Implementing High-Quality Performance Assessments in Science – Workshop 2

October 23, 2019



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Welcome and Introductions

CARMEN ARAOZ

Project Manager and TCTS Specialist

Regional Educational Laboratory Appalachia



Meet your presenters



Kori Hamilton Biagas SRI International



Elizabeth McBride SRI International

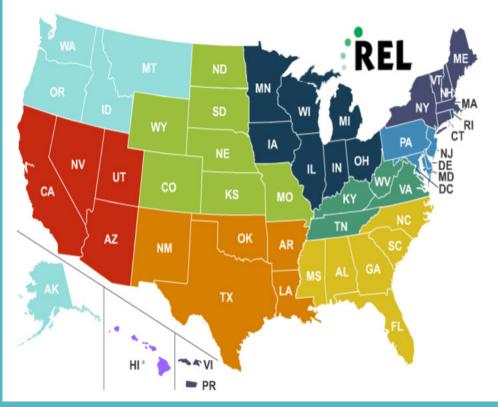


Jessica Bailey Education Development Center



Carmen Araoz SRI International

The Regional Educational Laboratories



Appalachia NW

Pacific*

SE SE

SW

West

- Central
- Mid-Atlantic
- Midwest
- NE & Islands
- * The Pacific Region contains
 Hawaii pictured on the map and
 American Samoa, the
 Commonwealth of the Northern
 Mariana Islands, the Federated
- Kosrae, Pohnpei, & Yap), Guam, the Republic of the Marshall Islands, & the Republic of Palau not pictured on the map

States of Micronesia (Chuuk,

The 10 Regional
Educational
Laboratories (RELs)
work in partnership with
stakeholders to conduct
applied research and
trainings.

The REL mission is to support a more evidence-based education system.

Meeting overview

Session goals

- Participants will increase understanding of the Quality Criteria Tool and a 4-step process to support implementation of performance assessments in Science.
- Participants will develop and deepen understanding of evidence base on the effective design and use of performance assessments

Meeting overview

Agenda

- Welcome and Introductions
- Project review
- Selecting a quality assessment
- Unpacking quality indicators
- Break
- Working with rubrics
- Lunch
- Step 3: How to improve
- Step 4: Planning your assessment and engaging students
- Wrap-up and next steps

Introductions

- Please share your:
 - Name
 - Affiliation
 - Role
 - Plans for implementing a performance assessment





Project Overview

KORI HAMILTON BIAGAS

Dissemination Specialist and TCTS Specialist

Regional Educational Laboratory: Appalachia

REL Appalachia Implementing High-Quality Performance Assessments in Science

P1: Teacher workshops

P3: Webinars

P2: Classroom visits

Implementing High-Quality Performance Assessments in Science – Project Timeline

Task	Year 1: 2019			Year 2: 2020						
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Teacher workshop 1: Intro to Performance Assessments	×									
Teacher workshop 2: Performance Assessment Lesson Review			x							
Classroom visits (recording)			X	x	X					
Teacher debrief (virtual)						×				
Video review and editing							x	x		
Webinar 1: Intro to PBAs									x	
Webinar 2: Examples of PBAs in Use										x

Teacher roles

Workshop participant

- Attend 2 training workshops (August and October)
- Share insights on planning and implementing performance assessments in science
- Provide feedback on materials developed by REL AP

Classroom video recording participant

- Host classroom recording session while implementing a science performance assessment
- Debrief with REL AP team (online)
- Participate in planning calls with REL AP team (online)

We need volunteers

Webinar facilitator

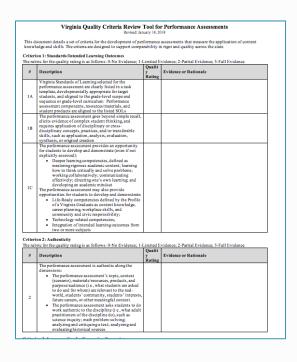
Work with the REL AP team to facilitate one webinar activity



Project meeting schedule: Does this still work?

Activity	Date	Location
Teacher workshop 2	October 23, 2019	Arlington Public Schools District Office
Classroom visits	Nov-Dec 2019	TBD
Teacher debrief	January 2019	Virtual; Zoom meeting room

The Virginia Quality Criteria Review Tool for Performance Assessments



- Criterion 1: Standards/Intended Learning Outcomes
- Criterion 2: Authenticity
- Criterion 3: Language Use for Expressing Reasoning
- Criterion 4: Success Criteria for Students
- Criterion 5: Student Directions, Prompt, and Resources/Materials
- Criterion 6: Accessibility
- Criterion 7: Feasibility

Performance Assessment Participant Workbook*



- The purpose of this workbook is to provide support in the use of the Virginia Quality Criteria Review Tool for Performance Assessments.
- This workbook is intended to complement the in-person workshop.

^{*}The focus of the project and workbook is on science assessments. However, teachers working in other content areas may also find the materials useful.

Performance Assessment Participant Workbook

Define the Purpose & Identify Step 1 Standards and Intended **Learning Outcomes** PRACTICE IT Select the Performance Step 2 Assessment **TOOLS FOR USE** Apply the Virginia Quality Step 3 Criteria Review Tool **FOCUS** Engage Students and Plan to Step 4 Administer Performance Assessment





Selecting a Quality Assessment

BETH MCBRIDE & JESSICA BAILEY

Project Co-leads

Regional Educational Laboratory: Appalachia

4-Step process for implementing performance assessments

Step 1

Define the Purpose & Identify Standards and Intended Learning Outcomes

Step 2

Select the Performance Assessment

Apply the Virginia Quality Criteria Review Tool

Step 4

Engage Students and Plan to Administer Performance Assessment

Step 1

Define the Purpose & Identify Standards and Intended Learning Outcomes

Step 1 of Identifying and Using Performance Assessments addresses the following questions:

- Who is being assessed?
- Why do I need to assess students at this time?
- What is being assessed?

Step 1 of Identifying and Using Performance Assessments addresses the following questions:

- Who is being assessed? [Population]
 For example,
 - Grade 1
 - Students in an AP biology course
- Why do I need to assess students at this time?
- What is being assessed?

Step 1 of Identifying and **Using Performance Assessments addresses** the following questions:

- Who is being assessed?
- Why do I need to assess students at this time?
- What is being assessed?

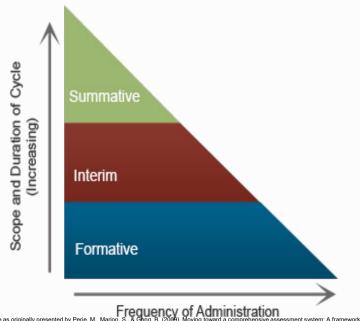


Figure as originally presented by Perie, M., Marion, S., & Obng, B. (2009). Moving toward a comprehensive asse considering interim assessments. Educational Measurement: Issues and Practice, 28(3), 5-13.



PRACTICE IT: Performance Assessment Purpose

0	
	2. What is the purpose of this assessment?
? (formative, interim,	What type(s) of assessment would be most summative)
? (formative, interim,	

Define the Purpose & Identify Standards and Intended Learning Outcomes

Step 1

Define the Purpose & Identify Standards and Intended Learning Outcomes

PRACTICE IT: Performance Assessment Standards and Intended Learning Outcomes Think about the same assessment opportunity you worked on above. Then, list the standards that you intend to measure. Next, specify the associated learning outcomes				
Standard:	Learning Outcome:			

Identifying the Intended Learning Outcomes to Be Assessed

- In this section we will focus on the questions:
- What learning outcomes will I measure through this assessment?
- How do I know if my assessment really measures the learning outcomes I define?



Tool for Analyzing Standards

Focus Standard: Write the complete standard that is the focus of the lesson in this box. Typically, there will only be one standard that is the focus of a lesson. It is acceptable practice to strike through parts of a standard that are not being focused on in the lesson.

KNOWLEDGE AND CONCEPTS (NOUNS)

Identify and list what this standard states and implies about what students should know and what knowledge needs to be taught.

Begin by looking at and analyzing the nouns. If the standard implies specific knowledge (e.g. knowledge of figurative language) then decide what specific knowledge needs to be taught (e.g. metaphors, simile, and foreshadowing).

SKILLS AND PROCESSES (VERBS)

Identify and list what this standard states and implies about what students should be able to do and what skills needs to be taught and

Begin by looking at and analyzing the verbs. If the standard states or implies the ability to engage in a procedure, then identify the specific steps of the procedure.

IMPLICATIONS FOR INSTRUCTION

Make a list of strategies, tools, and/or resources that could be used to teach the knowledge and skills unpacked and defined above.

Identify what knowledge and skills should have already been learned and those that need to be explicitly taught.

IMPLICATIONS FOR ASSESSMENT

Make a list of strategies, tools, and/or resources that could be used to assess the knowledge and skills unpacked and defined above.

Step 1

Define the Purpose & Identify Standards and Intended Learning Outcomes

The Importance of Alignment

Content Standards	Learning Outcomes	Indicators	Aligned Tasks	Level of Complexity	Weight
		Example 1			
Organisms and environments. The student knows all organisms are classified into-groups that share similar characteristics that allow the living and non-living parts of their ecosystem. Students recognize the broad classification categories of common animals.	Students correctly classify common organisms as mammal, bird, fish, reptile or amphibian.	Students are able to identify the characteristics that differentiate an organism into one of the classifications.	Students draw and label an imaginary creature from outer space and describe what it looks like and which features, including life cycle, it has that relegate it to one of the classifications.	Application	50%
		Example 2			
Organisms and environments. The student knows that different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.	Students describe and evaluate the relationship between environment and adaptive features.	Students are able to imagine a reasonable adaptation that an organism would make to an invented environment.	Students draw and label important environmental features (pasies, liquids, gases, temperature, etc.) and explain how their invented organism has adapted to a in that environment.	Application	50%
				Ster	5 1

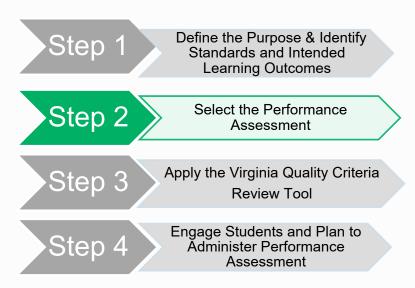
Define the Purpose & Identify Standards and Intended Learning Outcomes

Step 1 Define the Purpose & Identify Standards and Intended Learning Outcomes

The Importance of Alignment

- Are there clear connections between learning outcomes and tasks in my assessment?
- Have I identified which components of the learning outcome(s) have the highest priority or are the most relevant?
- Are there any additional aspects of the learning outcome(s) that are being assessed that I have not clearly identified?
- Does the assessment provide an appropriate number of items or tasks to assess the various knowledge and skills that I need students to demonstrate?
- Is there anything important that I need to see that students won't be able to demonstrate with the task(s)?

Step 2: Select the Performance Assessment



- In step 2 we focus on finding a suitable performance assessment for students to demonstrate the knowledge and skills identified in step 1.
- The key is to determine the quality and relevance of a performance assessment before investing significant amounts of time and effort tailoring the content

Step 2 Select Performance Assessment

Where to Find Performance Assessments?

- School division website
- Teacher lesson plan websites
- From colleagues
- Social media (e.g., Pinterest)
- Science instructional coaches

**It is unlikely that you will find a perfect performance assessment that you can use without revisions. Rather, you may find one that will be a good starting place and meet your needs after making some revisions.

Step 2

Select Performance Assessment

Performance Assessment Checklist		
	YES	NO
The task aligns to the standards and intended learning outcomes that you intend to assess		
The topic is relevant to students' reality/experience, and tasks are authentic to the discipline.		
Multiple pathways for students to express their knowledge and communicate reasoning are present.		
The rubric or scoring tool is included.		
The performance assessment is designed to include all students with differentiated ways to demonstrate knowledge.		
Resources and materials are realistic and easily accessible.		





Unpacking Quality Indicators

BETH MCBRIDE & JESSICA BAILEY

Project Co-leads

Regional Educational Laboratory: Appalachia

Step 3: Apply the Virginia Quality Criteria Review Tool

Step 1

Define the Purpose & Identify Standards and Intended Learning Outcomes

Step 2

Select the Performance Assessment

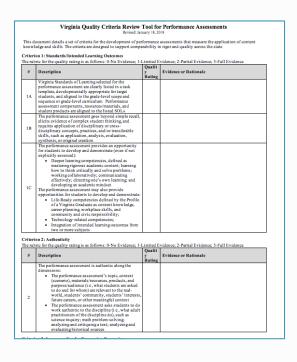
Apply the Virginia Quality Criteria Review Tool

Step 4

Engage Students and Plan to Administer Performance Assessment

- This step involves applying the Quality Criteria Tool (Appendix A) to your selected performance assessment
- Going through this process
 will not only ensure that your
 performance assessment is
 of high quality, bit will also
 assist you in improving the
 quality of your assessment
 as you revise the
 assessment components to
 meet the criteria

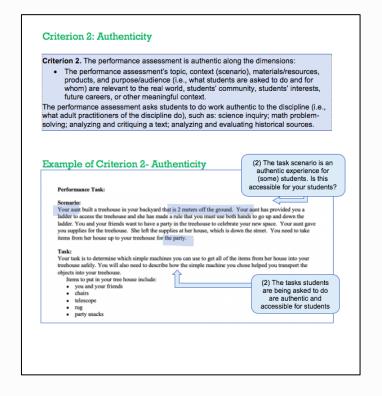
The Virginia Quality Criteria Review Tool for Performance Assessments



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- Criterion 6: Accessibility
- Criterion 7: Feasibility

Criteria Indicators: How to meet the criteria with full evidence

- This section is designed to provide framing and guidance to teachers using the Virginia Quality Criteria Review Tool for Performance Assessments. It includes:
 - Criterion lists the full text for the criterion from the Quality Tool
 - A performance assessment exemplar, with highlights of where to find evidence for each criterion



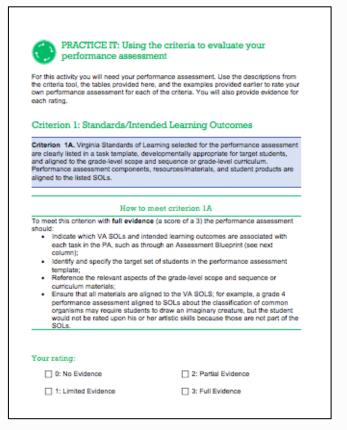
PRACTICE IT:

- Review each criterion together using workbook pages 23-30
- Work with grade-level clusters to identify evidence of quality for each criterion using the Simple Machines performance assessment exemplar.
- Write evidence for each criterion on Postit notes and add to displayed performance assessment
- After completing this activity for each criterion, walk around the room to review the evidence provided by other participants for each criterion.



PRACTICE IT:

- Using the performance assessment you brought with you, rate the assessment on each criterion
- Provide some evidence for why you gave that rating





Working with Rubrics

JESSICA BAILEY

Project Co-lead

Regional Educational Laboratory: Appalachia

Rubrics: A mini lesson



Using a rubric focuses both students and teachers on:

- The importance of learning and understanding.
- Clear expectations for student performance.
- The reliable approaches for scoring student work.
- Meaningful feedback concerning a student's strengths and weaknesses

Types of Rubrics

Generalized Rubrics

- May be used to evaluate a student's performance
- Teacher can use it for any scientific explanation activity assigned as part of the course
- Students are presented clear and consistent criteria for each assignment

Task-Specific Rubrics

- Require specialized performance criteria
- Difficult to use the same rubric across many different assessments
- Allows the teacher to clearly articulate the different criteria that will be involved in identifying the student's level of performance on a particular assessment

Both types of rubrics can improve a student's performance because they make the teacher's expectations clear and show students how they can meet those expectations

Rubrics: A mini lesson

- Before building a rubric, determine the primary purpose of the rubric (e.g., summative, formative, program improvement), and the primary audience for the rubric (students, educators, both).
- For any purpose and any audience, a high-quality rubric is built using learning-centered design principles.



Elements of a Quality Rubric

- Criteria are objective and based on observable behaviors.
- Language clearly communicates expectations for students in audience-friendly language.
- Language focuses on what is present and not just what is absent.
- Rubric clearly communicates strengths and weaknesses and how students may improve their work.
- Rubric provides effective feedback that is directly related to student performance on the assessment or task.
- Each performance level is clearly stated so that it can easily be distinguished from the others.

Reasons to Use Rubrics

- Rubrics enable multiple evaluators to apply the same criteria to evaluating assessments, which increases the reliability of scoring.
- Rubrics may be used to provide formative feedback for drafts of work before a final submission is due. For example, a student can use a rubric to assess his or her peers' work.
- Rubrics allow teachers to help students understand more clearly and completely how the teacher evaluated their work or performance.
- Rubrics also help teachers authentically monitor a student's learning process.
- Rubrics may inform instructional practice by allowing teachers to modify future lessons based on student performance.

Some things to remember about rubrics

- It is important to remember that student performance on an assessment should inform instruction.
- Be attentive to patterns that may suggest the need to modify instruction or the need to revisit the content, based on patterns that emerge across student performance using the rubric.



1,1

PRACTICE IT: Creating a rubric

Imagine you are Paul Hollywood or Prue Leith from the Great British Bake Off. You are tasked with judging the quality of the contestants' cakes for the Queen's birthday cake.

Create a rubric for Cake Quality

- List your criteria
- List the levels of performance
- Write performance descriptors

How would you decide who is a star baker and who is going home?







How to Improve

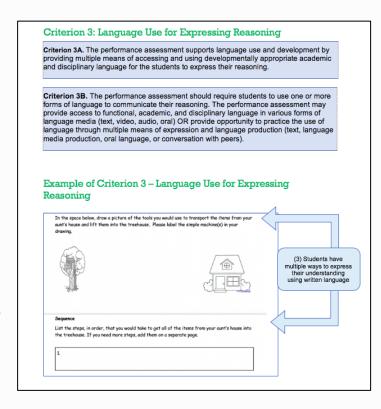
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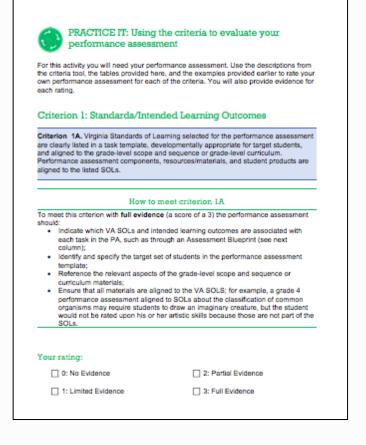


- Review the Simple Machines exemplar
- Work in groups of 2-3
 - Select 1 or 2 criteria from the performance assessments that do not fully meet quality standards
 - O How could you improve the performance assessment to meet this criterion?
 - Write your suggestions on a Post-it note. Post your suggestions on the simple machines poster





- Using the Performance Assessment example you brought with you, select one criterion that you want to focus on improving
- Take turns sharing the area of improvement with your table mates
- Pass your performance assessment to the left
- Each table mate should add one suggestion for improving the performance assessment



Discuss

- What was the most important thing you discovered during your review?
- What is something your performance assessment does very well?
- What is something you will need to change about your performance assessment?



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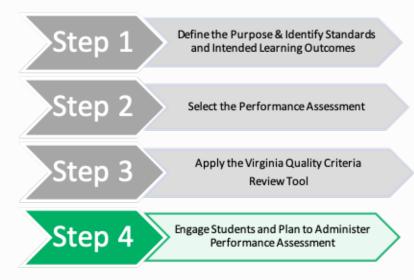
Planning your Assessment and Engaging Students

JESSICA BAILEY

Project Co-lead

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Step 4: Engage Students and Plan to Administer Performance Assessment



- This step focuses on the ways in which students can be engaged in the assessment process and the preparation needed to implement a performance assessment.
- This step addresses the questions:
 - O How can I ensure that students are actively engaged in the assessment process?
 - O How much time and what resources are adequate for the classroom assessment?

Strategies for engaging students in assessment planning

Student-led conferences
 allow students to reflect on and
 share their work or progress
 over a period of time with their
 parents or guardian and
 teacher.



Strategies for engaging students in assessment planning



- Peer assessment involves
 students assessing the work of
 their peers against a set of
 assessment criteria. They can
 provide feedback to their peers as
 well as a score or grade.
- Benefits include:
 - becoming more familiar with the rubric assessment and evaluation criteria.
 - the student can use the feedback she receives from her peers to improve her performance.

Strategies for engaging students in assessment planning

- Self-assessment involves students reflecting on their own work, such as using a rubric, or reflecting on their work by writing in a journal.
- The process emphasizes the opportunity for students to identity high-quality work, rather than simply providing a grade.



Benefits include:

 may help students recognize the quality of their current performance and how to improve their performance to achieve the learning outcome(s).

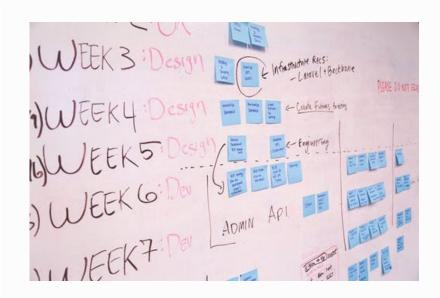
Assessment Planning

- Classroom assessment practices require adequate preparation to obtain accurate information about student learning.
- If we want our students to benefit from the assessment experience, both teachers and students must adequately prepare for the assessment.
- When planning your assessment, consider:
 - Time
 - Assessment materials
 - Administration instructions
 - Evaluation materials

Considerations for Designing an Assessment Plan

Considerations for Design

- Timeframe
- Integration of subjects
- Cognitive demand/rigor
- Level of inquiry
- Degree of authenticity
- Audience(s) for student product(s)/ performance(s)
- Access to resources



Considerations for Designing an Assessment Plan (cont.)

Considerations for Design (cont.)

- Direction (Teacher-Student)
- Student choice
- Degree of scaffolding
- Performance mode
- Evaluation of student
- Products/Performances





Wrap-up and Next Steps

CARMEN ARAOZ

Project Manager and TCTS Specialist

Regional Educational Laboratory: Appalachia

Project meeting schedule: Does this still work?

Activity	Date	Format; Location
Teacher workshop 2	October 23, 2019	Arlington Public Schools District Office
Classroom visits	Nov-Dec 2019	TBD
Teacher debrief	January/Feb 2019	Virtual; Zoom meeting room

Closing reflections

- Please share one takeaway from today's training
- Complete the short survey before leaving



Ask A REL

Ask A REL is a collaborative reference desk service provided by the 10 RELs that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations to research-based education questions.

https://ies.ed.gov/ncee/edlabs/regions/appalachia/ask-a-rel.asp

Example:

What type of mathematical skills and knowledge predict success in algebra I? What does the research say about strategies or interventions to improve algebra readiness (particularly in middle school)?

https://ies.ed.gov/ncee/edlabs/regions/appalachia/askarel/aar05.asp

REL Appalachia Newsletter

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Thank you!

REL Appalachia





