K-5 Science Curriculum Adoption

8th Meeting, May 21st, 2018

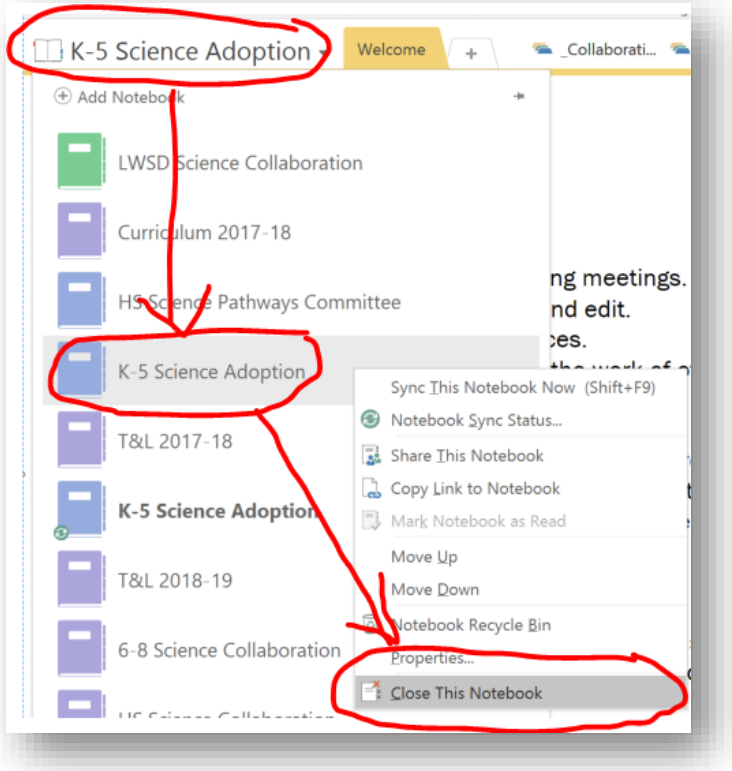
Welcome!

OneNote Switch

If you are using the OneNote **Desktop** app, please close the current Notebook and open the new one (there is a link in your Inbox from Wednesday).

Make sure the Notebook you're using includes Meeting 8 in the Content Library.

The old Notebook will be deleted after today.



Outcomes for Today

- Understand timeline for 2018-19 adoption committee work.
- Refine rubrics for evaluating curriculum materials.
- Provide input on professional learning needs for 2018-19.

Group Expectations/Norms

An open attitude/willingness to learn:

- Being open to learning about curriculum, instruction, and assessment

A professional work ethic that includes:

- Following through on the commitment to this work (monthly meetings, three year process)
- Speaking with respect and working collaboratively with colleagues
- Expressing opinions openly, honestly, and kindly
- Being solution-oriented
- Supports reasoning with evidence

Engaging fully in every meeting:

- Staying focused by not engaging in side conversations, email, or other work during meetings
- Following and helping monitor group norms

Adoption Overview

PROCESS, TIMELINE & TOOLS

Committee Purpose

To make a recommendation for the adoption of new K-5 science curriculum by Spring 2019.

- Year 1: LEARN
  - Engage in shared learning around effective science instruction based on current research and the Next Generation Science Standards (NGSS).
  - Lead learning activities in buildings.
  - Develop/refine screening tools for evaluating curricula.
- Year 2: EVALUATE
  - Use screening tools to evaluate curriculum materials.
  - Pilot materials in classroom.
  - Make recommendation to the Board.
- Year 3: IMPLEMENT
  - Advisory role to support successful implementation of new curriculum.

Adoption Timeline

	2017-18	2018-19	2019-2020	2020-2021
Adoption Committee	Learning, Research, & Curriculum Screening Tool Development	Review, Evaluate & Pilot Materials → Make Recommendation	Support Implementation Process	
Professional Development	3-4 Modules in Buildings (Build knowledge & capacity)	NGSS Trainings for K-5 Teachers	NGSS Trainings for K-5 Teachers	NGSS Trainings for K-5 Teachers
Standards	LWSD Power Standards	LWSD Power Standards	NGSS/WSSLS	NGSS/WSSLS
Curriculum Materials	No change	No change	New Materials in Buildings (phase in possible)	Continued phase-in of materials
State Assessment	New 5th Grade WCAS Science Assessment (replaces MSP)	5th Grade WCAS Science Assessment	5th Grade WCAS Science Assessment	5th Grade WCAS Science Assessment

http://portalnew.lwsd.org/LWSDDocuments/K-5%20NGSS%20Timeline.pdf

2018-19 Adoption Work

Sept→Dec

1. Use Rubrics to Evaluate Materials
2. Vote to Select Top Two Programs

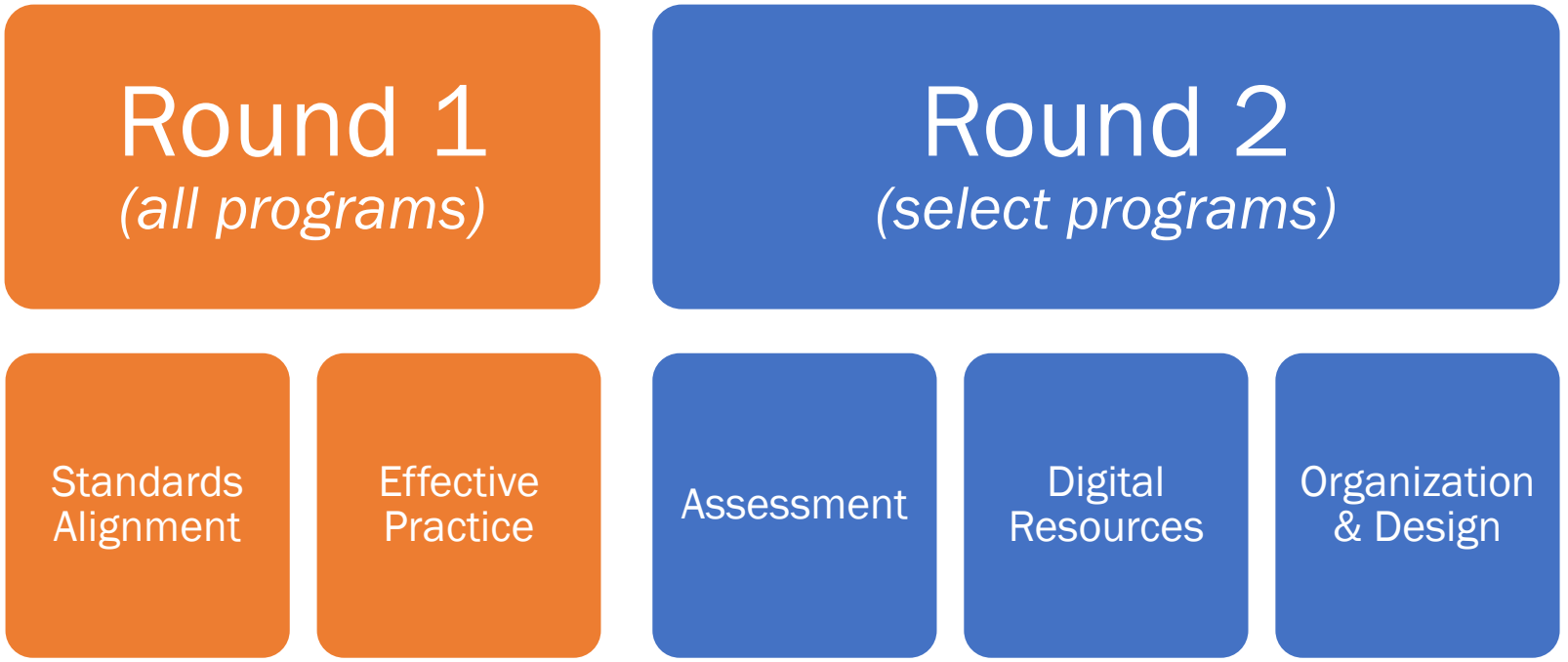
Jan→Mar

3. Pilot Materials
4. Teacher, Student & Community Input
5. Vote to Select Recommended Program

Apr→Jun

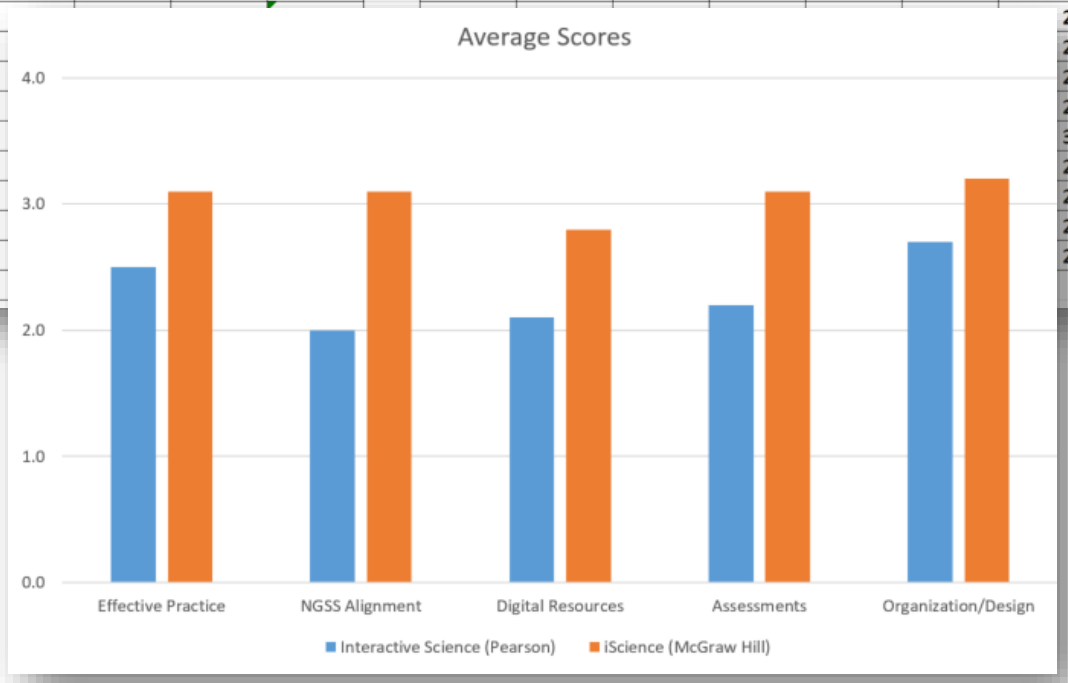
6. IMC Review & Board Recommendation
7. Plan for Implementation 2019-20

Evaluation Tools (Rubrics)



Rubric Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Organization and Design															
2																
3		McGraw Hill						Avg		Pearson						Avg
4		6th Grade		7th Grade		8th Grade				6th Grade		7th Grade		8th Grade		
5	1.1a	2.5	2.5	3.0	3.0	4.0	4.0	**3.2**		3.0	3.0	2.0	2.0	4.0	4.0	**3.0**
6	1.1b	4.0	4.0	3.5	3.5	4.0	4.0	**3.8**		3.0	3.0	3.0	3.0	3.0	3.0	**3.0**
7	1.2	4.0	4.0	3.5												**2.8**
8	1.3	4.0	4.0	3.0												**2.0**
9	1.4	3.0	3.0	2.0												**2.7**
10	1.5	3.0	3.0	2.0												**2.5**
11	1.6a	4.0	4.0	3.0												**3.3**
12	1.6b	3.0	3.0	2.5												**2.7**
13	1.7	3.0	3.0	3.0												**2.7**
14	1.8a	2.0	2.0	3.0												**2.7**
15	1.8b	2.0	2.0	3.0												**2.8**
16	Avg Overall			**3.2**												



Programs for Consideration

Amplify

Carolina STC (Smithsonian)

Engineering is Elementary

FOSS

McGraw Hill Inspire Science

Mystery Science

STEMscopes

TCI

Others?

Rubric Overview

Rubric Background

- Five District Rubrics:
  1. Standards Alignment
  2. Effective Practice
  3. Assessment
  4. Digital Tools
  5. Organization & Design
- Rubrics Refined by Each Adoption Committee
  - Use current research in subject area
  - Consider committee interests
  - Refinement should be evidence-based

Initial Reflection

- Browse each draft rubric…
  - What do you notice?
  - Any initial questions, concerns, wonderings?
  - Highlight/take notes directly on the rubrics.

PEEC

By Achieve

Primary Evaluation of Essential Criteria for NGSS Instructional Materials Design

Intended to evaluate the NGSS design of instructional materials programs that span several grade levels (e.g. a K-5 elementary science program)

Three-stage process of evaluation:

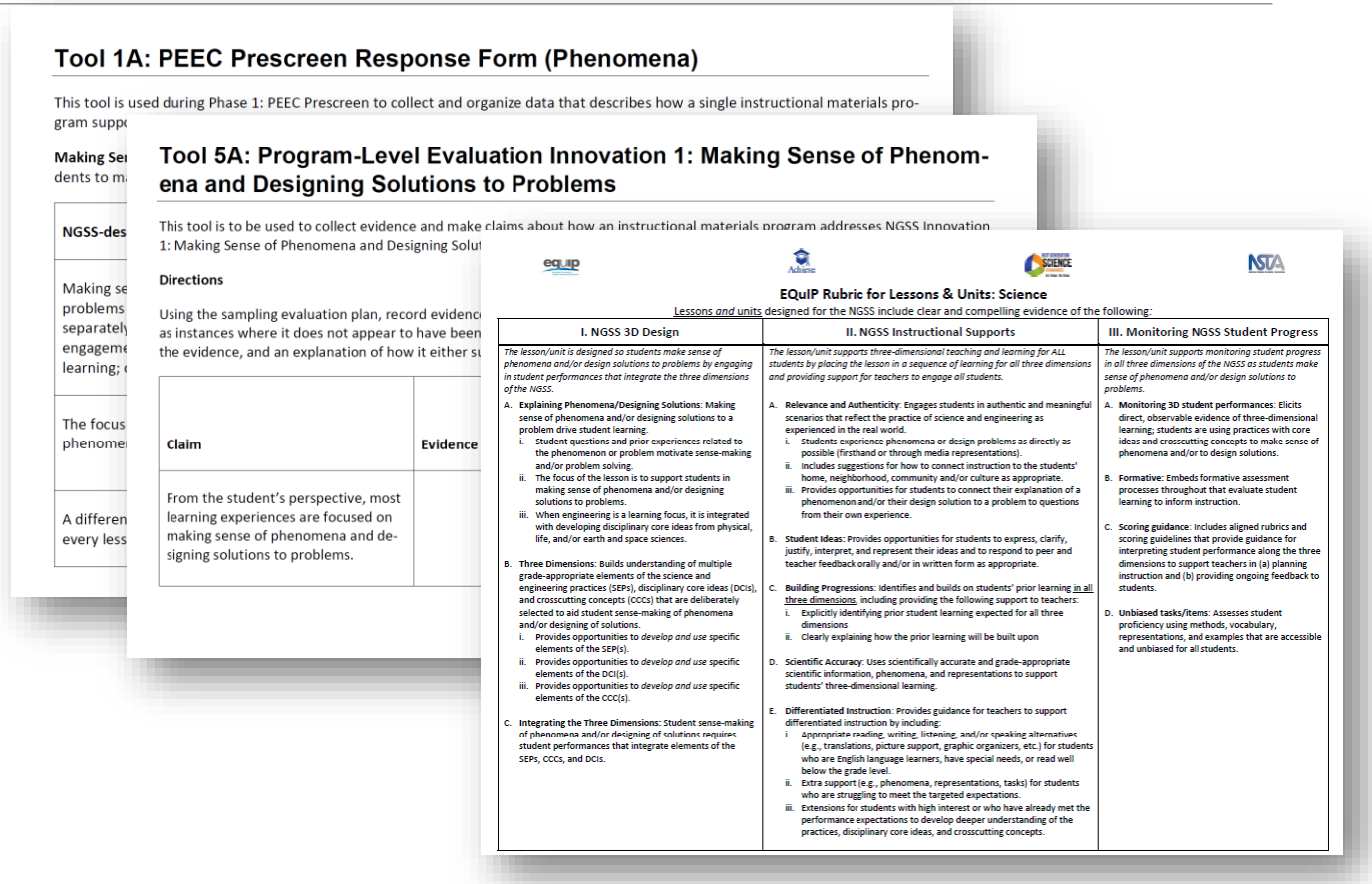
1. PEEC Prescreen (quick look using select criteria to narrow scope)
2. Unit Evaluation (using EQuIP to verify thoroughness of NGSS design)
3. Program-Level Evaluation (broad look to evaluate NGSS innovations within the program)

5 NGSS Innovations

1. **Making Sense of Phenomena and Designing Solutions to Problems.** Making sense of phenomena or designing solutions to problems drives student learning.
2. **Three-Dimensional Learning.** Student engagement in making sense of phenomena and designing solutions to problems requires student performances that integrate grade-appropriate elements of the Science and Engineering Practices (SEPs), Crosscutting Concepts (CCCs), and Disciplinary Core Ideas (DCIs) in instruction and assessment.
3. **Building K–12 Progressions.** Students' three-dimensional learning experiences are designed and coordinated over time to ensure students build understanding of all three dimensions of the standards, nature of science concepts, and engineering as expected by the standards.
4. **Alignment with English Language Arts and Mathematics.** Students engage in learning experiences with explicit connections to and alignment with English language arts (ELA) and mathematics standards.
5. **All Standards, All Students.** Science instructional materials support equitable access to science education for all students

PEEC Criteria to Consider

Tools 1 & 5



Tool 1A: PEEC Prescreen Response Form (Phenomena)

This tool is used during Phase 1: PEEC Prescreen to collect and organize data that describes how a single instructional materials pro-
gram suppo

Making Se
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NGSS-des
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Tool 5A: Program-Level Evaluation Innovation 1: Making Sense of Phenomena and Designing Solutions to Problems

This tool is to be used to collect evidence and make claims about how an instructional materials program addresses NGSS Innovation 1: Making Sense of Phenomena and Designing Solu

Directions

Using the sampling evaluation plan, record evidenc
as instances where it does not appear to have been
the evidence, and an explanation of how it either su

Claim	Evidence
From the student's perspective, most learning experiences are focused on making sense of phenomena and designing solutions to problems.	

EQuIP Rubric for Lessons & Units: Science

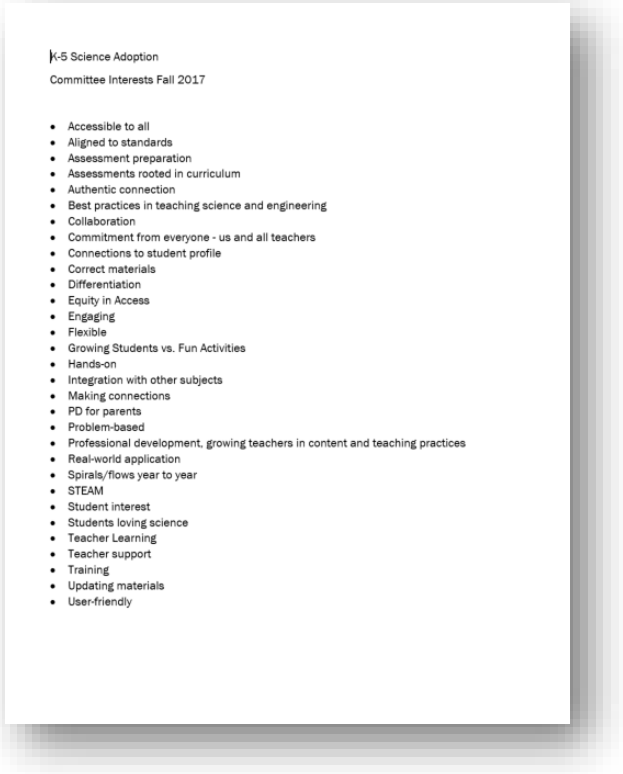
Lessons *and* units designed for the NGSS include clear and compelling evidence of the following:

I. NGSS 3D Design	II. NGSS Instructional Supports	III. Monitoring NGSS Student Progress
The lesson/unit is designed so students make sense of phenomena and/or design solutions to problems by engaging in student performances that integrate the three dimensions of the NGSS.	*The lesson/unit supports three-dimensional teaching and learning for ALL students by placing the lesson in a sequence of learning for all three dimensions and providing support for teachers to engage all students.*	*The lesson/unit supports monitoring student progress in all three dimensions of the NGSS as students make sense of phenomena and/or design solutions to problems.*
A. **Explaining Phenomena/Designing Solutions**: Making sense of phenomena and/or designing solutions to a problem drive student learning. i. Student questions and prior experiences related to the phenomenon or problem motivate sense-making and/or problem solving. ii. The focus of the lesson is to support students in making sense of phenomena and/or designing solutions to problems. iii. When engineering is a learning focus, it is integrated with developing disciplinary core ideas from physical, life, and/or earth and space sciences. B. **Three Dimensions**: Builds understanding of multiple grade-appropriate elements of the science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) that are deliberately selected to aid student sense-making of phenomena and/or designing of solutions. i. Provides opportunities to *develop and use* specific elements of the SEP(s). ii. Provides opportunities to *develop and use* specific elements of the DCI(s). iii. Provides opportunities to *develop and use* specific elements of the CCC(s). C. **Integrating the Three Dimensions:** Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEPs, CCCs, and DCIs.	A. **Relevance and Authenticity**: Engages students in authentic and meaningful scenarios that reflect the practice of science and engineering as experienced in the real world. i. Students experience phenomena or design problems as directly as possible (firsthand or through media representations). ii. Includes suggestions for how to connect instruction to the students' home, neighborhood, community and/or culture as appropriate. iii. Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to questions from their own experience. B. **Student Ideas**: Provides opportunities for students to express, clarify, justify, interpret, and represent their ideas and to respond to peer and teacher feedback orally and/or in written form as appropriate. C. **Building Progressions**: Identifies and builds on students' prior learning in all three dimensions, including providing the following support to teachers: i. Explicitly identifying prior student learning expected for all three dimensions ii. Clearly explaining how the prior learning will be built upon D. **Scientific Accuracy**: Uses scientifically accurate and grade-appropriate scientific information, phenomena, and representations to support students' three-dimensional learning. E. **Differentiated Instruction**: Provides guidance for teachers to support differentiated instruction by including: i. Appropriate reading, writing, listening, and/or speaking alternatives (e.g., translations, picture support, graphic organizers, etc.) for students who are English language learners, have special needs, or read well below the grade level. ii. Extra support (e.g., phenomena, representations, tasks) for students who are struggling to meet the targeted expectations. iii. Extensions for students with high interest or who have already met the performance expectations to develop deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.	A. **Monitoring 3D student performances**: Elicits direct, observable evidence of three-dimensional learning; students are using practices with core ideas and crosscutting concepts to make sense of phenomena and/or to design solutions. B. **Formative**: Embeds formative assessment processes throughout that evaluate student learning to inform instruction. C. **Scoring guidance**: Includes aligned rubrics and scoring guidelines that provide guidance for interpreting student performance along the three dimensions to support teachers in (a) planning instruction and (b) providing ongoing feedback to students. D. **Unbiased tasks/items**: Assesses student proficiency using methods, vocabulary, representations, and examples that are accessible and unbiased for all students.

EQuIP (intended for individual units rather than entire programs)

Committee Interests

Are our interests reflected in our rubrics?



K-5 Science Adoption

Committee Interests Fall 2017

- Accessible to all
- Aligned to standards
- Assessment preparation
- Assessments rooted in curriculum
- Authentic connection
- Best practices in teaching science and engineering
- Collaboration
- Commitment from everyone - us and all teachers
- Connections to student profile
- Correct materials
- Differentiation
- Equity in Access
- Engaging
- Flexible
- Growing Students vs. Fun Activities
- Hands-on
- Integration with other subjects
- Making connections
- PD for parents
- Problem-based
- Professional development, growing teachers in content and teaching practices
- Real-world application
- Spirals/flows year to year
- STEAM
- Student interest
- Students loving science
- Teacher Learning
- Teacher support
- Training
- Updating materials
- User-friendly

Break (15 minutes)

Rubric Deep Dive

At each station…

1. Closely examine the rubric.
2. Consider committee interests and the PEEC and EQuIP criteria.
3. As a group, discuss wonderings, edits, additions, etc.
4. Record these on the poster paper at that station (if something has already been recorded, add a star to indicate you agree).

You will have approximately 20-30 minutes at each station.

Lunch (one hour)

Rubric Refinement

Professional Learning

Time to discuss and record recommendations for…

1. Adoption Committee (this group)
2. New Cohort (a new group of learners, one rep per school)
3. Grade Level
4. In-Building
5. Administrators
6. Optional Sessions

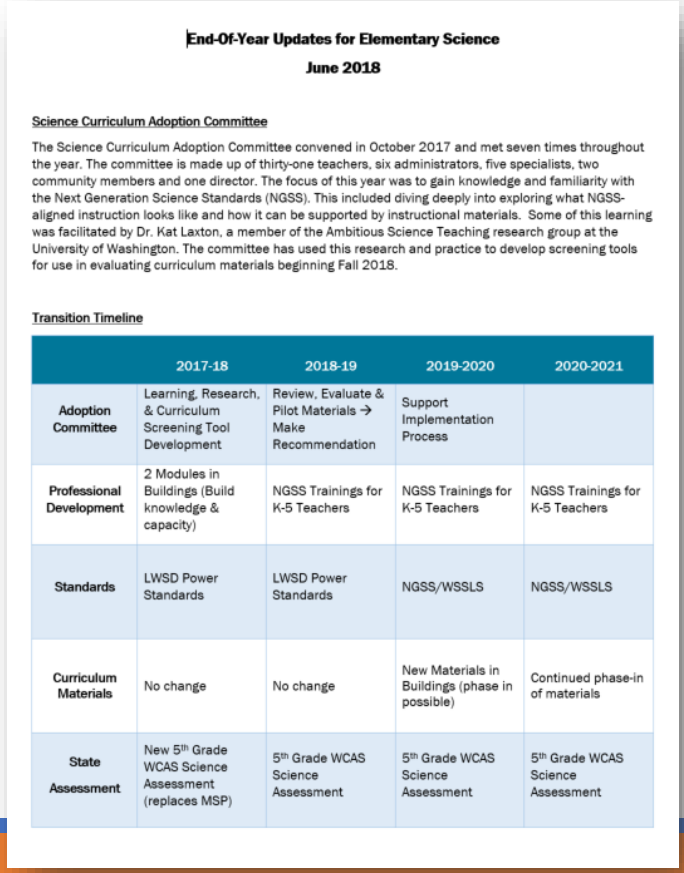
Messaging

Review draft key messages for the end of the year…

Additions?

Edits?

Clarification needed?



End-Of-Year Updates for Elementary Science

June 2018

Science Curriculum Adoption Committee

The Science Curriculum Adoption Committee convened in October 2017 and met seven times throughout the year. The committee is made up of thirty-one teachers, six administrators, five specialists, two community members and one director. The focus of this year was to gain knowledge and familiarity with the Next Generation Science Standards (NGSS). This included diving deeply into exploring what NGSS-aligned instruction looks like and how it can be supported by instructional materials. Some of this learning was facilitated by Dr. Kat Laxton, a member of the Ambitious Science Teaching research group at the University of Washington. The committee has used this research and practice to develop screening tools for use in evaluating curriculum materials beginning Fall 2018.

Transition Timeline

	2017-18	2018-19	2019-2020	2020-2021
Adoption Committee	Learning, Research, & Curriculum Screening Tool Development	Review, Evaluate & Pilot Materials → Make Recommendation	Support Implementation Process	
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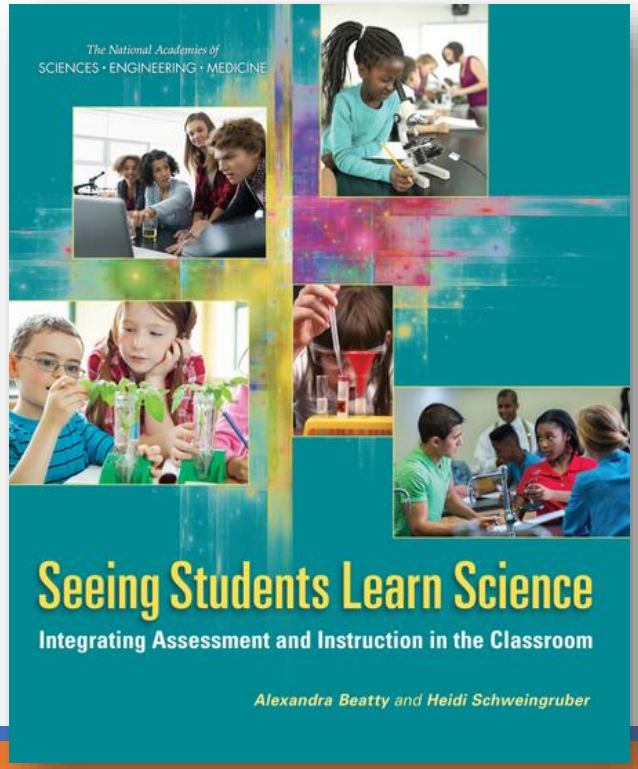
Closure & Next Steps

Optional Summer Learning

Want to learn more about NGSS-aligned classroom assessment?

This book has been pushed out to each of you in OneNote.



Reflection

Please complete a quick exit survey:

https://tinyurl.com/k5sci521

Thank You!

Thanks to all for your your hard work and dedication throughout this year!

Clock hour/credit half sheets are available.

See you in September!