

Developing High Quality Rubrics for Performance Based Assessments

APPLYING LEARNING-CENTERED DESIGN PRINCIPLES

October 3, 2017



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

About SCALE at Stanford University

The Stanford Center for Assessment, Learning, and Equity (SCALE) is a research and practice center based at Stanford University that focuses on performance assessment in K-16 settings.

SCALE's MISSION is to create more meaningful and equitable learning experiences for all students—especially English learners and those who are underserved—by supporting the strategic integration of language use, disciplinary learning and performance-based assessment in the classroom.

Webinar Facilitators

Laura Gutmann, Moderator

Vinci Daro, Director of Mathematics Learning

Nicole Holthuis, Senior Science Learning Associate

Nicole Merino, Director of Teaching Performance Assessment
& Early Childhood Learning

Ruth Chung Wei, Associate Director



EXPLAIN TYPES
OF SCORING
SYSTEMS



EXPLORE COMMON
ANALYTIC
RUBRICS



IDENTIFY KEY FEATURES
OF HIGH QUALITY
SCORING RUBRICS

WEBINAR GOALS



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Learning Centered Design

RIGOROUS



EDUCATIVE



EQUITABLE



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

PERFORMANCE ASSESSMENT

Assessment for and as Learning



Performance Task Design Process



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Decision Points

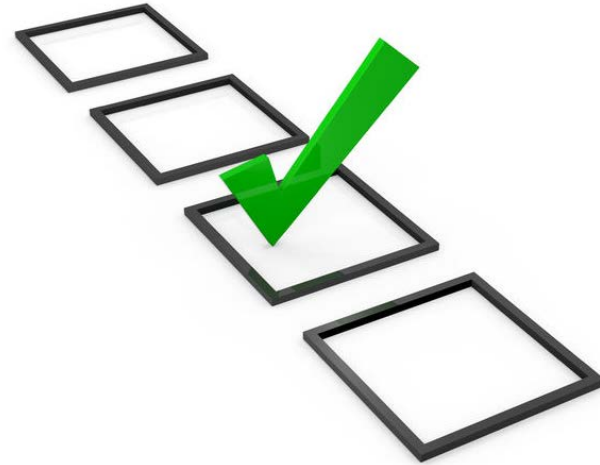
- What type of scoring tool? (What is my purpose? What type of task?)
- How many scoring dimensions?
- How many score levels? Level labels?
- How many indicators?
- What kind of language should I use? (Who is my audience/primary user? Student-facing and/or Teacher-facing?)

WHAT ARE DIFFERENT TYPES OF SCORING SYSTEMS?

Checklists

Point scoring systems

Scoring Rubrics



HOW DO I CHOOSE?

Assignment

Consider
your task



Consider your
purpose



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Checklist Example



- ☐ Checks and adjusts rearview mirror and side mirrors before shifting the car to drive
- ☐ Checks mirrors and area around car before backing out of parking space
- ☐ Stays within the speed limit
- ☐ Maintains a safe following distance
- ☐ Signals before turning ____ / ____ times
- ☐ Signals before changing lanes ____ / ____ times
- ☐ Makes safe turns ____ / ____ times
- ☐ Parallel parks successfully





SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

CHECKLIST

Quantitative
requirements
are okay



Focuses on task
elements that are
either present or
not present



Task
specific
scoring



SCALE

Stanford Center for Assessment, Learning, & Equity

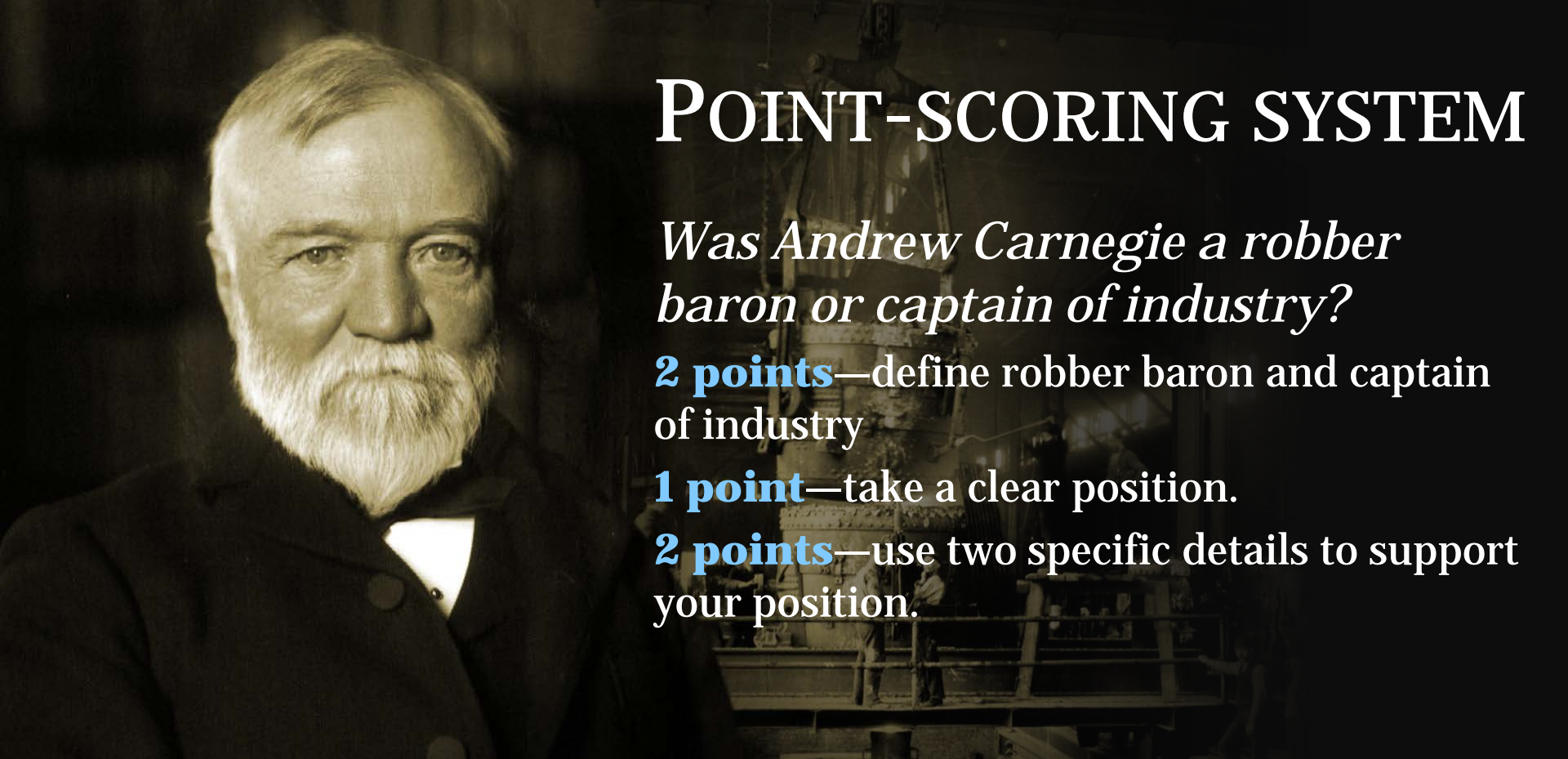
© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)



POINT-SCORING SYSTEM

Was Andrew Carnegie a robber baron or captain of industry?

2 points—define robber baron and captain of industry

1 point—take a clear position.

2 points—use two specific details to support your position.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

POINT-SCORING SYSTEM

1

*Shorter constructed
response items,
mathematics
performance tasks*

2

*Describes full
credit and partial
credit responses*

3

*Task specific
scoring*



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

SCORING RUBRIC

Advanced Pathways Performance Assessment Common Rubrics: *EFFECTIVE COMMUNINCATION - WRITING*

SCORING DOMAIN	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT	P/A	ADVANCED
ARGUMENT A What is the evidence that the student can develop an argument or thesis and draw meaningful connections and conclusions?	<ul style="list-style-type: none"> Argument thesis is unclear or underdeveloped Draws superficial connections or conclusions 		<ul style="list-style-type: none"> Presents a somewhat clear, but general argument/thesis Draws general or broad connections or conclusions 		<ul style="list-style-type: none"> Presents a clear and well developed argument/ thesis Makes specific connections and draws logical conclusions that follow from the argument/thesis 		<ul style="list-style-type: none"> Presents a clear, well developed, and convincing argument thesis that demonstrates original thinking Makes insightful connections, draws logical and meaningful conclusions, and raises important implications
ARGUMENT B What is the evidence that the student considers counter-claims?	<ul style="list-style-type: none"> One claim dominates the argument and alternative or counter-claims are absent 		<ul style="list-style-type: none"> Briefly alludes to questions, counter-claims, or alternative interpretations when appropriate 		<ul style="list-style-type: none"> Acknowledges questions, counter-claims, or alternative interpretations when appropriate 		<ul style="list-style-type: none"> Acknowledges questions, counter-claims, or alternative interpretations when appropriate
EVIDENCE A What is the evidence that the student can support the argument or thesis?	<ul style="list-style-type: none"> Relies on one or two reasons, examples, or quotations relevant to argument/thesis 		<ul style="list-style-type: none"> Refers to limited evidence (reasons, examples or quotations) relevant to argument/thesis 		<ul style="list-style-type: none"> Refers to sufficient and detailed evidence (reasons, examples, and quotations) relevant argument/thesis 		<ul style="list-style-type: none"> Refers to sufficient and detailed evidence (reasons, examples, and quotations) relevant argument/thesis
EVIDENCE B What is the evidence that the student recognizes the limitations of sources?	<ul style="list-style-type: none"> Information from sources is indiscriminately presented as fact OR One source dominates 		<ul style="list-style-type: none"> Compares the point of view of two or more sources 		<ul style="list-style-type: none"> Evaluates points of view, purposes or other context information to asses credibility of sources 		<ul style="list-style-type: none"> Evaluates points of view, purposes or other context information to asses credibility of sources



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Holistic Rubric Example

LDC Argumentation Rubric for Teaching Task ADVANCED	
Focus	Addresses all aspects of the prompt with a highly focused and convincing response.
Reading/Research	Demonstrates accurate and effective use of reading materials to develop argument proposal and a solid understanding of content as presented in the prompt.
Controlling Idea	Establishes a substantive and credible claim or proposal (L2) Acknowledges relevant competing arguments, defending or qualifying the claim or proposal as appropriate.
Development	Develops a detailed and convincing argument or proposal; provides relevant evidence in the form of examples or explanations with statements from reading material. (L2) Makes a clarifying connection(s) that illuminates argument and adds depth to reasoning.
Organization	Applies an appropriate text structure that develops reasoning; applies a logic mode such as deductive reasoning.
Conventions	Demonstrates a well-developed command of standard English conventions and cohesion; employs language and tone appropriate to audience and purpose.
MEETS EXPECTATIONS	
Focus	Addresses the prompt and stays on task; provides a generally convincing response.
Reading/Research	Demonstrates generally effective use of reading materials to develop argument or proposal and an understanding of the content as presented in the prompt.
Controlling Idea	Establishes a credible claim or proposal (L2) Acknowledges competing arguments and defends the claim or proposal.
Development	Develops a satisfactory argument or proposal using reasoning with adequate detail support claim or proposal; provides evidence from text(s) in the form of examples or explanations relevant to the argument or proposal. (L3) Makes a relevant connection that helps to clarify argument or proposal.
Organization	Applies an appropriate text structure that develops reasoning; applies a logic mode
Conventions	Demonstrates a satisfactory command of standard English conventions and cohesion; employs language and tone appropriate to audience and purpose.
NOT YET	
Focus	Attempts to address prompt but lacks focus or is off-task.
Reading/Research	Demonstrates weak use of reading materials to develop argument or proposal.
Controlling Idea	Establishes a claim or proposal but is weak or off task; (L2) Attempts to acknowledge competing arguments.
Development	Lacks details to support reasoning; examples or explanations are weak or not relevant. (L3) Connection is not relevant.
Organization	Provides a weak text structure; composition is confusing.
Conventions	Demonstrates a weak command of standard English conventions; lacks cohesion; language and tone are not appropriate to audience and purpose.

Literacy

Design

Collaborative:

Writing an
Argument



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

ANALYTIC RUBRIC

Advanced Pathways Performance Assessment Common Rubrics: *EFFECTIVE COMMUNICATION - WRITING*

SCORING DOMAIN	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT	P/A	ADVANCED
ARGUMENT A What is the evidence that the student can develop an argument or thesis and draw meaningful connections and conclusions?	<ul style="list-style-type: none"> Argument thesis is unclear or underdeveloped Draws superficial connections or conclusions 		<ul style="list-style-type: none"> Presents a somewhat clear, but general argument/thesis Draws general or broad connections or conclusions 		<ul style="list-style-type: none"> Presents a clear and well developed argument/ thesis Makes specific connections and draws logical conclusions that follow from the argument/thesis 		<ul style="list-style-type: none"> Presents a clear, well developed, and convincing argument thesis that demonstrates original thinking Makes insightful connections, draws logical and meaningful conclusions, and raises important implications
ARGUMENT B What is the evidence that the student considers counter-claims?	<ul style="list-style-type: none"> One claim dominates the argument and alternative or counter-claims are absent 		<ul style="list-style-type: none"> Briefly alludes to questions, counter-claims, or alternative interpretations when appropriate 		<ul style="list-style-type: none"> Acknowledges questions, counter-claims, or alternative interpretations when appropriate 		<ul style="list-style-type: none"> Acknowledges and responds to questions, counter-claims, or alternative interpretations to sharpen the argument/thesis when appropriate
EVIDENCE A What is the evidence that the student can support the argument or thesis?	<ul style="list-style-type: none"> Relies on one or two reasons, examples, or quotations relevant to argument/thesis 		<ul style="list-style-type: none"> Refers to limited evidence (reasons, examples or quotations) relevant to argument/thesis 		<ul style="list-style-type: none"> Refers to sufficient and detailed evidence (reasons, examples, and quotations) relevant argument/thesis 		<ul style="list-style-type: none"> Refers to most important evidence (reasons, examples, quotations) relevant to argument/thesis



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

ANALYTIC RUBRIC

Advanced Pathways Performance Assessment Common Rubrics: *EFFECTIVE COMMUNICATION – WRITING*

SCORING DOMAIN	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT	P/A	ADVANCED
ARGUMENT A What is the evidence that the student can develop an argument or thesis and draw meaningful connections and conclusions?	<ul style="list-style-type: none"> Argument thesis is unclear or underdeveloped Draws superficial connections or conclusions 		<ul style="list-style-type: none"> Presents a somewhat clear, but general argument/thesis Draws general or broad connections or conclusions 		<ul style="list-style-type: none"> Presents a clear and well developed argument/ thesis Makes specific connections and draws logical conclusions that follow from the argument/thesis 		<ul style="list-style-type: none"> Presents a clear, well developed, and convincing argument thesis that demonstrates original thinking Makes insightful connections, draws logical and meaningful conclusions, and raises important implications
ARGUMENT B What is the evidence that the student considers counter-claims?	<ul style="list-style-type: none"> One claim dominates the argument and alternative or counter-claims are absent 		<ul style="list-style-type: none"> Briefly alludes to questions, counter-claims, or alternative interpretations when appropriate 		<ul style="list-style-type: none"> Acknowledges questions, counter-claims, or alternative interpretations when appropriate 		<ul style="list-style-type: none"> Acknowledges and responds to questions, counter-claims, or alternative interpretations to sharpen the argument/thesis when appropriate
EVIDENCE A What is the evidence that the student can support the argument or thesis?	<ul style="list-style-type: none"> Relies on one or two reasons, examples, or quotations relevant to argument/thesis 		<ul style="list-style-type: none"> Refers to limited evidence (reasons, examples or quotations) relevant to argument/thesis 		<ul style="list-style-type: none"> Refers to sufficient and detailed evidence (reasons, examples, and quotations) relevant argument/thesis 		<ul style="list-style-type: none"> Refers to most important evidence (reasons, examples, quotations) relevant to argument/thesis

DIMENSION

INDICATOR

SCORE LEVEL



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

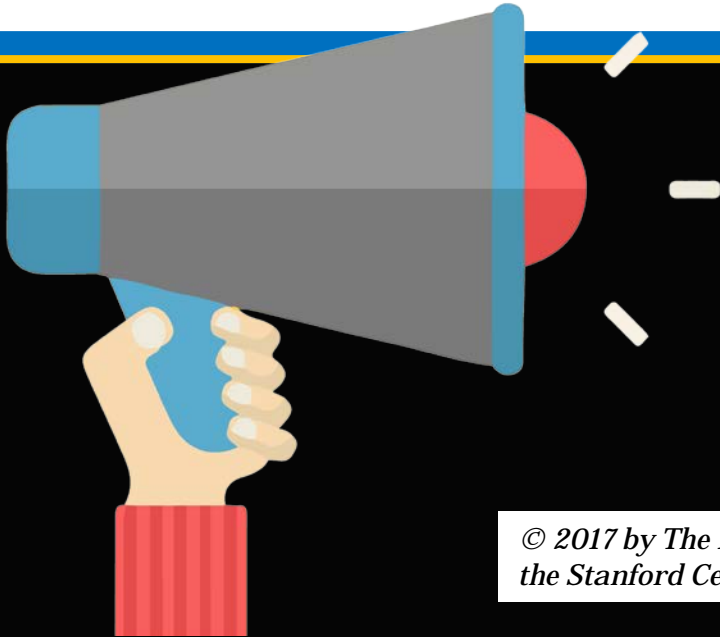
LITERACY DESIGN COLLABORATIVE: WRITING AN ARGUMENT

SCORING ELEMENTS	Not Yet		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
FOCUS	Attempts to address prompt, but lacks focus or is off-task.		Addresses prompt appropriately and establishes a position, but focus is uneven.		Addresses prompt appropriately and maintains a clear, steady focus. Provides a generally convincing position.		Addresses all aspects of prompt appropriately with a consistently strong focus and convincing position.
READING/ RESEARCH	Attempts to reference reading materials to develop response, but lacks connections or relevance to the purpose of the prompt.		Presents information from reading materials relevant to the purpose of the prompt with minor lapses in accuracy or completeness.		Accurately presents details from reading materials relevant to the purpose of the prompt to develop argument or claim.		Accurately and effectively presents important details from reading materials to develop argument or claim.
CONTROLLING IDEA	Attempts to establish a claim, but lacks a clear purpose. (L2) Makes no mention of counter claims.		Establishes a claim. (L2) Makes note of counter claims.		Establishes a credible claim. (L2) Develops claim and counter claims fairly.		Establishes and maintains a substantive and credible claim or proposal. (L2) Develops claims and counter claims fairly and thoroughly.
DEVELOPMENT	Attempts to provide details in response to the prompt, but lacks sufficient development or relevance to the purpose of the prompt. (L3) Makes no connection(s) that is irrelevant to an argument or claim.		Presents appropriate details to support and develop the focus, controlling idea, or claim, with minor lapses in the reasoning, examples, or explanations. (L3) Makes a connection(s) with a weak or unclear relationship to argument or claim.		Presents appropriate and sufficient details to support and develop the focus, controlling idea, or claim. (L3) Makes a relevant connection to clarify argument or claim.		Presents thorough and detailed information to effectively support and develop the focus, controlling idea, or claim. (L3) Makes a clarifying connection(s) that illuminates argument and adds depth to reasoning.
ORGANIZATION	Attempts to organize ideas, but lacks control of structure.		Uses an appropriate organizational structure for development of reasoning and logic, with minor lapses in structure and/or coherence.		Maintains an appropriate organizational structure to address specific requirements of the prompt. Structure reveals the reasoning and logic of the argument.		Maintains an organizational structure that intentionally and effectively enhances the presentation of information as required by the specific prompt. Structure enhances development of the reasoning and logic of the argument.
CONVENTIONS	Attempts to demonstrate standard English conventions, but lacks cohesion and control of grammar, usage, and mechanics. Sources are used without citation.		Demonstrates an uneven command of standard English conventions and cohesion. Accuracy and/or appropriateness of language and tone is uneven. Inconsistently cites sources.		Demonstrates a command of standard English conventions and cohesion, with few errors. Response includes language and tone appropriate to the audience, purpose, and specific requirements of the prompt. Cites sources using appropriate format with only minor errors.		Demonstrates and maintains a well-developed command of standard English conventions and cohesion, with few errors. Response includes language and tone consistently appropriate to the audience, purpose, and specific requirements of the prompt. Consistently cites sources using appropriate format.



LEARNING CENTERED DESIGN

Analytic rubrics provide specific feedback to students and teachers to inform revision



SCALE
Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

COMMON ANALYTIC RUBRICS



SEPTEMBER

1

(Not Yet)



NOVEMBER

1

(Not Yet)



FEBRUARY

2

*(Approaches
Expectations)*



MAY

3

*(Meets
Expectations)*



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

CONTENT: COMMON NOT TASK-SPECIFIC

Task-Specific

Explains how forensic scientists analyze fingerprints, includes 4 steps and proper protocol.



Common

Uses appropriate industry-specific language to explain a critical process, describing the steps or stages of the process.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

COMMON RUBRICS DISCIPLINARY TASK GENRES

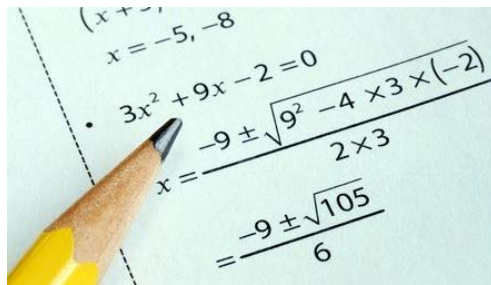
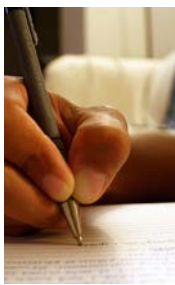
EXAMPLES

ELA: Argumentative writing, Explanatory writing, Narrative writing, Research

Science: Investigation, Design, Research

Mathematics: Modeling, Problem Solving

History-Social Studies: Document-Based Questions, Research

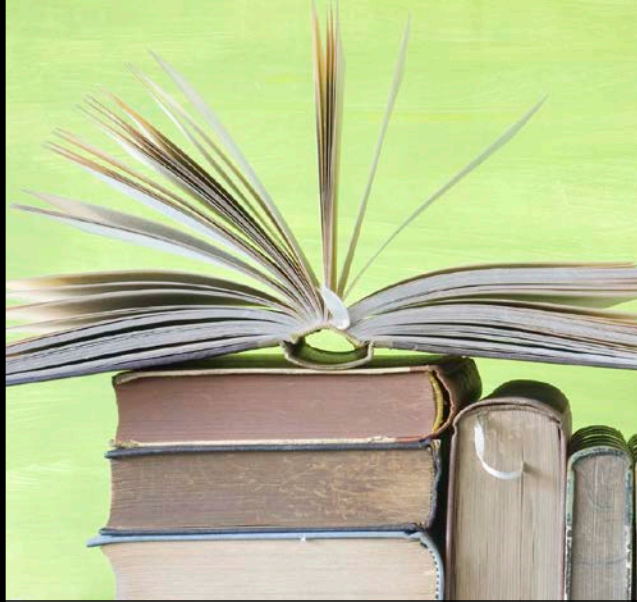


SCALE

Stanford Center for Assessment, Learning, & Equity



ORAL
COMMUNICATION



RESEARCH



TECHNOLOGY
USE

Common Rubrics

Other Task Genres Examples

COMMON RUBRICS, NOT TASK SPECIFIC



Support tracking
student progress
over time



Provide
consistency
for students



Provide a unifying
language that builds
professional
community within
and across schools



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Purpose Drives Design

Check List

- ✓ Quantitative measures
- ✓ Focuses on task elements that are either present or absent
- ✓ Task specific scoring

Point-Scoring System

- Describes full credit and partial credit responses

Common Analytic Rubrics

- Support tracking student progress over time

consistency for

unifying language
across professional
tools within and
between tools



SCALE

Stanford Center for Assessment, Learning, & Equity

Tr
Stanford University. Authored by
the Stanford Center for Assessment, Learning, and Equity (SCALE)

Q & A



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

WHAT ARE KEY FEATURES OF WELL- DESIGNED RUBRICS?

DESIGNING FOR DEEPER LEARNING



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

CHECKLIST FOR QUALITY RUBRIC DESIGN



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)



EDUCATIVE RUBRICS



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Communicate the criteria for a proficient performance



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by
the Stanford Center for Assessment, Learning, and Equity (SCALE)



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

SCORE LEVELS

SELECT STANDARDS-BASED PERFORMANCE CRITERIA

[11-12] Writing Rubric	Level 1 Attempting the Standards	1.5	Level 2 Approaching the Standards	2.5	Level 3 Meeting the Standards	3.5	Level 3 Exceeding the Standards
Focus: Position (CCLS W.1)	States a position but does not completely address the prompt		Establishes a general position that responds to the prompt		Establishes a precise and credible position, grounded in evidence and reasoning		Establishes a precise, and convincing position, while also acknowledging limitations and the complexity of the issue/topic



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

BASED ON CRITERIA, NOT NORMS

RUBRIC LEVELS

NORMATIVE

e.g., Nathan's writing is better than 99% of his classmates, therefore he deserves an "Advanced".

STANDARDS-BASED CRITERIA

e.g., Nathan's argument is clear, focused, and supported with reasons and details from the text, therefore it is "Proficient".



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

SCORE LEVELS

[11-12 } Writing Rubric	Level 1 Attempting the Standards	1.5	Level 2 Approaching the Standards	2.5	Level 3 Meeting the Standards	3.5	Level 4 Exceeding the Standards
Focus: Position (CCLS W.1)	States a position but does not completely address the prompt		Establishes a general position that responds to the prompt		Establishes a precise and credible position, grounded in evidence and reasoning		Establishes a precise, and convincing position, while also acknowledging limitations and the complexity of the issue/topic



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

EDUCATIVE RUBRICS

Make explicit what quality work looks like

Communicate how to improve work

Shared with students before work begins



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

ALIGNED RUBRICS



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)



on worthwhile
knowledge and skills



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by
the Stanford Center for Assessment, Learning, and Equity (SCALE)

ALIGNED RUBRICS



Does the rubric
measure what it
is intended to
measured?



Is it aligned
with the
targeted
performance
outcomes?



Does it focus on
the most
significant
knowledge,
skills, and
processes?



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)



Rubrics with Clear and Distinct Dimensions and Levels of Performance



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

DIMENSIONS ARE DISTINCT & FOCUSED

Not Distinct & Focused

Dimension: Perspective

Responds to texts with a clear perspective that demonstrates engaged reading and critical thinking

Perspective shows consideration of alternative perspectives or ways of thinking/viewing

Makes simple connections among multiple perspectives and different points of view from across cultural or global contexts

Relates text(s) to personal experience; draws meaningful connections and conclusions from the analysis

Makes meaning from texts and draws own conclusions from the inquiry

Distinct & Focused

Dimension: Point of view

Determines the author's point of view or purpose in a text and its impact on overall meaning



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

SCORE LEVELS

NYC Local Measures Argumentative Writing (Grades 11-12)

[11-12 } Writing Rubric	Level 1 Attempting the Standards	1.5	Level 2 Approaching the Standards	2.5	Level 3 Meeting the Standards	3.5	Level 4 Exceeding the Standards
Focus: Position (CCLS W.1)	States a position but does not completely address the prompt		Establishes a general position that responds to the prompt		Establishes a precise and credible position, grounded in evidence and reasoning		Establishes a precise, and convincing position, while also acknowledging limitations and the complexity of the issue/topic

→
Reflect a developmental progression, real student variation

SCORE LEVELS

[11-12 } Writing Rubric	Level 1 Attempting the Standards	1.5	Level 2 Approaching the Standards	2.5	Level 3 Meeting the Standards	3.5	Level 4 Exceeding the Standards
Focus: Position (CCLS W.1)	States a position but does not completely address the prompt		Establishes a general position that responds to the prompt		Establishes a precise and credible position, grounded in evidence and reasoning		Establishes a precise, and convincing position, while also acknowledging limitations and the complexity of the issue/topic

Has a sufficient number of levels to capture progress



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

INDICATORS – PARALLEL ACROSS LEVELS

	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT College Ready	P/A	ADVANCED College Level
REASONING AND PROOF <i>What is the evidence that the student can apply mathematical reasoning/procedures in an accurate and complete manner?</i>	<ul style="list-style-type: none"> Provides incorrect solutions without justifications No evidence of monitoring for reasonableness Results are not interpreted in terms of context 		<ul style="list-style-type: none"> Provides partially correct solutions or correct solution without logic or justification Monitors for reasonableness in final answer Results are interpreted partially or incorrectly in terms of context 		<ul style="list-style-type: none"> Constructs logical, correct, complete solution Monitors for reasonableness in final answer and adapts appropriately Results are interpreted correctly in terms of context 		<ul style="list-style-type: none"> Constructs logical, correct, complete solution with justifications Monitors for reasonableness, identifies sources of error, and adapts appropriately Interprets results correctly in terms of context, indicating the domain to which a solution applies



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

INDICATORS SHOULD NOT BE GROUPED TOGETHER IF STUDENT PERFORMANCE ON THOSE INDICATORS OFTEN VARIES.

	Not Yet		Approaches Expectations		Meets Expectations		Advanced
SCORING ELEMENTS	1	1.5	2	2.5	3	3.5	4
CONTROLLING IDEA	Attempts to establish a claim, but lacks a clear purpose. (L2) Makes no mention of counter claims.		Establishes a claim. (L2) Makes note of counter claims.		Establishes a credible claim. (L2) Develops claim and counter claims fairly.		Establishes and maintains a substantive and credible claim or proposal. (L2) Develops claims and counter claims fairly and thoroughly.

ANALYTIC RUBRIC EXAMPLE:

LITERACY DESIGN COLLABORATIVE: WRITING AN ARGUMENT

	Not Yet		Approaches Expectations		Meets Expectations		Advanced
SCORING ELEMENTS	1	1.5	2	2.5	3	3.5	4
CONTROLLING IDEA	Attempts to establish a claim, but lacks a clear purpose. Makes no mention of counter claims.		Establishes a claim. Makes note of counter claims.		Establishes a credible claim. Develops claim and counter claims fairly.		Establishes and maintains a substantive and credible claim or proposal. Develops claims and counter claims fairly and thoroughly.

???



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

LANGUAGE: OBSERVABLE BEHAVIORS & SKILLS

Not Observable

Responds to constructive feedback from peers and teachers to produce final draft

Selection of the most significant sources

Observable

Writing has a clear thesis and is well developed through details and evidence from texts.

Annotated bibliography

LANGUAGE – QUALITATIVE & DESCRIPTIVE

Value-laden & Quantitative

*Often uses **sophisticated** words, sentence structure, and **convincing** language*

*Has only **1-2 errors** in English grammar and conventions*

Descriptive & Qualitative

*Demonstrates **varied syntax and word choice**; uses **rhetorical techniques***

*Is **generally free** of distracting errors in grammar, usage, and mechanics*

Purposeful formatting and structure



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

LDC RUBRIC FOR ARGUMENTATIVE WRITING

SHORT & FOCUSED



SCALE

Stanford Center for Assessment, Learning, & Equity

SCORING ELEMENTS	Not Yet		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
FOCUS	Attempts to address prompt, but lacks focus or is off-task.		Addresses prompt appropriately and establishes a position, but focus is uneven.		Addresses prompt appropriately and maintains a clear, steady focus. Provides a generally convincing position.		Addresses all aspects of prompt appropriately with a consistently strong focus and convincing position.
READING/ RESEARCH	Attempts to reference reading materials to develop response, but lacks connections or relevance to the purpose of the prompt.		Presents information from reading materials relevant to the purpose of the prompt with minor lapses in accuracy or completeness.		Accurately presents details from reading materials relevant to the purpose of the prompt to develop argument or claim.		Accurately and effectively presents important details from reading materials to develop argument or claim.
CONTROLLING IDEA	Attempts to establish a claim, but lacks a clear purpose. (L2) Makes no mention of counter claims.		Establishes a claim. (L2) Makes note of counter claims.		Establishes a credible claim. (L2) Develops claim and counter claims fairly.		Establishes and maintains a substantive and credible claim or proposal. (L2) Develops claims and counter claims fairly and thoroughly.
DEVELOPMENT	Attempts to provide details in response to the prompt, but lacks sufficient development or relevance to the purpose of the prompt. (L3) Makes no connection(s) that is irrelevant to an argument or claim.		Presents appropriate details to support and develop the focus, controlling idea, or claim, with minor lapses in the reasoning, examples, or explanations. (L3) Makes a connection(s) with a weak or unclear relationship to argument or claim.		Presents appropriate and sufficient details to support and develop the focus, controlling idea, or claim. (L3) Makes a relevant connection to clarify argument or claim.		Presents thorough and detailed information to effectively support and develop the focus, controlling idea, or claim. (L3) Makes a clarifying connection(s) that illuminates argument and adds depth to reasoning.
ORGANIZATION	Attempts to organize ideas, but lacks control of structure.		Uses an appropriate organizational structure for development of reasoning and logic, with minor lapses in structure and/or coherence.		Maintains an appropriate organizational structure to address specific requirements of the prompt. Structure reveals the reasoning and logic of the argument.		Maintains an organizational structure that intentionally and effectively enhances the presentation of information as required by the specific prompt. Structure enhances development of the reasoning and logic of the argument.
CONVENTIONS	Attempts to demonstrate standard English conventions, but lacks cohesion and control of grammar, usage, and mechanics. Sources are used without citation.		Demonstrates an uneven command of standard English conventions and cohesion. Accuracy and/or appropriateness of language and tone is uneven. Inconsistently cites sources.		Demonstrates a command of standard English conventions and cohesion, with few errors. Response includes language and tone appropriate to the audience, purpose, and specific requirements of the prompt. Cites sources using appropriate format with only minor errors.		Demonstrates and maintains a well-developed command of standard English conventions and cohesion, with few errors. Response includes language and tone consistently appropriate to the audience, purpose, and specific requirements of the prompt. Consistently cites sources using appropriate format.
CONTENT UNDERSTANDING	Attempts to include disciplinary content in argument, but understanding of content is weak; content is irrelevant, inappropriate, or inaccurate.		Briefly notes disciplinary content relevant to the prompt; shows basic or uneven understanding of content; minor errors in explanation.		Accurately presents disciplinary content relevant to the prompt with sufficient explanations that demonstrate understanding.		Integrates relevant and accurate disciplinary content with thorough explanations that demonstrate in-depth understanding

BOLDED WORDS

[11-12 } Writing Rubric	Level 1 Attempting the Standards	1.5	Level 2 Approaching the Standards	2.5	Level 3 Meeting the Standards	3.5	Level 3 Exceeding the Standards
Focus: Position (CCLS W.1)	States a position but does not completely address the prompt		Establishes a general position that responds to the prompt		Establishes a precise and credible position, grounded in evidence and reasoning		Establishes a precise, and convincing position, while also acknowledging limitations and the complexity of the issue/topic



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

LANGUAGE – SIMPLE, CLEAR, STUDENT FRIENDLY

Not Student Friendly

*Evaluate the effectiveness of an author's **structural choices** to create **emotional effects and/or** contribute to the meaning and tone of the work and **proposes limited structural changes** to make ideas or themes more **salient**.*

Student Friendly

*Evaluates the impact of **author's choices**, such as structure, on the meaning and tone of the work*

LANGUAGE – POSITIVE

What Students Cannot Do

Does not make inferences from the text

Does not refer to sources

What Students Can Do

Summarizes explicit ideas/information from texts

Refers to sources ***rarely***



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Well-designed Rubrics

Educative

Aligned

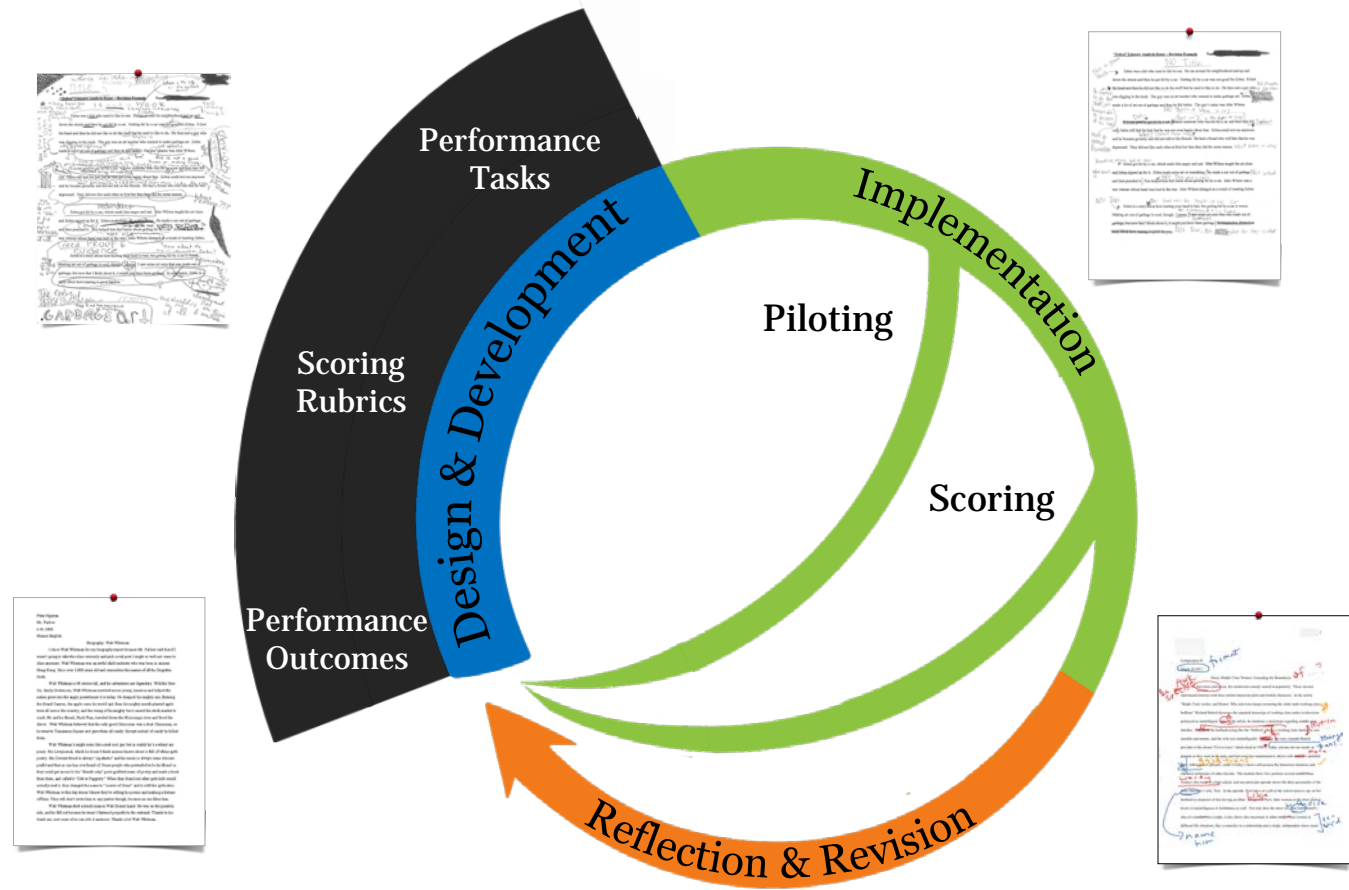
Clear and
distinct
levels of
performance

Purposeful
formatting
and
structure

Advanced Pathways Performance Assessment Common Rubrics: *EFFECTIVE COMMUNINCATION - WRITING*

SCORING DOMAIN	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT	P/A	ADVANCED
ARGUMENT A What is the evidence that the student can develop an argument or thesis and draw meaningful connections and conclusions?	<ul style="list-style-type: none">Argument thesis is unclear or underdevelopedDraws superficial connections or conclusions		<ul style="list-style-type: none">Presents a somewhat clear, but general argument/thesisDraws general or broad connections or conclusions		<ul style="list-style-type: none">Presents a clear and well developed argument/ thesisMakes specific connections and draws logical conclusions that follow from the argument/thesis		<ul style="list-style-type: none">Presents a clear, well developed, and convincing argument thesis that demonstrates original thinkingMakes insightful connections, draws logical and meaningful conclusions, and raises important implications

The Process



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Q & A



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Checklist for Quality Rubric Design



SCALE

Stanford Center for Assessment, Learning, & Equity



PERFORMANCE
ASSESSMENT
RESOURCE
BANK

SCALE CHECKLIST FOR QUALITY RUBRIC DESIGN

Before building a rubric, authors should 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 and meets the criteria below.

Purpose - Learning Centered Design

- ☐ Rubric sets clear expectations: Describes proficient performance.
- ☐ Rubric is analytic: Performance is broken down into distinct dimensions.
- ☐ Rubric is educative: Provides feedback to teachers and students to support learning and improvement.
- ☐ Rubric is common: Can be used within and across courses, grade levels or grade spans, tasks, and teachers to measure progress toward long-term performance outcomes.

Content

- ☐ Rubric is tightly aligned to key performance outcomes.
- ☐ Rubric measures worthwhile knowledge and skills - standards-aligned content, complex disciplinary understandings and practices, and 21st century skills.
- ☐ Rubric is not task-specific: generalizes to a variety of tasks within the discipline.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Mathematics Example

Source: SCALE's Learning Through Performance in Middle School Mathematics Curriculum (6th Grade)

“Garden Boxes”
Performance Task



A Hybrid Rubric: Mathematics

Practice	Emerging	E/D	Developing	D/P	Proficient	P/A	Advanced
Construct viable arguments Source of Evidence: Question 1	I am still working to provide evidence (that someone else will understand) to support my conjectures, arguments, and claims.		I provide partial or inconsistent evidence to support my conjectures, arguments, and claims.		I support my arguments and claims with evidence. I evaluate and improve incomplete or flawed arguments.		Proficient plus: I provide more than one way to verify that my argument is correct.
Critique the reasoning of others Source of Evidence: Question 4	I need assistance to provide evidence to support or refute others' conjectures, arguments, and claims.		I provide partial or inconsistent evidence to support or refute others' conjectures, arguments, and claims.		I explain how I tested the reasoning of others. If there is a flaw, I can identify it. I use evidence to support or refute others' arguments and claims.		Proficient plus: I provide more than one way to verify the reasoning of others.
Model with mathematics Source of Evidence: Questions 2 & 3	I need assistance showing how to represent the given situation. I am unsure what information I should use in my model.		I start to represent situations, questions, and problems but I am not sure how to use my model to find my answer. I can use and interpret some parts of models correctly.		I represent situations, questions, and problems in multiple and effective ways (pictures, diagrams, charts, graphs, expressions, numbers, words, etc.) I use and interpret models correctly. I adjust, revise, and update my model when I receive new information, and document that I did this.		Proficient plus: I describe the conditions for which my model is valid.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Construct Viable Arguments: Question 1 ‘Look Fors’

Practice	Emerging	E/D	Developing	D/P	Proficient	P/A	Advanced
Construct Viable Arguments	I am still working to provide evidence (that someone else will understand) to support my conjectures, arguments, and claims.		I provide partial or inconsistent evidence to support my conjectures, arguments, and claims.		I support my arguments and claims with evidence. I evaluate and improve incomplete or flawed arguments.		Proficient Plus: I provide more than one way to verify that my argument is correct.
Look Fors	➤ Explanation is flawed and would not result in correct approach to calculating the area of the figure.		➤ Partially explains how to either: • decompose the figure Or • use negative space to calculate the area of the base of the garden box.		➤ Thoroughly explains how to either: • decompose the figure Or • use negative space to calculate the area of the base of the garden box.		➤ Provides more than one strategy



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Language

- ❑ Performance level labels and indicators are neutral in tone and avoid value-laden, stigmatizing language.
- ❑ Rubric describes observable behaviors and skills in the work sample; describes what students can do and not what they can't do.
- ❑ Language is simple, clear, and provides clear distinctions between levels; is student-friendly.
- ❑ Rubric communicates how a student can get to the next performance level.

Model with Mathematics: Question 2 ‘Look Fors’

Practice	Emerging	E/D	Developing	D/P	Proficient	P/A	Advanced
Model with Mathematics	I need assistance showing how to represent the given situation. I am unsure what information I should use in my model.		I start to represent situations, questions, and problems but I am not sure how to use my model to find my answer. I can use and interpret some parts of models correctly.		I represent situations, questions, and problems in multiple and effective ways (pictures, diagrams, charts, graphs, expressions, numbers, words etc.). I use and interpret models correctly. I adjust, revise, and update my model when I receive new information, and document that I did this.		Proficient Plus: I describe the conditions for which my model is valid.
Look Fors	<ul style="list-style-type: none"> ➤ Calculations represents an approach that will not find the total area of the base of the garden. ➤ May contain calculation errors. ➤ Does not include label. 		<ul style="list-style-type: none"> ➤ Calculations demonstrate an appropriate strategy, such as decomposing the shape or using negative space, that will result in the total area. May contain calculation errors. ➤ Does not include label. ➤ OR ➤ Student provides correct answer of 100 sq. ft. without showing work. 		<ul style="list-style-type: none"> ➤ Calculations demonstrate an appropriate strategy, such as decomposing the shape or using negative space, that will result in the total area. ➤ Includes label of square feet. 		<ul style="list-style-type: none"> ➤ Shows or describes why this represents the total area.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Model with Mathematics: Question 3 ‘Look Fors’

Practice	Emerging	E/D	Developing	D/P	Proficient	P/A	Advanced
Model with mathematics	I need assistance showing how to represent the given situation. I am unsure what information I should use in my model.		I start to represent situations, questions, and problems but I am not sure how to use my model to find my answer. I can use and interpret some parts of models correctly.		I represent situations, questions, and problems in multiple and effective ways (pictures, diagrams, charts, graphs, expressions, numbers, words, etc.) I use and interpret models correctly. I adjust, revise, and update my model when I receive new information, and document that I did this.		Proficient plus: I describe the conditions for which my model is valid.
Look Fors	➤ Does not calculate the volume of soil		➤ Calculations demonstrate an understanding of the relation between the area of the base and volume of soil. ➤ Student does not correctly multiply by a decimal. OR ➤ Does not include label. OR ➤ Student provides correct answer of 150 cu.ft. without showing work.		➤ Calculations demonstrate an understanding of the relation between the area of the base and volume of soil. ➤ Student correctly multiplies by a decimal. ➤ Includes appropriate label (cubic feet).		



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Critique the Reasoning of Others: Question 4 ‘Look Fors’

Practice	Emerging	E/D	Developing	D/P	Proficient	P/A	Advanced
Critique the reasoning of others	I need assistance to provide evidence to support or refute others' conjectures, arguments, and claims.		I provide partial or inconsistent evidence to support or refute others' conjectures, arguments, and claims.		I explain how I tested the reasoning of others. If there is a flaw, I can identify it. I use evidence to support or refute others' arguments and claims.		Proficient Plus: I provide more than one way to verify the reasoning of others.
Look Fors	<ul style="list-style-type: none"> ➤ Does not explain how to calculate the volume. ➤ Does not explain that multiplying by a number less than one will result in a product that is less than the first factor. 		<ul style="list-style-type: none"> ➤ Partially explains that the volume of soil is equal to the area of the base of the garden times the depth of the soil. (may include confusion because the volume is given and the depth is unknown.) ➤ Partially explains or refers to the idea that multiplying by a number less than one will result in a product that is less than the first factor. 		<ul style="list-style-type: none"> ➤ Explains that the volume of soil is equal to the area of the base of the garden times the depth of the soil. ➤ Explains that multiplying by a number less than one will result in a product that is less than the first factor. 		<ul style="list-style-type: none"> ➤ Mentions that it is not appropriate to compare square feet to cubic feet to say one is “larger or smaller” than the other.




SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

We use the in-between score levels when there is evidence at multiple levels, and always consider the preponderance of evidence.

Practice	Emerging	E/D	Developing	D/P	Proficient	P/A	Advanced
Construct viable arguments	I am still working to provide evidence (that someone else will understand) to support my conjectures, arguments, and claims.		I provide partial or inconsistent evidence to support my conjectures, arguments, and claims.		I support my arguments and claims with evidence. I evaluate and improve incomplete or flawed arguments.		Proficient plus: I provide more than one way to verify that my argument is correct.
Critique the reasoning of others	I need assistance to provide evidence to support or refute others' conjectures, arguments, and claims.		I provide partial or inconsistent evidence to support or refute others' conjectures, arguments, and claims.		I explain how I tested the reasoning of others. If there is a flaw, I can identify it. I use evidence to support or refute others' arguments and claims.		Proficient plus: I provide more than one way to verify the reasoning of others.
Model with mathematics	I need assistance showing how to represent the given situation. I am unsure what information I should use in my model.		I start to represent situations, questions, and problems but I am not sure how to use my model to find my answer. I can use and interpret some parts of models correctly.		I represent situations, questions, and problems in multiple and effective ways (pictures, diagrams, charts, graphs, expressions, numbers, words, etc.) I use and interpret models correctly. I adjust, revise, and update my model when I receive new information, and document that I did this.		Proficient plus: I describe the conditions for which my model is valid.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Science Example



Source:

Learning Through
Performance Middle
School Science Curriculum
& Integrated Science
Projects



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)



NEXT GENERATION SCIENCE STANDARDS

Three Dimensional Science Learning



Disciplinary
Core
Ideas



Crosscutting
Concepts



Science and
Engineering
Practices



SCALE

Stanford Center for Assessment, Learning, & Equity


© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

NGSS Science - Middle School Example

➤ **Science & engineering practices**
(common rubric)

➤ **Crosscutting Concepts**
(common rubric)

➤ **Disciplinary Core Ideas**
(aligned to specific performance expectation, but not specific tasks)

 **SCALE**
Stanford Center for Assessment, Learning, & Equity

Science and Engineering Practices Rubric

Practice Domain	Emerging	Developing	Proficient	Advanced
Asking Questions and defining Problems	<ul style="list-style-type: none"> Asks general questions that cannot be investigated. Writes a problem or design question but it does not match the intent of the problem or the intent of the design. 	<ul style="list-style-type: none"> Asks specific questions that can be investigated but do not require empirical evidence. Writes a problem or design question that matches the intent of the problem or the intent of the design. 	<ul style="list-style-type: none"> Asks questions that require empirical evidence to answer. Writes a problem or design question that accurately matches the intent of the problem or the intent of the design. 	<ul style="list-style-type: none"> Asks questions that require empirical evidence to answer and evaluate the feasibility of the questions. Writes a problem or design question that accurately matches the intent of the problem or the intent of the design.
Developing and Using Models	<ul style="list-style-type: none"> Creates models (drawings, diagrams, or other) with major errors. Explains the limitations of model with major errors. 	<ul style="list-style-type: none"> Creates models (drawings, diagrams, or other) to represent the system or system to be investigated with minor errors. Explains the limitations of model with minor errors. 	<ul style="list-style-type: none"> Creates accurate and labeled models (drawings, diagrams, or other) to represent the system or system to be investigated. Explains the limitations of the model as a representation of the system or process. 	<ul style="list-style-type: none"> Creates accurate and labeled models (drawings, diagrams, or other) to represent the system or system to be investigated and explains the model. Explains the limitations of the model as a representation of the system or process and discusses how the model might be improved.
Planning an Investigation or designing a solution	<ul style="list-style-type: none"> Plans an investigation that will not produce relevant data to answer the empirical question(s). Plans a design that does not make the criteria, constraints, and extent of the problem. 	<ul style="list-style-type: none"> Plans an investigation that will produce relevant data to answer the empirical question(s). Plans a design that makes an investigation that partially matches the criteria, constraints, and extent of the problem. 	<ul style="list-style-type: none"> Plans an investigation that will produce relevant data to answer the empirical question(s) and identifies the dependent and independent variables when appropriate. Plans a design and makes an investigation that accurately and adequately matches the criteria, constraints, and extent of the problem. 	<ul style="list-style-type: none"> Plans an investigation that will completely produce relevant and adequate amounts of data to answer the empirical question(s) and identifies the dependent and independent variables when appropriate. Plans a design and makes a detailed investigation that accurately and adequately matches the criteria, constraints, and extent of the problem.
Conducting Investigation or testing a design	<ul style="list-style-type: none"> Follows procedures that lack detail or that are not clearly stated in the standards. 	<ul style="list-style-type: none"> Follows procedures that are somewhat unclear but that are clearly stated in the standards. 	<ul style="list-style-type: none"> Follows procedures that are clear and accurately matches the criteria, constraints, and extent of the problem. 	<ul style="list-style-type: none"> Follows procedures that are clear and accurately matches the criteria, constraints, and extent of the problem.

© July 2016 Stanford Center for Assessment, Learning, and Equity (SCALE)



NGSS Science & Engineering Practices

Scoring Domain	Emerging	Developing	Proficient	Advanced
Asking Questions and Defining Problems	Asks general questions that cannot be investigated.	Asks specific questions that can be investigated but do not require empirical evidence.	Asks questions that require empirical evidence to answer.	Asks questions that require empirical evidence to answer and evaluates the testability of the questions.
	Writes a problem or design statement but it does not match the intent of the problem or the need of the client.	Writes a problem or design statement that matches the intent of the problem or the need of the client with minor errors.	Writes a problem or design statement that accurately matches the intent of the problem or the needs of the client.	Writes a problem or design statement that accurately and completely matches the intent of the problem or the need of the client.
Developing and Using Models	Makes models (drawings, diagrams, or other) with major errors.	Makes models (drawings, diagrams, or other) to represent the process or system to be investigated with minor errors.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated and explains the model.
	Explains the limitations of model with major errors.	Explains the limitations of model with minor errors.	Explains the limitations of the model as a representation of the system or process	Explains the limitations of the model as a representation of the system or process and discusses how the model might be improved.
Planning an Investigation or Designing a Solution	Plans an investigation that will not produce relevant data to answer the empirical question(s).	Plans an investigation that will produce some relevant data to answer the empirical question(s).	Plans an investigation that will produce relevant data to answer the empirical question(s) and identifies the dependent and independent variables when applicable.	Plans an investigation that will completely produce relevant and adequate amounts of data to answer the empirical question(s) and identifies the dependent and independent variables when applicable.
	Plans a design that does not match the criteria, constraints, lem.	Plans a design and writes an explanation that partially matches the criteria, constraints, and intent of the problem.	Plans a design and writes an explanation that accurately and adequately matches the criteria, constraints, and intent of the problem.	Plans a design and writes a detailed explanation that accurately and completely matches the criteria, constraints, and intent of the problem.

Science and Engineering Practices Rubric

Rubric is common - It can be used across life, physical, earth engineering and across the middle school grades.

Scoring Domain	Emerging	Developing	Proficient	Advanced
Developing and Using Models	Makes models (drawings, diagrams, or other) with major errors.	Makes models (drawings, diagrams, or other) to represent the process or system to be investigated with minor errors.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated and explains the model.
	Explains the limitations of model with major errors.	Explains the limitations of model with minor errors.	Explains the limitations of the model as a representation of the system or process	Explains the limitations of the model as a representation of the system or process and discusses how the model might be improved.

Science and Engineering Practices Rubric

Rubric is aligned to key performance outcomes and measures worthwhile knowledge as identified in the NGSS.

Scoring Domain	Emerging	Developing	Proficient	Advanced
Developing and Using Models	Makes models (drawings, diagrams, or other) with major errors.	Makes models (drawings, diagrams, or other) to represent the process or system to be investigated with minor errors.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated and explains the model.
	Explains the limitations of model with major errors.	Explains the limitations of model with minor errors.	Explains the limitations of the model as a representation of the system or process	Explains the limitations of the model as a representation of the system or process and discusses how the model might be improved.

Science and Engineering Practices Rubric

Rubric uses standards-based criteria to define proficiency.

Scoring Domain	Emerging	Developing	Proficient	Advanced
Developing and Using Models	Makes models (drawings, diagrams, or other) with major errors.	Makes models (drawings, diagrams, or other) to represent the process or system to be investigated with minor errors.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated and explains the model.
	Explains the limitations of model with major errors.	Explains the limitations of model with minor errors.	Explains the limitations of the model as a representation of the system or process	Explains the limitations of the model as a representation of the system or process and discusses how the model might be improved.

Science and Engineering Practices Rubric:

Indicators for each performance level are parallel in sequence and grammatical style across the dimensions.

Scoring Domain	Emerging	Developing	Proficient	Advanced
Developing and Using Models	Makes models (drawings, diagrams, or other) with major errors.	Makes models (drawings, diagrams, or other) to represent the process or system to be investigated with minor errors.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated.	Makes accurate and labeled models (drawings, diagrams, or other) to represent the process or system to be investigated and explains the model.
	Explains the limitations of model with major errors.	Explains the limitations of model with minor errors.	Explains the limitations of the model as a representation of the system or process	Explains the limitations of the model as a representation of the system or process and discusses how the model might be improved.

Elementary Literacy Example

Source:



Literacy Design
Collaborative

/ SCALE

Grade 1 Informational/Explanatory Writing



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Student Work Rubric - Informational/Explanatory Task - Grade 1

Scoring Elements	Emerging	Approaches Expectations			Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Topic / Main Idea	Response does not address the prompt, does not name a topic, or is mostly off-topic.		Names a topic; response is loosely related to the prompt and the topic, or is partially off-topic .		Names a topic; response addresses the prompt and is related to the topic.		Names a clear topic; response addresses the prompt and stays focused on the topic .
Use of Sources	Includes no information from sources.		Includes information from sources loosely related to topic.		Includes information from sources related to the topic.		Includes detailed information from sources related to the topic.
Development	Lists no facts or facts unrelated to the topic.		Lists facts loosely related to the topic.		Lists facts related to the topic.		Lists and elaborates on some facts related to the topic.
Organization	Sentences have no evident relationship with each other.		Sentences are related to each other.		Sentences are related to each other; provides a sense of closure.		Sequences sentences with a beginning, middle, and end ; provides a sense of closure.
Conventions (general)	Major errors in standard English conventions appropriate to the grade level interfere with the clarity of the writing.		Errors in standard English conventions appropriate to the grade level sometimes interfere with the clarity of the writing.		Consistently applies standard English conventions appropriate to the grade level. Minor errors, while noticeable, do not interfere with the clarity of the writing.		Consistently applies standard English conventions appropriate to the grade level, with few errors . Attempts to use untaught conventions, appropriate to grade level .
Conventions (Grade 1 examples)	<ul style="list-style-type: none">• Most words spelled phonetically• Use of capital letters inconsistent• Appropriate spacing between words• Little to no use of punctuation		<ul style="list-style-type: none">• Most frequent-use words spelled correctly• Some words spelled phonetically• End punctuation used inconsistently• First word in each sentence capitalized• Pronoun “I” capitalized		<ul style="list-style-type: none">• Conventional spelling of frequent-use words• Phonetic spelling of new words• Consistent use of end punctuation• Consistent spacing of words and sentences• Dates and names capitalized• Use of commas in dates and series of words		<ul style="list-style-type: none">• Holidays, product names and geographic names capitalized• Use of apostrophe to form contractions• Conventional spelling of new words



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Purpose - Learning Centered Design

- ❑ Rubric is common: Can be used within and across courses, grade levels or grade spans, **tasks**, and teachers to measure progress toward long-term performance outcomes.

Student Work Rubric - Informational/Explanatory Task - Grade 1

Scoring Elements	Emerging		Approaches Expectations		Meets Expectations		Advanced	
	1	1.5	2	2.5	3	3.5	4	
Topic / Main Idea	Response does not address the prompt, does not name a topic, or is mostly off topic.		Names a topic; response is loosely related to the prompt and the topic, or is partially off topic.		Names a topic; response addresses the prompt and is related to the topic.		Names a clear topic; response addresses the prompt and stays focused on the topic.	
Use of Sources	Includes no information from sources.		Includes information from sources loosely related to topic.		Includes information from sources related to the topic.		Includes detailed information from sources related to the topic.	
Development	Lists no facts or facts unrelated to the topic.		Lists facts loosely related to the topic.		Lists facts related to the topic.		Lists and elaborates on some facts related to the topic.	
Organization	Sentences have no evident relationship with each other.		Sentences are related to each other.		Sentences are related to each other; provides a sense of closure.		Sequences sentences with a beginning, middle, and end; provides a sense of closure.	
Conventions (general)	Major errors in standard English conventions appropriate to the grade level interfere with the clarity of the writing.		Errors in standard English conventions appropriate to the grade level sometimes interfere with the clarity of the writing.		Consistently applies standard English conventions appropriate to the grade level. Minor errors, while noticeable, do not interfere with the clarity of the writing.		Consistently applies standard English conventions appropriate to the grade level, with few errors. Attempts to use untaught conventions, appropriate to grade level.	
Conventions (Grade 1 examples)	<ul style="list-style-type: none"> Most words spelled phonetically Use of capital letters inconsistent Appropriate spacing between words Little to no use of punctuation 		<ul style="list-style-type: none"> Most frequent-use words spelled correctly Some words spelled phonetically End punctuation used inconsistently First word in each sentence capitalized Pronoun "I" capitalized 		<ul style="list-style-type: none"> Conventional spelling of frequent-use words Phonetic spelling of new words Consistent use of end punctuation Consistent spacing of words and sentences Dates and names capitalized Use of commas in dates and series of words 		<ul style="list-style-type: none"> Holidays, product names and geographic names capitalized Use of apostrophe to form contractions Conventional spelling of new words 	



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Student Work Rubric - Informational/Explanatory Task - Grade 1

Scoring Elements	Emerging		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Topic / Main Idea	Response does not address the prompt, does not name a topic, or is mostly off-topic.		Names a topic; response is loosely related to the prompt and the topic, or is partially off-topic .		Names a topic; response addresses the prompt and is related to the topic.		Names a clear topic; response addresses the prompt and stays focused on the topic .
Use of Sources	Includes no information from sources.		Includes information from sources loosely related to topic.		Includes information from sources related to the topic.		Includes detailed information from sources related to the topic.
Development	Lists no facts or facts unrelated to the topic.		Lists facts loosely related to the topic.		Lists facts related to the topic.		Lists and elaborates on some facts related to the topic.
Organization	Sentences have no evident relationship with each other.		Sentences are related to each other.		Sentences are related to each other; provides a sense of closure .		Sequences sentences with a beginning, middle, and end ; provides a sense of closure.
Conventions (general)	Major errors in standard English conventions appropriate to the grade level interfere with the clarity of the writing.		Errors in standard English conventions appropriate to the grade level sometimes interfere with the clarity of the writing.		Consistently applies standard English conventions appropriate to the grade level. Minor errors, while noticeable, do not interfere with the clarity of the writing.		Consistently applies standard English conventions appropriate to the grade level, with few errors . Attempts to use untaught conventions, appropriate to grade level .
Conventions (Grade 1 examples)	<ul style="list-style-type: none"> Most words spelled phonetically Use of capital letters inconsistent Appropriate spacing between words Little to no use of punctuation 		<ul style="list-style-type: none"> Most frequent-use words spelled correctly Some words spelled phonetically End punctuation used inconsistently First word in each sentence capitalized Pronoun "I" capitalized 		<ul style="list-style-type: none"> Conventional spelling of frequent-use words Phonetic spelling of new words Consistent use of end punctuation Consistent spacing of words and sentences Dates and names capitalized Use of commas in dates and series of words 		<ul style="list-style-type: none"> Holidays, product names and geographic names capitalized Use of apostrophe to form contractions Conventional spelling of new words



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Content

- ❑ Rubric is not task-specific: generalizes to a variety of tasks within the discipline.

Scoring Elements	Emerging		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Topic / Main Idea	Response does not address the prompt, does not name a topic, or is mostly off-topic.		Names a topic; response is loosely related to the prompt and the topic, or is partially off-topic .		Names a topic; response addresses the prompt and is related to the topic.		Names a clear topic; response addresses the prompt and stays focused on the topic .



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Performance Levels

- ❑ Rubric uses standards-based criteria to define proficiency.

Scoring Elements	Emerging		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Development	Lists no facts or facts unrelated to the topic.		Lists facts loosely related to the topic.		Lists facts related to the topic.		Lists and elaborates on some facts related to the topic.
Organization	Sentences have no evident relationship with each other.		Sentences are related to each other.		Sentences are related to each other; provides a sense of closure.		Sequences sentences with a beginning, middle, and end ; provides a sense of closure.



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Checklist for Quality Rubric Design



SCALE

Stanford Center for Assessment, Learning, & Equity



**PERFORMANCE
ASSESSMENT
RESOURCE
BANK**

SCALE CHECKLIST FOR QUALITY RUBRIC DESIGN

Before building a rubric, authors should 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 and meets the criteria below.

Purpose - Learning Centered Design

- ☐ Rubric sets clear expectations: Describes proficient performance.
- ☐ Rubric is analytic: Performance is broken down into distinct dimensions.
- ☐ Rubric is educative: Provides feedback to teachers and students to support learning and improvement.
- ☐ Rubric is common: Can be used within and across courses, grade levels or grade spans, tasks, and teachers to measure progress toward long-term performance outcomes.

Content

- ☐ Rubric is tightly aligned to key performance outcomes.
- ☐ Rubric measures worthwhile knowledge and skills - standards-aligned content, complex disciplinary understandings and practices, and 21st century skills.
- ☐ Rubric is not task-specific: generalizes to a variety of tasks within the discipline.

Structure & Organization



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)

Rubric Development Process

Considerations

- How do you ensure **validity** – that the rubric measures what it is intended to measure?
- How do you determine expectations embedded within **levels**?
- An iterative, evidence-based process of refinement



Ensuring Validity

- ❑ Start with clear and limited set of **performance outcomes**
 - ✓ Enduring understandings and **big ideas** (concepts)
 - ✓ Disciplinary or cross-disciplinary **practices** (ways of doing)
 - ✓ Disciplinary **habits of mind** (ways of thinking)
- ❑ Consult state and national content/disciplinary standards or frameworks
- ❑ Consult literature relevant to the targeted construct

Ensuring Validity

- ❑ Who should be in the room?
 - ✓ Users
 - ✓ Experts in the discipline/field
 - ✓ Assessment experts
- ❑ Be clear about sources of evidence for scoring and realistic about whether the performance outcome can be objectively scored

Determine appropriate level of expectation – *What is “Proficient”? “Advanced”?*

Consult:

- ✓ State and/or national content/disciplinary standards or frameworks
- ✓ Developmental continuum relevant to the discipline or domain or an expert with deep knowledge of students at the grade level/span
- ✓ External experts in the discipline/field

An iterative, evidence-based process of *ongoing refinement*

- ✓ Use student work to inform levels of expectation at each score level and to refine language of indicators
- ✓ Use feedback from users to inform clarity of language, format and structure of rubric
- ✓ Use results of scoring (correlations between dimensions, reliability and consistency of scoring) to improve distinctions between rubric dimensions and score levels, number of score levels

Parting Words...

Rubrics provide an impoverished description of what is desired and expected.

What is needed - powerful **illustrative examples**
→ “benchmarks” or “anchor papers”

Q & A



SCALE

Stanford Center for Assessment, Learning, & Equity

© 2017 by The Board of Trustees of The Leland Stanford University. Authored by the Stanford Center for Assessment, Learning, and Equity (SCALE)