projects
- **Half Day PD afternoon** with 1st grade, 2nd grade, and 3-5 Math/Science Teachers
Things We’ve Tried To Do...

- Stay Positive
- Keep an Open Mind
- Encourage Risk Taking
- Try to Learn Along with the Teachers
Where Are You Now? - Participants

What strategies are you using now to facilitate implementation?
What Lies Ahead? - Holmdel

- Continue to work with 6-12 teachers on what we’ve learned:
  - Reviewing and improving phenomena used to base instruction
  - Exploring how we are evaluating student attainment of concepts (both formatively and summatively)
- Creating smooth transition between schools (Gr. 3 to 4, 6 to 7, 8 to 9)
  - Focusing on SEPs to create a more fluid experience for students
  - Collaboratively designing assessments
- K-5 program support
  - Making modifications/revisions to program, filling in identified gaps
  - Identifying areas of overlap to compact with LA/Math
- Supervisor Collaboration
  - Looking for opportunities to bring Technology/Engineering Program into Science
What Lies Ahead? - New Brunswick

● Continuing to synthesize everything we have been learning from various workshops in order to bring it all together coherently:
  ○ Continuing to explore what 3-D learning looks like
  ○ Finding ways to help teachers facilitate student learning within project based or problem based units
  ○ Assessing student progress formatively to help drive the unit
  ○ Making phenomenon or problem the explicit driving focus of each unit

● Finding ways to support K-5 teachers:
  ○ Helping teachers see how science fits into ELA & Math, when appropriate
  ○ Focusing on writing throughout a series of science lessons
  ○ Solidifying vocabulary and exploring non-fiction texts after hands on investigation
What Lies Ahead? - Participants

Based on what you are seeing in classrooms now, how do you plan to continue to improve?