

**10 essential ideas for NYSSLS  
Professional Development  
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**Rationale**

- \* Districts and NYSSLS
- \* Dependent on Regents vote and timeline
- \* Resources (handout)
- \* Please use slides

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**1. What is BOCES role right now?**

- \* Discuss "What is our message?"
- \* Identify how to best lead/support district leadership and teachers
- \* Plan how we lead the work of awareness, transition and implementation
- \* Develop meaningful/transformational workshops

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### Actions

- \* Communicate with district administrators and leaders
- \* Survey and identify needs
- \* Develop timeline for workshop offerings - 3 years
- \* Explore model rollouts from other States
- \* Initiate possible collaborations
- \* Identify/train workshop leaders

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### 2. Concerns at district leadership level

- \* I am not a science person. What do I need to know?
- \* I need to keep my BOE and parents happy.
- \* What about CCLS and NYSSLS?
- \* How can we find time for science in the elementary day?
- \* How can I provide quality PD that changes classroom practice?
- \* What does NYSSLS mean by engineering?
- \* What curricula are already out there?
- \* Budget

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### Provide

- \* Resources packet
- \* Unpack/awareness of NYSSLS format
- \* History of development
- \* Why is science as a discipline important?
- \* Concept of science that is not just content
- \* EQUIP rubric and training
- \* Vendor fair

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### Discuss connections to district vision

- \* Consistent with current curriculum - AP, CCLS ELA/Math and message of MST
- \* Vision and best practices - researched based, NY educator feedback
- \* Graduates succeed and thrive in a 21<sup>st</sup> century, global, changing economy
- \* Reassure BOE that PD is not wasting money – trust and commit to change

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### Action plan

- \* Build K-12 articulation team
- \* Map practices/skills - not just content
- \* Identify expertise
- \* Understand successful implementation must result in change in classroom
- \* Realize most teachers have never taught 3D way
- \* Problem-based learning. Explain phenomenon.
- \* Address the needs of all students
- \* Meta-cognition
  - o Teachers
  - o Students

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### Follow up

- \* Talk about progressions in practices
- \* Build a coherent program - not just content
- \* Make connections to ELA, Math, SS, Engineering
- \* Understand and demonstrate what NYSSLS/NGSS looks like/feel likes in the classroom
- \* Teams develop courses, curriculum lessons

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### 3. Concerns on building level

- \* How do I get teacher buy in?
- \* How do I respond to "I do this already"?
- \* What does a great science lesson look like?
- \* How can scheduling lecture/lab help with the new NYSSLS expectations?
- \* How do I involve my ENL/ELL, Special Education teachers and specialists in meeting the needs of all students in science?
- \* What should I communicate to parents?

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### Actions

- \* Survey what your teachers already know about NGSS/NYSSLS
- \* Honor what your teachers already know - May be what your great teachers do now
- \* Squashes students "Why do we have to know this?"
- \* Just try it and see. Student engagement
- \* Not about you, about the students

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### 4. Concerns at individual level HS

- \* I have so much to cover, I don't have time for students to investigate
- \* I have to start from scratch each year and teach them graphing
- \* What will the assessments look like?
- \* When will NYSSLS be implemented, and how quickly?
- \* Will there still be lab time?
- \* Do I have to teach engineering?
- \* What is different from what I do now?

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### Analogy: Reorganizing Books



The image shows a wooden bookshelf with several shelves of books. A red circle highlights a specific section of books on the second shelf from the top. A red 'X' is placed over a book lying on the floor in front of the shelf. A red curved arrow points from the top left towards the bookshelf.

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### Actions

- \* Discuss and focus on the important ideas
- \* Imbed "scientific method" throughout the year
- \* Department or team discussion/rewrite of 1 unit
  - o Choose compatible with current standards
- \* Share best practices
- \* Discover what others are doing - Professional organizations
  - o Listserv
  - o STANYS regional or State conference [www.stanys.org](http://www.stanys.org)
  - o NSTA

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### Actions continued

- \* Demonstrate how to use formative assessments wisely. Do students get exit tickets back?
- \* Collaborate with other departments/buildings
- \* Write assessments based on PE's
- \* Reassure - Don't have to teach shop. Explore examples of engineering integrated into course

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## 5. Concerns at the Middle Level

- \* What topics will be taught at which grade level?
- \* Certification – NYSED
- \* Acceleration?
- \* Course development and options
- \* Content support 6<sup>th</sup> grade teachers

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## Actions

- \* Discuss and plan course development
- \* Take advantage of new expectations
- \* Build on existing teams
- \* Content support
- \* Share best practices

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## 6. Concerns - Elementary level

- \* I don't have time. When am I going to do this?
- \* Do I have to give up the unit I always teach on butterflies?
- \* My kindergarteners can't plan and carry out an investigation. Do I have to teach them the scientific method?
- \* I don't like science.
- \* What if I don't know the answer?
- \* I don't know anything about waves

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## Actions

- \* District leaders MUST set expectations for science time
- \* Observe a science lesson
- \* Provide opportunities for teachers to become science and engineering learners
- \* Content workshops and support
- \* Demonstrate what investigations look like at K, 3, 5 level. Match to progressions
- \* Book study – Wynne Harlan

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## 7. A great science lesson

- \* What does a great science lesson look like?
- \* Bring back excitement and enthusiasm – allow students to experience science as part of their lives
- \* Like a great Chef - must adjust as you go along

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### ANALOGY: 3D LEARNING AND COOKING



Kitchen Tools & Techniques  
(Practices)



Basic Ingredients  
(Core Ideas)



Vegetables, Herbs  
and Spices  
(Crosscutting)



Preparing a Meal (3D Learning)

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## 8. What's already out there?

- \* Forum for district sharing
- \* Explore what other states are doing
- \* Resources – Books and websites
- \* EQulP rubric

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## 9. Take home message

- \* Quality presenters have experience of NGSS/NYSSLS
- \* Important work and WILL take time
- \* Awareness/introduction to NYSSLS
- \* Transition
  - o Menu of workshops to suit needs
  - o Regional PD day Rockland
  - o Unconference?
- \* Implementation
  - o Curriculum, instruction, assessment
  - o Collaboration and feedback

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## Professional Learning Summary

- \* Administrators – understand what they should be seeing in science education and support
- \* HS – curriculum support, instructional practices, student construction of knowledge
- \* MS – content support, instructional practices
- \* Elementary – curriculum, content and instructional practice

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## 10. Finally..

- \* What is reasonable to do right now?
- \* Where are you going to start?
- \* What is our work going to be over the next 3 years?

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