

# Implementing High-Quality Performance Assessments in Science – Workshop 1

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August 7, 2019





# Welcome and Introductions

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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

# Meeting overview

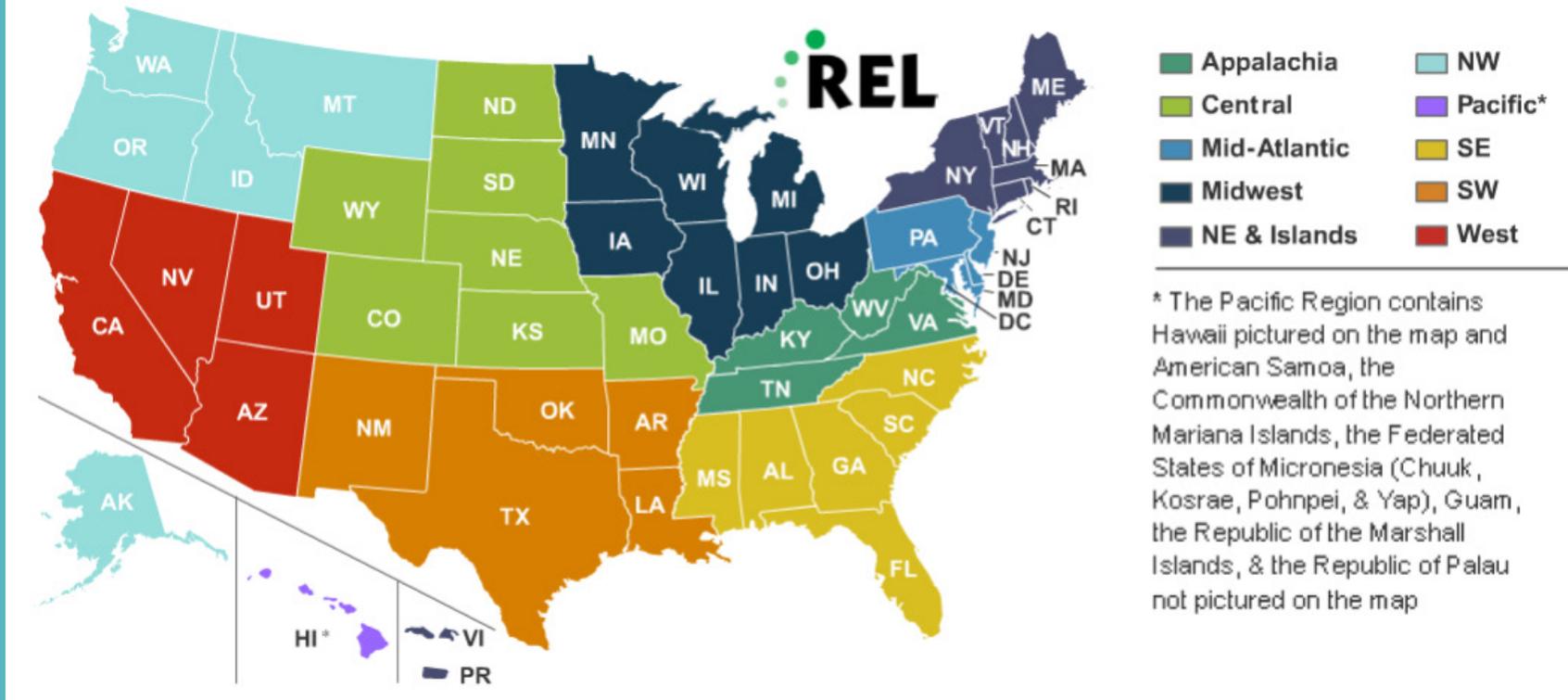
## Session goals

- Develop and deepen understanding of evidence base on the effective design and use of performance assessments
- Introduce participants to the REL AP Performance Assessment Project
- Review and elicit feedback on the 4-step process for implementing performance assessments in science

## Agenda

- Welcome and Introductions
- Project Overview
- Performance Assessments: What do research and experience tell us?
- Supporting Implementation of the Virginia Quality Criteria Review Tool
- Wrap-up and Next Steps

# The Regional Educational Laboratories



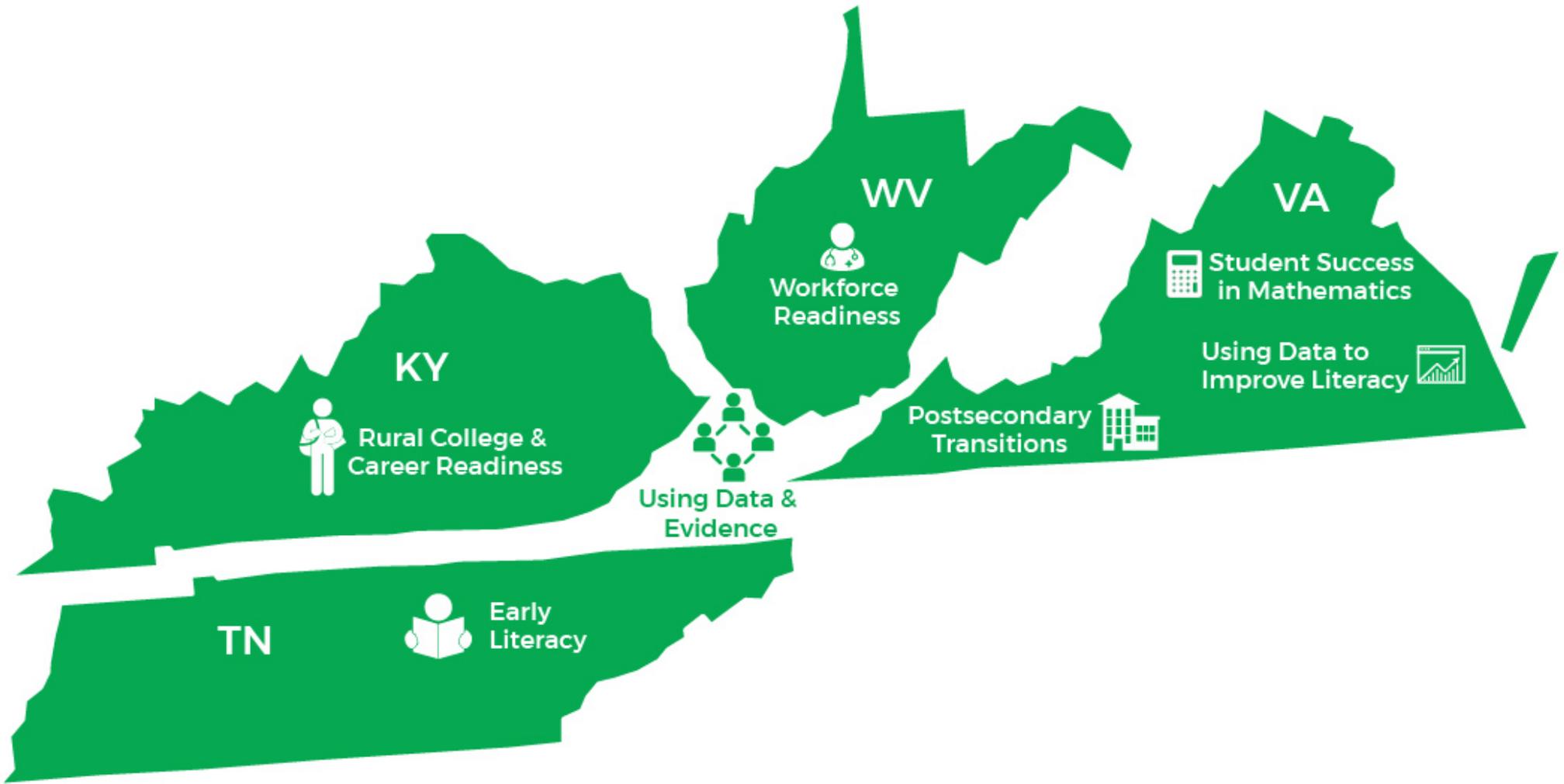
The 10 Regional Educational Laboratories (RELs) work in partnership with stakeholders to conduct applied research and trainings.

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

Administered by the U.S. Department of Education, Institute of Education Sciences (IES)

Find us on the web! <https://ies.ed.gov/ncee/edlabs/regions/appalachia/>

# REL Appalachia's Service Area



# Working with the REL Program

- Sustain **partnerships** that use research to address high-leverage issues
- Complete coherent and cumulative **research agendas**
- Use REL AP as **key resource** for credible research and support
- **Increase capacity** to access, understand, interpret, apply, and conduct research
- **Increase use** of research findings in education decisionmaking



# My name is....

- Please share your:
  - Name
  - Affiliation
  - Role
  - Familiarity with performance assessments





# Project Overview

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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	X									
Teacher workshop 2: Performance Assessment Lesson Review			X							
Classroom visits (recording)			X	X	X					
Teacher debrief (virtual)						X				
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

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

## Webinar facilitator

- Work with the REL AP team to facilitate one webinar activity

# Teacher incentives

- Improved ability to select, enhance, and implement high-quality performance assessments
- VASCD Summer Conference on Teaching and Learning registration
- Professional development points
  - Workshop participant (4 points for workshop #1 and 6 points for workshop #2)
  - Classroom video recording participant (4 points)
  - Webinar facilitator (4 points/webinar)

## Implementing High-Quality Performance Assessment



Task	Year 1: 20		
	Aug	Sept	Oct
Teacher workshop 1: Intro to Performance Assessments	X		
Teacher workshop 2: Performance Assessment Lesson Review			X



# Performance Assessments: What do research and experience tell us?

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JESSICA BAILEY

Project Co-lead

*Regional Educational Laboratory: Appalachia*

# Defining performance assessments

An assessment that requires students to apply complex knowledge and skills to construct an answer, produce a product, or perform an activity

Parsi, A., & Darling-Hammond, L. (2015). *Performance assessments: How state policy can advance assessments for 21st century learning*. White Paper. National Association of State Boards of Education.

McTighe, J. (2014). *Designing cornerstone performance tasks to promote meaningful learning and assess what matters most*. Retrieved from: <https://www.nsbds.org/cms/lib01/AK01001879/Centricity/Domain/769/JaysMasterHandoutfor%20CAIM%202014.pdf>

# Using performance assessments

- Measure skills other than content knowledge<sup>1</sup>
- Performance assessments can be used to evaluate:
  - Higher order thinking skills (e.g., critical thinking, problem solving)
  - Interpersonal skills (e.g., collaboration, effective communication)
  - Soft skills (e.g., motivation, persistence, learning to learn)
  - Ability to apply knowledge and skills to a novel context

<sup>1</sup> National Research Council. (2011). *Assessing 21st century skills: Summary of a workshop*. Washington, DC: National Academies Press.

# Types of performance assessment

- Essays and reports
- Individual or group projects
- Demonstrations
- Performances
- Portfolios
- Journals or student logs
- Creating a simple machine to move objects

**Example:** Producing a public service announcement on the impact of poor water quality

**Example:** Constructing open and closed circuits to show how a room with two doors is wired

# Components of a performance assessment

- Standards and learning expectations being assessed
- Relevant background information (grade, subject, title, materials list)
- Performance task(s)
  - Including any specific directions for students
- Administration information
  - Including directions for teachers
- Rubric for scoring

# Performance assessment benefits and limitations

## **Discuss:**

What are some of your ideas about the benefits and limitations of performance assessments?



# Benefits of performance assessment

- Assess complex standards and skills
- Engage students
- Support personalization
- Build authentic experiences
- Provide formative and summative feedback



# Research on performance assessment

## Performance assessments:

- support changes in instructional practice<sup>1</sup>
  - Help teachers develop strategies that deepen students' critical thinking and problem solving<sup>2</sup>
  - Increase use of complex problem solving and reasoning in the classroom<sup>3</sup>
- increase students' academic and interpersonal skill development, engagement, and post-secondary success<sup>4</sup>
- strengthen students' complex conceptual understandings<sup>5</sup>

<sup>1</sup> Koretz, D., Mitchell, K., Barron, S., & Keith, S. (1996). *The perceived effects of the Maryland school performance assessment program*. Los Angeles, CA: Center for Research on Evaluation, Standards, and Student Assessment, University of California at Los Angeles;

Darling-Hammond, L., & Wood, G. H. (2008). *Assessment for the 21st Century: Using performance assessments to measure student learning more effectively*. Stewart, OH: Forum for Education and Democracy.

<sup>2</sup> Faxon-Mills, S., Hamilton, L. S., Rudnick, M., & Stecher, B. M. (2013). *New assessments, better instruction?: Designing assessment systems to promote instructional improvement*. Los Angeles, CA: RAND Corporation.

<sup>3</sup> Hofman, P., Goodwin, B., & Kahl, S. (2015). *Re-balancing assessment: Placing formative and performance assessment at the heart of learning and accountability*. Denver: McREL International;

Lane, S., Parke, C. S., & Stone, C. A. (2002). The impact of a state performance-based assessment and accountability program on mathematics instruction and student learning: Evidence from survey data and school performance. *Educational Assessment*, 8(4), 279–315.

<sup>4</sup> Foote, C. J. (2005). The challenge and potential of high-need urban education. *Journal of Negro Education*, 74(4), 371–381.

<sup>5</sup> Chung, G. K., & Baker, E. L. (2003). An exploratory study to examine the feasibility of measuring problem-solving processes using a click-through interface. *Journal of Technology, Learning and Assessment*, 2(2).

# Factors to consider

- May take extra time to administer
- Requires significant teacher preparation
- Can be time consuming to score/evaluate student performance



# Supporting Use of the Virginia Quality Criteria Review Tool

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BETH MCBRIDE

Project Co-lead

*Regional Educational Laboratory: Appalachia*

# The Virginia Quality Criteria Review Tool for Performance Assessments

**Virginia Quality Criteria Review Tool for Performance Assessments**  
Revised: January 18, 2018

This document details a set of criteria for the development of performance assessments that measure the application of content knowledge and skills. The criteria are designed to support comparability in rigor and quality across the state.

**Criterion 1: Standards/Intended Learning Outcomes**  
The rubric for the quality rating is as follows: 0-No Evidence; 1-Limited Evidence; 2-Partial Evidence; 3-Full Evidence

#	Description	Quality Rating	Evidence or Rationale
1A	Virginia Standards of Learning selected for the performance assessment are clearly listed in a task template, developmentally appropriate for target students, and aligned to the grade-level scope and sequence or grade-level curriculum. Performance assessment components, resources/materials, and student products are aligned to the listed SOLs.		
1B	The performance assessment goes beyond simple recall, elicits evidence of complex student thinking, and requires application of disciplinary or cross-disciplinary concepts, practices, and/or transferable skills, such as application, analysis, evaluation, synthesis, or original creation.		
1C	The performance assessment provides an opportunity for students to develop and demonstrate (even if not explicitly assessed): <ul style="list-style-type: none"> <li>Deeper learning competencies, defined as mastering rigorous academic content; learning how to think critically and solve problems; working collaboratively; communicating effectively; directing one's own learning; and developing an academic mindset.</li> </ul> The performance assessment may also provide opportunities for students to develop and demonstrate: <ul style="list-style-type: none"> <li>Life-Ready competencies defined by the Profile of a Virginia Graduate as content knowledge, career planning, workplace skills, and community and civic responsibility;</li> <li>Technology-related competencies;</li> <li>Integration of intended learning outcomes from two or more subjects.</li> </ul>		

**Criterion 2: Authenticity**  
The rubric for the quality rating is as follows: 0-No Evidence; 1-Limited Evidence; 2-Partial Evidence; 3-Full Evidence

#	Description	Quality Rating	Evidence or Rationale
2	The performance assessment is authentic along the dimensions: <ul style="list-style-type: none"> <li>The performance assessment's topic, context (scenario), materials/resources, products, and purpose/audience (i.e., what students are asked to do and for whom) are relevant to the real-world, students' community, students' interests, future careers, or other meaningful context.</li> <li>The performance assessment asks students to do work authentic to the discipline (i.e., what adult practitioners of the discipline do), such as science inquiry; math problem-solving; analyzing and critiquing a text; analyzing and evaluating historical sources.</li> </ul>		

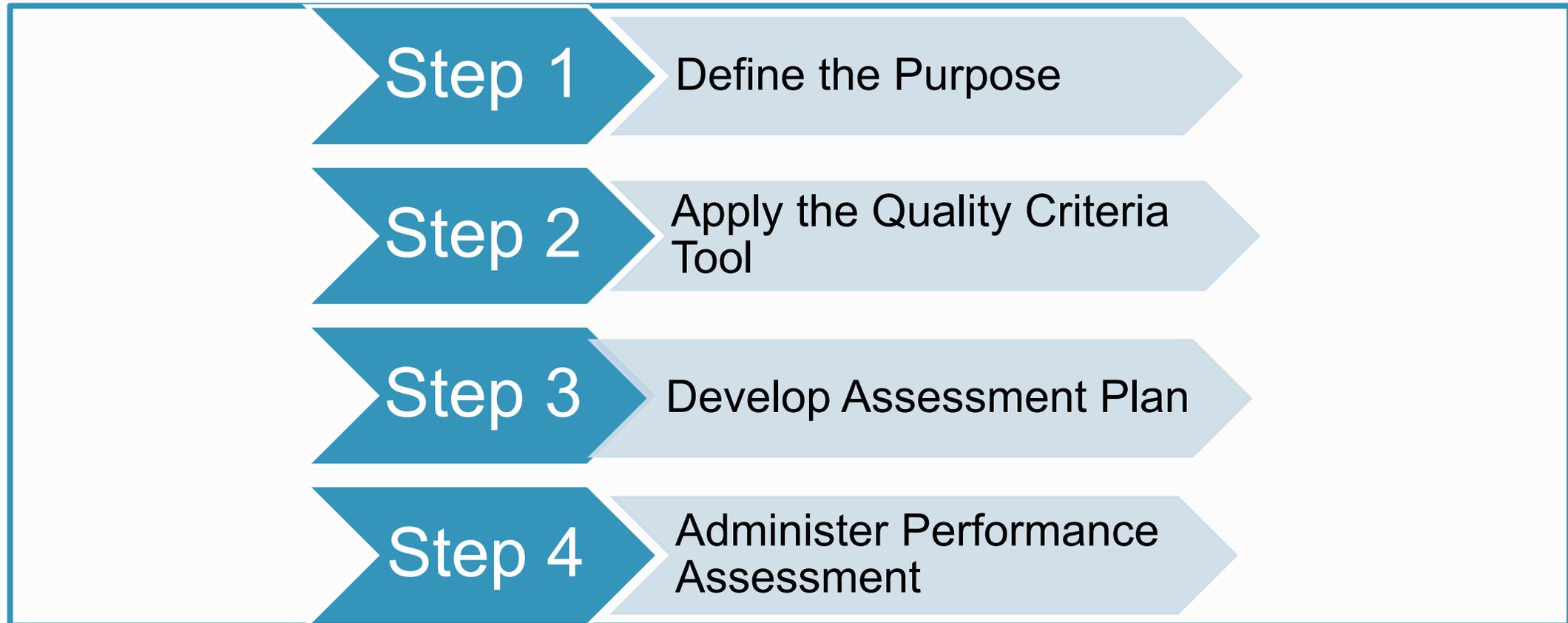
- Criterion 1: Standards/Intended Learning Outcomes
- Criterion 2: Authenticity
- Criterion 3: Language Use for Expressing Reasoning
- Criterion 4: Success Criteria for Students
- Criterion 5: Student Directions, Prompt, and Resources/Materials
- Criterion 6: Accessibility
- Criterion 7: Feasibility

# A deeper look: The Virginia Quality Criteria Review Tool for Performance Assessments

- In groups of 2-3, review The Virginia Quality Criteria Review Tool for Performance Assessments for your assigned criteria.
  - Highlight key words in the description of the criteria.
  - Use the chart paper to write a one-to two-sentence description of the criteria in your own words.
- Be prepared to share your description with the larger group.



# 4-Step process for implementing performance assessments



# Step 1

## Define the Purpose

### *Performance Assessment Purpose*

1. What is your intended learning goal for students?
2. What is the aim of the performance assessment (formative, summative, peer assessment, self-assessment, etc.)?
3. What content standards does the performance assessment need to address?
4. How are learning goals for students related to the content standards being addressed?
5. What skills and practices do students need to demonstrate in order to successfully complete the performance assessment?

# Step 1

## Define the Purpose

### Performance Assessment Checklist

	YES	NO
<b>The standard, skills, or intended learning outcomes are present.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>The topic is relevant to students' reality/experience, and tasks are authentic to the discipline.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Multiple pathways are present for students to express their knowledge and communicate reasoning.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>The rubric or scoring tool is included and written in student-friendly language.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Student-facing tasks are aligned with what is being assessed and are written in student-friendly language.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>The performance assessment is designed to include all students, with differentiated ways to demonstrate knowledge.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Resources and materials are realistic and easily accessible.</b>	<input type="checkbox"/>	<input type="checkbox"/>

# Step 1

## Define the Purpose

### Let's practice

- Review sample performance assessments
  - 1 “found” performance assessment
  - 1 Virginia Department of Education exemplar
- In your groups, review the scenario and questions in Handout 2 to define the purpose of the performance assessment
- Next, use the Performance Assessment Activity checklist (Handout 3) to choose a performance assessment from the examples



## Step 2

# Apply the Quality Criteria Tool

### Criterion 1: Standards/Intended Learning Outcomes

Criterion 1B. The performance assessment goes beyond simple recall, elicits evidence of complex student thinking, and requires application of disciplinary or cross-disciplinary concepts, practices, and/or transferable skills, such as application, analysis, evaluation, synthesis, or original creation.

Description	How to meet this criterion	How do I improve a rating?
<p>This criterion refers to the depth of knowledge (Webb, 1997; 2006) or cognitive complexity (Bloom, 1956; Anderson &amp; Krathwohl, 2001) of the performance tasks. PAs require students to apply complex knowledge and skills to construct an answer, produce a product, or perform an activity. Thus they require high levels of cognitive complexity.</p>	<p>To meet this criterion with <b>full evidence</b> (a score of a 3) the level of complexity of each task should be indicated in the task template. The tasks should elicit evidence of complex student thinking and require application of disciplinary or cross-disciplinary concepts, practices, and/or transferable skills.</p> <p>For assistance in determining the appropriate level of complexity consult a model of cognitive complexity, such as the updated Bloom Taxonomy (see appendix ##).</p>	<p>If an existing assessment does not fully meet this criterion, consider adding an additional task so that together the tasks collectively address different levels of cognitive complexity. For example, one grade 4 science PA task could require that students apply their knowledge, while another task requires them to evaluate the relationship between two phenomena, such as the relationship between an organism's environment and its adaptive features.</p>

## Step 2

## Apply the Quality Criteria Tool

# Let's practice

### Group directions:

- In your groups, review Handout 4 – Quality Criteria Tool Supplemental Tables
- Review the guidance provided for the criterion assigned to your group. What elements need to be present for a performance assessment to score a 3 for that criterion?
- Using the Quality Criteria Tool and the example performance assessment you selected earlier, provide a rating for your criterion.
  - Be sure to list evidence for your rating.
- Share your ratings with your small group and note any differences in both the scores awarded and the evidence used to support the rating. Be prepared to share a final rating and evidence for your rating with the whole group.

# Teacher feedback on steps 1 and 2

- How did these steps help you identify the purpose of the performance assessment?
- How did these steps help you identify which performance assessment to use for the scenario?
- What other advice would you suggest for teachers in the preliminary stages of implementing a performance assessment?
- What additional supports or resources would you need to implement steps one and two on your own?



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# Wrap-up and Next Steps

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CARMEN ARAOZ

Project Manager and TCTS Specialist

*Regional Educational Laboratory: Appalachia*

# Project meeting schedule



Activity	Date	Format; Location
Teacher workshop 2	October 2019	Face to face; TBD
Classroom visits/check-ins	Nov–Dec 2019	TBD
Teacher debrief	January 2019	Virtual; Zoom meeting room

# Training workshop 2: Tell us what you want to know

- Review of steps 3 and 4
- How to align performance assessment with content standards
- How to create a quality rubric
- What to consider when it's time to administer

# Closing reflections

- Please share:
  - One takeaway from today's training
  - One question from today's training
  - How you plan to implement one thing you learned today when you are back in the classroom

# 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>



# Ask A REL

## Ask A REL Instructions

To ask an education-focused question, please complete the question submission form below:

1. Include your name and email address
2. Select your state from the drop-down menu
3. Type your question in the box
4. To receive a copy of your question, check the box "I would like to receive a copy of my question sent to my e-mail."

**Note:** The questions you submit are sent directly to the REL selected and not stored on this site or by the Institute of Education Sciences. To ask a question or to provide a comment about the Regional Educational Laboratory Program or the Institute of Education Sciences, select the "Contact" button at the top of this page.

\* Full Name:

\* Email:

\* Confirm Email:

\* State:

\* Question

I would like to receive a copy of my question sent to my email.



# REL Appalachia Newsletter

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*September 2017 - In This Issue:*

- MESSAGE FROM DIRECTOR
- PROJECT UPDATES
- STAFF HIGHLIGHTS
- COMING SOON

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Regional Educational Laboratory  
At SRI International

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Regional Educational Laboratory  
At SRI International

**MESSAGE FROM DIRECTOR**

As a resident and parent in the REL Appalachia (REL AP) region, I have the honor to serve the amazing and diverse REL AP communities throughout Kentucky, Tennessee, Virginia, and West Virginia. As the Director of REL AP, I am thrilled to be leading an incredibly talented team of researchers, technical assistance providers, and communications experts who work in partnership with equally talented leaders in school districts, state departments of education, and elsewhere to carry out and use research to improve student academic outcomes in the region.



# Thank you!

## REL Appalachia



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