

Secondary Science Curriculum Adoption Committee Meeting

Monday, October 30, 2023
SUSD Oak Campus

Call to Order



Roll Call

Roll Call

Sign In Sheet

Please record arrival time on the sign-in sheet as you arrive. Record departure time if you are leaving before the meeting officially adjourns.

The Committee

Group A

*Earth and Space Science,
Oceanography/Astronomy,*

Christopher Donovan
Paula Sabato
Marissa Blanco-Johnson
Providence Ryan
Rissel Langbacker

Group B

*Environmental Science,
AP Environmental Science
Zoology/Botany*

Julie Koshy
Jen MacColl
Micah Sandys
Jaclyn Papa
Jodi Meyers
Kim Salaway

Group C

Astrophysics

Steve Millam
Dr. Nagib Balfakih
Michael Bengert
Dr. Michelle Watt

Committee Support

Dr. Kim Dodds Keran - Director of Teaching and Learning

- Committee Co-Chair

Johanna Kaiser - Science Academic Coach

- Committee Co-Chair

Dede Johnston - Instructional Materials Coordinator

Norms

Be fully present.

Listen to understand and ask questions for clarification.

Take care of your needs.

Be open to new ideas.

Invite and welcome the contributions of every member.

Support the group's recommendation after consensus is reached.

Be mindful of how often and how long you speak.

Questions and challenges are welcomed. Question and challenge the idea, not the person.

Agenda for October 30, 2023

Agenda for Monday, October 30, 2023

1. Call to Order
2. Roll Call

Information/Discussion and Possible Action

3. Approval of Agenda - **Action Item**
4. Approval of minutes from October 19, 2023 - **Action Item**
5. SUSD Secondary Science Curriculum Adoption Curriculum Evaluation Rubric Review
6. Evaluating Materials Calibration Activity
7. Future Meetings



Scottsdale *Unified* School District

Engaging all students in world-class, future-focused learning

**NOTICE and AGENDA
SECONDARY SCIENCE CURRICULUM ADOPTION
COMMITTEE 2023-2024
SCOTTSDALE UNIFIED SCHOOL DISTRICT NO. 48**

Date: Monday, October 30, 2023 **Time:** 3:30 - 5:30 pm

Pursuant to A.R.S. §38-431.02, notice is hereby given to the members of the Secondary Science Curriculum Adoption Committee and to the general public that on Monday, October 30, 2023, at 3:30 PM, at the SUSD Oak Campus, 7501 E Oak St, Scottsdale, AZ 85257, the Secondary Science Curriculum Adoption Committee 2023-2024 will hold a meeting. One or more members of the Committee and non-member participants will participate in the meeting in-person.

The Agenda for the meeting is:

1. Call to Order
2. Roll Call

Information/Discussion and Possible Action

3. Approval of Agenda - **Action Item**
4. Approval of minutes from October 19, 2023 - **Action Item**
5. SUSD Secondary Science Curriculum Adoption Curriculum Evaluation Rubric Review
6. Evaluating Materials Calibration Activity
7. Future Meetings

SECONDARY SCIENCE CURRICULUM ADOPTION COMMITTEE 2023-2024 MATERIALS WILL BE AVAILABLE TWENTY-FOUR (24) HOURS IN ADVANCE OF THE MEETING, AT THE SCOTTSDALE UNIFIED SCHOOL DISTRICT, MOHAVE DISTRICT ANNEX, 8500 E. JACKRABBIT ROAD, SCOTTSDALE, AZ 85250-6768.

Date Posted: October 26, 2023

Action Item

Discussion and Approval of Meeting Agenda for October 30, 2023

Minutes from October 19, 2023

Action Item

Discussion and Approval of Meeting Minutes from October 19, 2023

Rubric

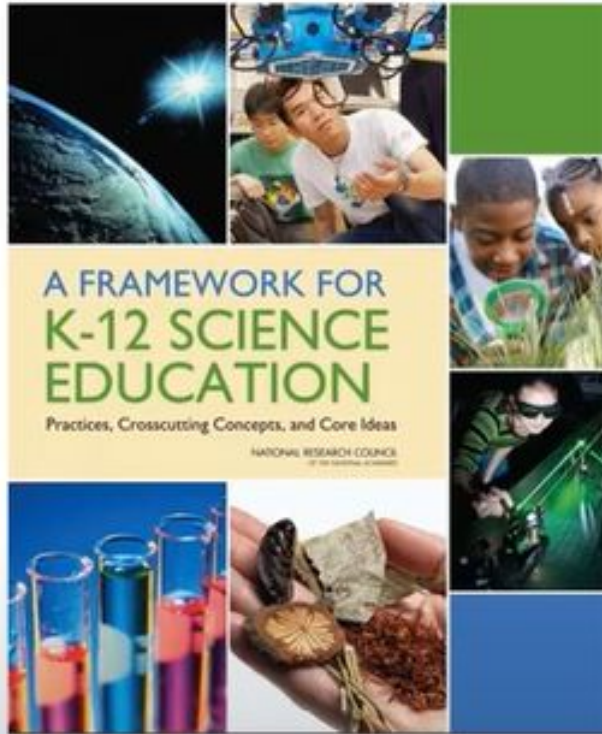
Standards vs. Curriculum vs. Instruction

Standards - What students need to know, understand, and be able to do by the end of each grade (end of high school). The WHAT

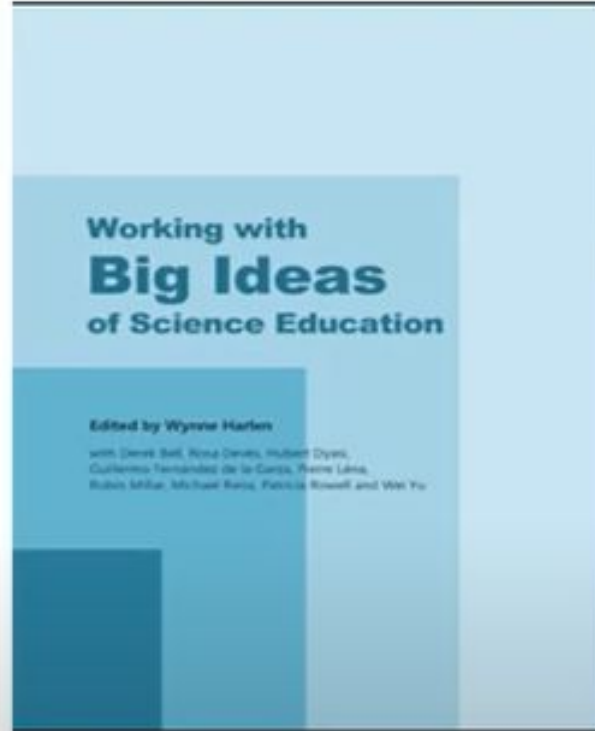
Curriculum - Resources adopted by districts to be used in the classroom to teaching the standards. The HOW (part 1)

Instruction - The methods used by teachers to teach their specific students. The HOW (part 2)

NGSS



AzSS



AzSS

ADE Guidance for Evaluating High Quality Science Instructional Materials

The NRC Framework clearly emphasizes the following shifts in science education that should be present in instructional resources:

1. **Three-dimensional learning** – students engage in science and engineering practices to learn content, while relating and understanding that content through the lens of crosscutting concepts.
2. **Explaining phenomena and designing solutions** – students investigate the world around them to explain phenomena and use their scientific understanding to design solutions to problems.
3. **Engineering design and the nature of science** – students do authentic work of scientists and engineers, explicitly seeing themselves in those roles and understanding what that entails.
4. **Coherent learning progressions** – within a grade and from K-12, three-dimensional learning builds on past experience, avoiding redundancy and building connections across disciplines.
5. **Connections to English/language arts and mathematics** – students' learning reflects real-world contexts as it explicitly uses practices and understandings from mathematics and English/language arts.

Criteria

Let's remind ourselves of the criteria for vendors that the committee reviewed last week.



Scottsdale *Unified* School District

Engaging all students in world-class, future-focused learning

Secondary Science Adoption Criteria

SECONDARY SCIENCE CURRICULUM ADOPTION COMMITTEE

SUSD's VISION: Engaging all students in world-class, future-focused learning.

SUSD's MISSION: We inspire, motivate, and empower all to think critically, act collaboratively, and embrace diversity for a life of intellectual exploration, community engagement, and personal growth.

Criteria for determining the quality of instructional materials include:

Accuracy and Alignment:

- Aligned to Arizona Science Standards (must provide an explicit Arizona Science Standards alignment document).
- Aligned to course and exam content of AP courses (if applicable).
- Uses scientifically accurate and grade appropriate scientific information, phenomena, and representations to support students' three-dimensional learning.
- Curriculum is research-based with supporting evidence.
- Designed so students make sense of phenomena and/or design solutions to problems by actively engaging students in three-dimensional learning (Science and Engineering Practices, Crosscutting Concepts, and Core Ideas).
- When appropriate, links are made to Arizona Science Standards in all the domains (life science, physical science, and Earth and space science). Core ideas from different disciplines are used together to explain phenomena.
- Curriculum is consistently laboratory/investigation-based (devoted to providing an opportunity for students to manipulate equipment, materials, or specimens to develop skills in observation and analysis, and to discover, demonstrate, illustrate, or test scientific principles or concepts).
- Appropriate lessons, investigations, and assessments that prepare students for high stakes assessments, performance-based tasks, and advanced coursework.
- Evidence of efficacy of your science curriculum in improving student learning outcomes.

Engagement and the Ability to Meet Student Needs

- Engages students in authentic and meaningful scenarios that reflect the practice of science and engineering as experienced in the real world.
- Provides guidance and resources for teachers to differentiate instruction and assessment (both support and extensions).
- Questions and learning tasks encourage the development and application of collaboration, communication, creativity and critical thinking.
- Problem-based learning and simulations relevant to the lives of students.
- Differentiation in each unit (content, process, product for readiness, language ability, learning style, etc.).
- Resources spark student interest and include interdisciplinary, real world connections.

Ease of Use and Support

- Layout and organization of curriculum materials contribute to ease of use.
- Resources are available in multiple formats for both students and teachers (hard-copy, digital, etc.). Digital resources can be accessed by teachers and students through SUSD's learning management systems (Clever, Google Classroom, Synergy, etc.).
- Curriculum is designed to link student engagement and knowledge across lessons and units and is arranged in a logical sequence.
- Curriculum provides support to teachers that buttress student academic honesty.
- Scoring guidelines and rubrics are provided for assessments.
- Professional development is provided to support implementation of curriculum.

SUSD Rubric

Created Spring 2023. Heavily adapted from the nationally-recognized EQulP Rubric (Educators Evaluating the Quality of Instructional Products Rubric).

SCSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Secondary Science Curriculum Adoption Curriculum Evaluation Rubric



Committee Member ID _____

Material Number _____

Grade/Course Alignment _____

Publisher/Vendor _____

Material/Text Name _____

0 = None 1 = Inadequate/Developing 2 = Adequate 3 = Exceeds

Adapted from the EQulP Rubric

SCSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Category I: 3D Design

The following categories assess the extent of phenomena and/or design solution responses by mapping to student performance that integrate the three dimensions of the ACS.

	Extent of Quality	Comments
1A. Explaining Phenomena/Designing Solutions: Making sense of phenomena and/or designing solutions to problems done student learning.	0 1 2 3 4	
1B. Three Dimensions: Build understanding of multiple grade-appropriate elements of the 3D, DCI, and CCC that are deliberately selected to build student sense-making of phenomena and/or design of solutions.	0 1 2 3 4	
1C. Integrating the Three Dimensions: Student sense-making of phenomena and/or design of solutions requires student performance that integrate elements of the 3D, DCI, and CCC.	0 1 2 3 4	
1D. Scientific Reasoning: Uses scientific concepts and grade-appropriate scientific information, phenomena, and representations to support student three-dimensional learning.	0 1 2 3 4	
1E. Multiple Science Domains: When appropriate, links are made across the science domains of life science, physical science, and earth and space science.	0 1 2 3 4	
1F. Knowledge: Provides grade-appropriate connections to other content (Mathematics, English Language Arts, History/Geography, Science, Technical Subjects, etc.).	0 1 2 3 4	
Rating for Category I: 3D Design		___/24

0 = None 1 = Inadequate/Developing 2 = Adequate 3 = Exceeds

Adapted from the EQulP Rubric

SCSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Category II: Instructional Supports

The following categories assess the extent of learning experiences for all students by placing the focus on measures of learning for all three dimensions and providing support for students to engage in science.

	Extent of Quality	Comments
2A. Assessment and Authenticity: Engages students in authentic and meaningful scenarios that reflect the practice of science and engineering as experienced in the real world.	0 1 2 3 4	
2B. Student Learning: Provides opportunities for students to engage, clarify, justify, interpret, and represent their ideas and respond to peers and teacher feedback orally and/or in writing, form or appropriate.	0 1 2 3 4	
2C. Building Progressions: Identifies and builds on student prior learning with three dimensions, including providing the following support to teachers:	0 1 2 3 4	
2D. Unit Coherence: Connects together to target a set of performance expectations.	0 1 2 3 4	
2E. Differentiated Instruction: Provides guidance for teachers to support differentiated instruction by including:	0 1 2 3 4	
2F. Teacher Support for Unit Coherence: Supports teachers in facilitating coherent student learning experiences over time by:	0 1 2 3 4	
2G. Scaffolded Differentiation: Provides support to help students engage in the practice as needed and gradually adjust supports over time so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems, supports collaboration, communication, creativity and critical thinking.	0 1 2 3 4	
Rating for Category II: Instructional Supports		___/21

0 = None 1 = Inadequate/Developing 2 = Adequate 3 = Exceeds

Adapted from the EQulP Rubric

SCSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Category III: Monitoring Student Progress

The following categories assess the extent of progress in all three dimensions of the ACS in student sense-making of phenomena and/or design solutions to problems.

	Extent of Quality	Comments
3A. Monitoring 3D student performance: Each district, observable evidence of three-dimensional learning: students are using practices with core ideas and connecting concepts to make sense of phenomena and/or design solutions.	0 1 2 3 4	
3B. Facilitation: Includes facilitator assessment practices throughout that facilitate student learning to address instruction.	0 1 2 3 4	
3C. Learning Guidelines: Includes aligned rubric and scoring guidelines that provide guidance for interpreting student performance along the three dimensions to support teachers in facilitating instruction and in providing ongoing feedback to students.	0 1 2 3 4	
3D. Unfused/Unlinked: Includes student performance using methods, vocabulary, representations, and reasoning that are accessible and appropriate for all students.	0 1 2 3 4	
3E. Coherent Assessment Systems: Includes pre-, formative, summative, and self-assessment systems that assess three-dimensional learning.	0 1 2 3 4	
3F. Opportunity to Learn: Provides multiple opportunities for students to demonstrate performance of practice associated with their understanding of disciplinary core ideas and connecting concepts and crosscutting concepts.	0 1 2 3 4	
Rating for Section III: Monitoring Student Progress		___/18

Category Ratings			TOTAL SCORE
Category I: 3D Design	Category II: Instructional Supports	Category III: Monitoring Student Progress	
___/24	___/21	___/18	___/63

Notes

0 = None 1 = Inadequate/Developing 2 = Adequate 3 = Exceeds

Adapted from the EQulP Rubric

Cover Page

SUSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Secondary Science Curriculum Adoption Curriculum Evaluation Rubric

Scottsdale Unified
SCHOOL DISTRICT

Committee Member ID _____

Material Number _____

Grade/Course Alignment _____

Publisher/Vendor _____

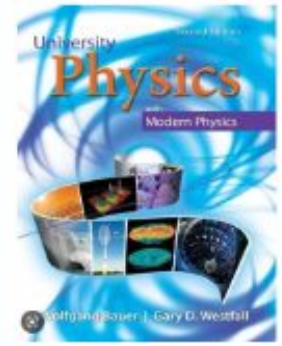
Material/Text Name _____

0 = None 1 = Inadequate/Developing 2 = Adequate 3 = Extensive Adapted from the EQIP Rubric

EXAMPLE PLACARD

SUSD | TEACHING & LEARNING

HS Physics Materials Review

<u>Material Number</u> HSP06	<u>Grade or Course Alignment</u> AP Physics 1 AP Physics 2
<u>Material Name</u> University Physics with Modern Physics, 2nd Edition	
<u>Author Name(s)</u> Baur Westphall	<u>Image</u> 
<u>Publisher Name</u> McGraw Hill	

Category 1: 3D Design

Category 2: Instructional Supports

Category 3: Monitoring Student Progress

SUSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Category I: 3D Design

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 A2SS.

	Evidence of Quality	Comments
1A. 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.	0 1 2 3	
1B. Three Dimensions: Builds understanding of multiple grade-appropriate elements of the SEP, DCI, and CCC 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 Science and Engineering Practices, SEP(s). Curriculum is consistently laboratory/investigation-based.	0 1 2 3	
ii. Provides opportunities to develop and use specific elements of the Core ideas, DCI(s). Core ideas align to grade level/Universe Arizona Science Standards. If applicable, core ideas align to AP Collegeboard, Dual Enrollment, and/or International Baccalaureate competencies.	0 1 2 3	
iii. Provides opportunities to develop and use specific elements of the CCC(s).	0 1 2 3	
1C. Integrating the Three Dimensions: Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEP, CCC, and DCI.	0 1 2 3	
1D. Scientific Accuracy: Uses scientifically accurate and grade-appropriate scientific information, phenomena, and representations to support students' three-dimensional learning.	0 1 2 3	
1E. Multiple Science Domains: When appropriate, links are made across the science domains of life science, physical science and Earth and space science. i. Disciplinary core ideas from different disciplines are used together to explain phenomena.	0 1 2 3	
1F. Interdisciplinary: Provides grade-appropriate connections to other contents (Mathematics, English Language Arts, History/Social Sciences, Technical Subjects, etc.).	0 1 2 3	
Rating for Category I: 3D Design 34-24 points: Move on to Categories II and III as long as there are no 0s or 1s in criteria A-D 0-13 points: The review should stop.	0 1 2 3	0 1 2 3

0 = None 1 = Inadequate/Developing 2 = Adequate 3 = Extensive

Adapted from the EQaIP Rubric

SUSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Category II: Instructional Supports

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.

	Evidence of Quality	Comments
2A. 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. iv. Resources spark student interest.	0 1 2 3	
2B. Student Ideas: Provides opportunities for students to express, clarify, justify, interpret, and represent their ideas and respond to peer and teacher feedback orally and/or in written form as appropriate.	0 1 2 3	
2C. 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.	0 1 2 3	
2D. Unit Coherence: Lessons fit together to target a set of performance expectations. i. Each lesson builds on prior lessons by addressing questions raised in those lessons, cultivating new questions that build on what students figured out, or cultivating new questions from related phenomena, problems, and prior student experiences. ii. The lessons help students develop toward proficiency in a targeted set of performance expectations.	0 1 2 3	
2E. Differentiated Instruction: Provides guidance for teachers to support differentiated instruction by including: i. Supportive ways to access instruction, including appropriate linguistic, visual, and kinesthetic engagement opportunities that are essential for effective science and engineering learning and particularly beneficial for multilingual learners and students with disabilities. 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.	0 1 2 3	
2F. Teacher Support for Unit Coherence: Supports teachers in facilitating coherent student learning experiences over time by: i. Providing strategies for linking student engagement across lessons (e.g., cultivating new student questions at the end of a lesson in a way that leads to future lessons, helping students connect related problems and phenomena across lessons, etc.). ii. Providing strategies for ensuring student sense-making and/or problem-solving is linked to learning in all three dimensions. iii. Resources are available in multiple formats for both students and teachers.	0 1 2 3	
2G. Scaffolded differentiation over time: Provides supports to help students engage in the practices as needed and gradually adjusts supports over time so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems. Supports collaboration, communication, creativity and critical thinking.	0 1 2 3	
Rating for Category II: Instructional Supports	0 1 2 3	0 1 2 3

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Adapted from the EQaIP Rubric

SUSD Secondary Science Curriculum Adoption - Curriculum Evaluation Rubric

Category III: Monitoring Student Progress

The lesson/unit supports monitoring student progress in all three dimensions of the A2SS as students make sense of phenomena and/or design solutions to problems.

	Evidence of Quality	Comments
3A. Monitoring 3D student performance: 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.	0 1 2 3	
3B. Formative: Embeds formative assessment processes throughout that evaluate student learning to inform instruction.	0 1 2 3	
3C. 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.	0 1 2 3	
3D. Unbiased tasks/items: Assesses student proficiency using methods, vocabulary, representations, and examples that are accessible and unbiased for all students.	0 1 2 3	
3E. Coherent Assessment system: Includes pre-, formative, summative, and self-assessment measures that assess three-dimensional learning.	0 1 2 3	
3F. Opportunity to learn: Provides multiple opportunities for students to demonstrate performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts and receive feedback.	0 1 2 3	
Rating for Section III: Monitoring Student Progress	0 1 2 3	0 1 2 3

__/18

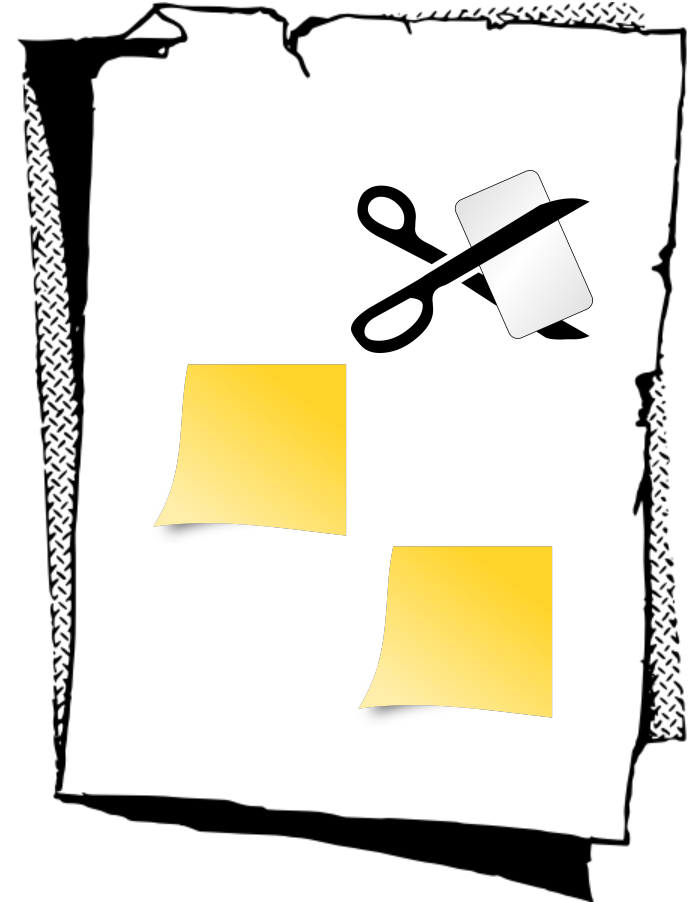
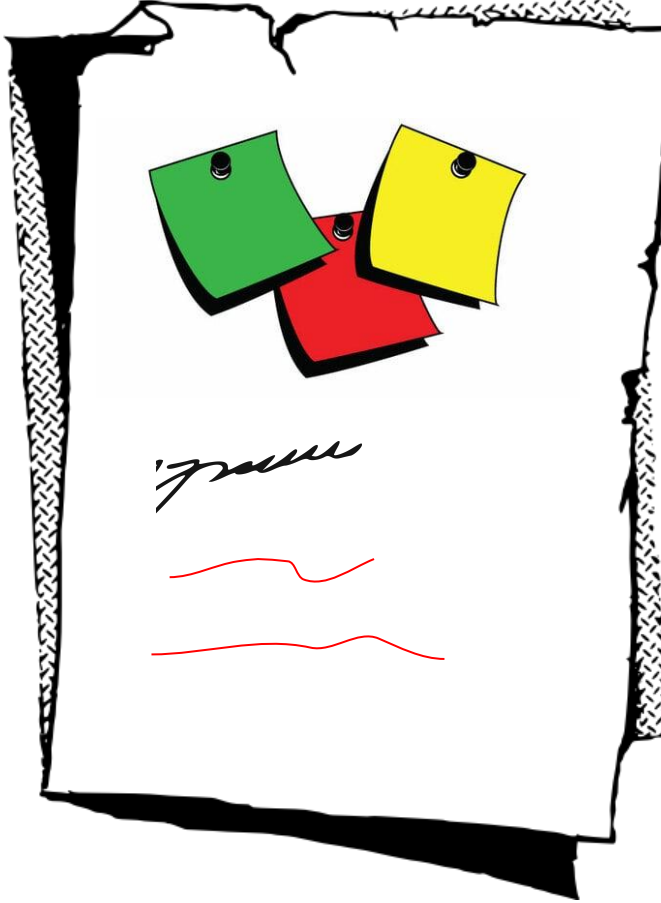
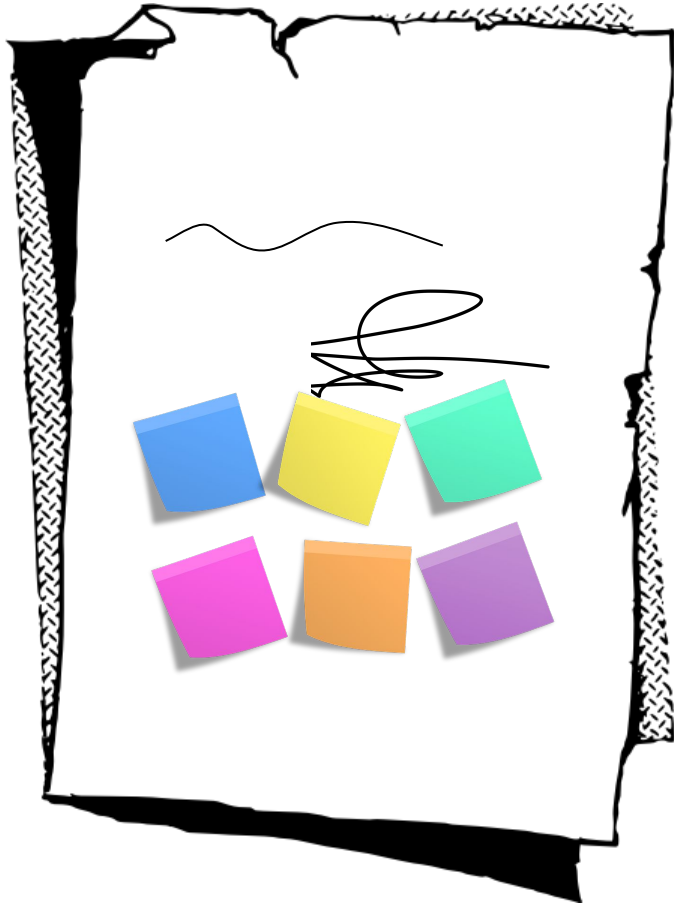
Category Ratings			TOTAL SCORE
Category I: 3D Design	Category II: Instructional Supports	Category III: Monitoring Student Progress	
__/24	__/21	__/18	__/63

Notes

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Adapted from the EQaIP Rubric

Unpacking the Rubric Activity



Calibration Activity

Sample Lesson

Alone Zone

- Review
- Score

Small Group

- Discuss scores within your group

Whole Group

- Share scores
- Noticings and Wonderings

Future Meetings

Next Meetings

Monday, December 4th, 2023 from 3:30 - 5:30
at SUSD Oak Learning Campus 7501 E Oak St, Scottsdale, AZ 85257

Monday, December 11th, 2023 from 3:30 - 5:30
at SUSD Oak Learning Campus 7501 E Oak St, Scottsdale, AZ 85257

Monday, December 18th, 2023 from 3:30 - 5:30
at SUSD Oak Learning Campus 7501 E Oak St, Scottsdale, AZ 85257

*Primary goal of these meetings will be reviewing materials

Meeting
adjourned!

Thank you!

