

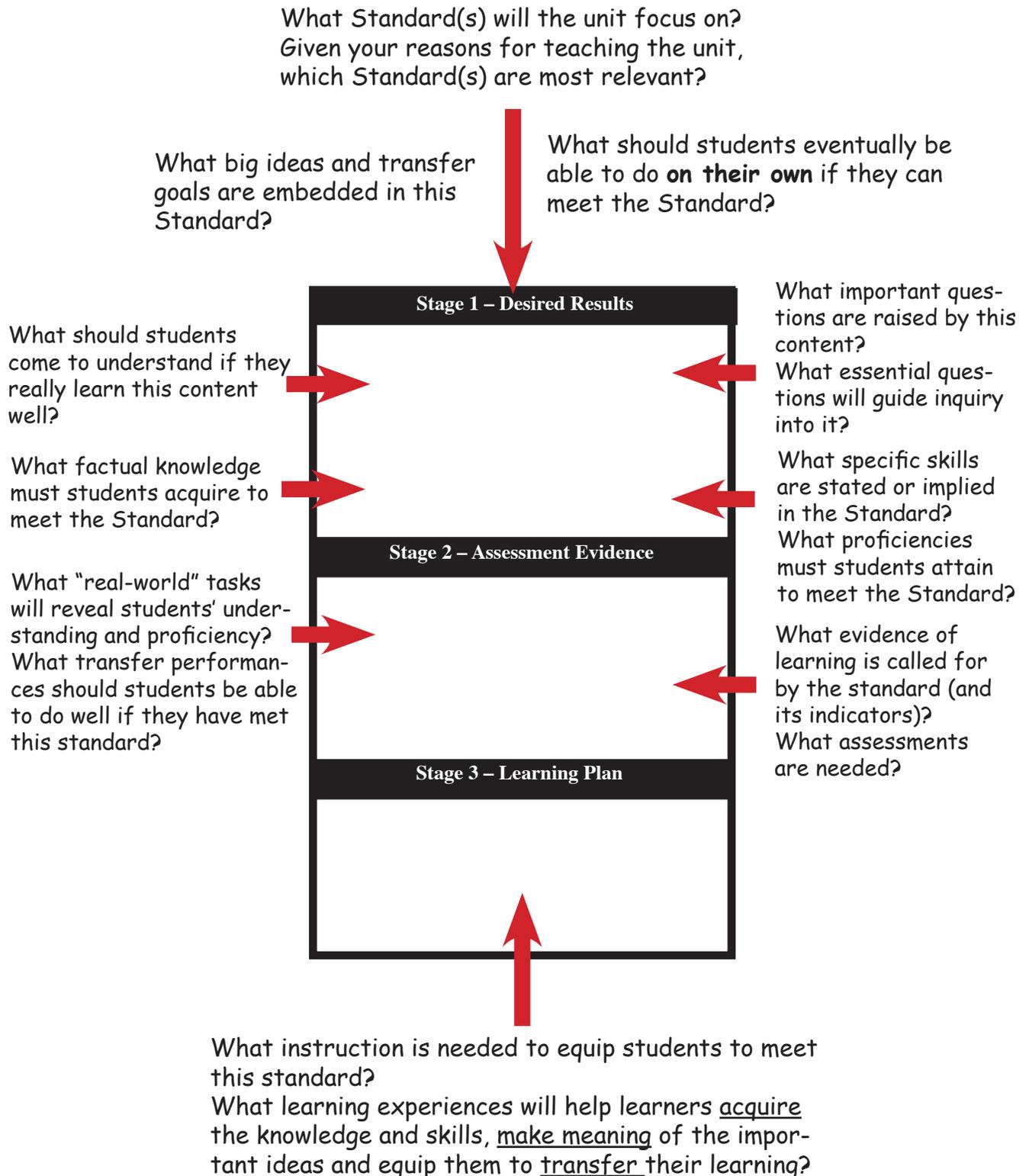
Designing Cornerstone Tasks
to Promote Meaningful Learning
and Assess What Matters Most



presented by

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Curriculum Planning with Standards using Understanding by Design



A Blueprint for Curriculum Design

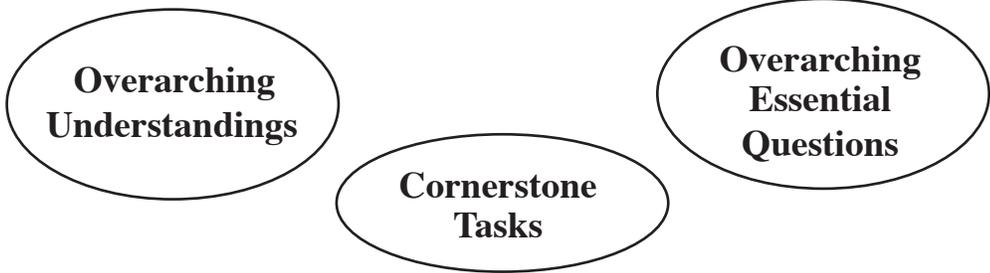
Long-Term Transfer Goals

Mission and 21st Century Skills

Standards

Programs

Arts	Science	History	Language Arts	Mathematics	P. E./ Health	Technology Ed.	World Languages
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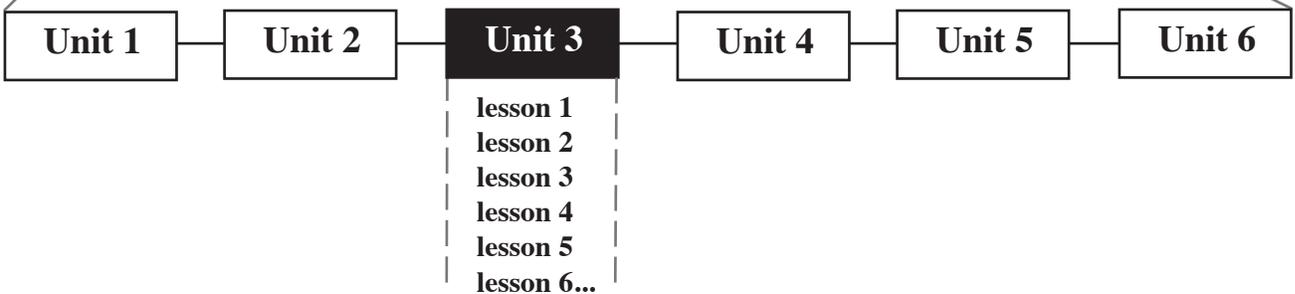


Courses

Course 1	Course 4	Course 7	Course 10
Course 2	Course 5	Course 8	Course 11
Course 3	Course 6	Course 9	Course 12



Units



Key Points in the English Language Arts Standards

Reading

The standards establish a “staircase” of increasing complexity in what students must be able to read so that all students are ready for the demands of college- and career-level reading no later than the end of high school. The standards also require the progressive development of reading comprehension so that students advancing through the grades are able to gain more from whatever they read. Through reading a diverse array of classic and contemporary literature as well as challenging informational texts in a range of subjects, students are expected to build knowledge, gain insights, explore possibilities, and broaden their perspective. Because the standards are building blocks for successful classrooms, but recognize that teachers, school districts and states need to decide on appropriate curriculum, they intentionally do not offer a reading list. Instead, they offer numerous sample texts to help teachers prepare for the school year and allow parents and students to know what to expect at the beginning of the year.

Writing

The ability to write logical arguments based on substantive claims, sound reasoning, and relevant evidence is a cornerstone of the writing standards, with opinion writing – a basic form of argument – extending down into the earliest grades.

Research – both short, focused projects (such as those commonly required in the workplace) and longer term in depth research – is emphasized throughout the standards but most prominently in the writing strand since a written analysis and presentation of findings is so often critical.

Speaking and Listening

The standards require that students gain, evaluate, and present increasingly complex information, ideas, and evidence through listening and speaking as well as through media. An important focus of the speaking and listening standards is academic discussion in one-on-one, small-group, and whole-class settings. Formal presentations are one important way such talk occurs, but so is the more informal discussion that takes place as students collaborate to answer questions, build understanding, and solve problems.

Language

The standards expect that students will grow their vocabularies through a mix of conversations, direct instruction, and reading. The standards will help students determine word meanings, appreciate the nuances of words, and steadily expand their repertoire of words and phrases.

The standards recognize that students must be able to use formal English in their writing and speaking but that they must also be able to make informed, skillful choices among the many ways to express themselves through language.

Vocabulary and conventions are treated in their own strand not because skills in these areas should be handled in isolation but because their use extends across reading, writing, speaking, and listening.

Media and Technology

Just as media and technology are integrated in school and life in the twenty-first century, skills related to media use (both critical analysis and production of media) are integrated throughout the standards.

Key Points in the Mathematics Standards

- The mathematics curriculum in the United States must become substantially more focused and coherent in order to improve mathematics achievement To deliver on the promise of common standards, the standards must address the problem of a curriculum that is ‘a mile wide and an inch deep.’ That is, what and how students are taught should reflect not only the topics that fall within a certain academic discipline, but also the **key ideas** that determine how knowledge is organized and generated within that discipline. This implies that ‘to be coherent,’ a set of content standards must evolve from particulars... to deeper structures inherent in the discipline.
- The standards stress not only procedural skill but also **conceptual understanding**, to make sure students are learning and absorbing the critical information they need to succeed at higher levels - rather than the current practices by which many students learn enough to get by on the next test, but forget it shortly thereafter, only to review again the following year.
- The K-5 standards provide students with a solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions and decimals—which help young students build the foundation to successfully apply more demanding math concepts and procedures, and move into applications.
- Having built a strong foundation K-5, students can do *hands on* learning in geometry, algebra and probability and statistics. Students who have completed 7th grade and mastered the content and skills through the 7th grade will be well-prepared for algebra in grade 8.
- The high school standards call on students to practice applying mathematical ways of thinking to **real world issues and challenges**; they prepare students to think and reason mathematically. The high school standards set a rigorous definition of college and career readiness, by helping students develop a depth of understanding and ability to apply mathematics to novel situations, as college students and employees regularly do.
- The high school standards emphasize **mathematical modeling**, the use of mathematics and statistics to analyze empirical situations, understand them better, and improve decisions.

Mathematics Standards

Standards for Mathematical Practice

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years.

- 1. Make sense of problems and persevere in solving them.**
- 2. Reason abstractly and quantitatively.**
- 3. Construct viable arguments and critique the reasoning of others.**
- 4. Model with mathematics.**
- 5. Use appropriate tools strategically.**
- 6. Attend to precision.**
- 7. Look for and make use of structure.**
- 8. Look for and express regularity in repeated reasoning.**

The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices. In this respect, those content standards which set an expectation of understanding are potential “**points of intersection**” between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum...

TRANSFER GOALS



Definition

Transfer Goals highlight the effective uses of understanding, knowledge, and skill that we seek in the long run; i.e., what we want students to be able to do when they confront new challenges – both in and outside of school. There are a small number of overarching, long-term transfer goals in each subject area. For example, a long-term aim in mathematics is for students to be able to solve “real world” problems on their own. A long-term transfer goal in history is for students to apply the lessons of history when considering contemporary issues.

In every case, the ability to transfer learning manifests itself in not just one setting but varied real-world situations. Transfer is about independent performance in context. You can only be said to have fully understood if you can apply your learning without someone telling you what to do and when to do it. In the real world, no teacher is there to direct and remind you about which lesson to plug in here or there. Transfer is about intelligently and effectively drawing from your repertoire, independently, to handle new contexts on your own. In the real world, no teacher is there to direct and remind you about which lesson to plug in here or there: transfer is about intelligently and effectively drawing from your repertoire, independently, to handle particular contexts on your own. The goal of transfer thus requires that an instructional plan (in Stage 3) help the student to become increasingly autonomous, and the assessments (in Stage 2) need to determine the degree of student autonomy.

Transfer goals have several distinguishing characteristics:

- They require application (not simply recognition or recall).
- The application occurs in new situations (not ones previously taught or encountered; i.e., the task cannot be accomplished as a result of rote learning).
- The transfer requires a thoughtful assessment of which prior learning applies here – i.e. some strategic thinking is required (not simply “plugging in” skill and facts).
- The learners must apply their learning autonomously (on their own, without coaching or teacher support).
- Transfer calls for the use of habits of mind (i.e., good judgment, self regulation, persistence) along with academic understanding, knowledge and skill.

Long Term Transfer Goals

examples

Students will be able to independently use their learning to:

History

- Apply lessons of the past to current and future events and issues, and to other historical eras
- Critically appraise political, social, and historical claims/decisions in light of available evidence and reasoning

Health and Physical Education

- Make healthful choices and decisions regarding diet, exercise, stress management, alcohol/drug use
- Play a chosen game skillfully and with good sportsmanship

Mathematics

- Apply sound mathematical reasoning to clarify “messy,” never-before-seen mathematical problems and persevere in attempting to solve them
- Use sound mathematical reasoning to develop, support and critique arguments involving math and statistics

Performing & Fine Arts

- Find meaning and interest in varied works and performances of art
- Create/perform works in one or more media to express ideas and/or to evoke mood and emotion

Reading

- Read and respond to text in various genres (literature, non-fiction, technical) for various purposes (entertainment, to be informed, to perform a task)
- Comprehend text by inferring and tracing the main idea, interpreting (“between the lines”), critically appraising, and making personal connections

Research

- Locate pertinent information from varied sources (print, on-line; primary, secondary)
- Critically evaluate sources and information (e.g., for accuracy, completeness, timeliness, lack of bias, properly referenced)

Science

- Evaluate scientific claims and analyze current issues involving science or technology
- Conduct a sound investigation to answer an empirical question

World Language

- Communicate effectively in the target language in common “real world” situations
- Demonstrate sensitivity in behavior and speech to culture and context

Writing

- Write in various genres for various audiences in order to explain (expository), entertain (narrative/poem), argue (persuasive), guide (technical), and challenge (satirical)
- Carefully draft, write, edit, and polish one’s own and others’ writing to make it publishable

Transfer Goals

examples from schools and districts

Science Transfer Goals

Students will be able to independently use their learning to:

- Apply knowledge of science and engineering to engage in public discussions on relevant issues in a changing world.
- Conduct investigations, individually and collaboratively, to answer questions.
- Evaluate scientific claims for validity.
- Think systemically.

Source: North Slope Borough School District, Barrow, Alaska (July 2012)

Visual Arts Transfer Goals

Students will be able to independently use their learning to:

- Create engaging and purposeful artistic expressions in forms that vary in terms of media and style.
- Communicate ideas, experiences, and stories through art.
- Respond to the artistic expression of others through global understanding, critical stance, personal connection, and interpretation.
- Respond to technical and conceptual challenges of his/her own.
- Develop an independent artistic vision.

Source: Sheridan School, Washington, DC (June 2011)

World Languages Transfer Goals

Students will be able to independently use their learning to:

- Communicate effectively in the target language(s) in realistic situations while displaying a sensitivity to culture and context.
- Emulate native speakers.
- Willingly taking risks with language, both within and outside of the classroom.

Source: The Dalton School, New York, NY (March 2012)

Special Education

Students will be able to independently use their learning to:

- Function in the community while respecting social/cultural norms.
- Advocate for their personal needs – academic, behavioral, emotional, and physical.
- Communicate effectively based on purpose, task, and audience using appropriate vocabulary.
- Explore and pursue viable options based on aspirations, interests, and experience.

Source: Prosper ISD, TX (April 2013)

Transfer Goals – Wisconsin D.P.I.

English Language Arts Transfer Goals

Students will be able to independently use their learning to:

Reading

Students can read closely and analytically to comprehend a range of increasingly complex literary and informational texts.

- a) Read a range of increasingly complex literary and informational texts written in diverse formats for various tasks, audiences, and purposes to build strong content knowledge and understand other perspectives and cultures.
- b) Analyze craft and structure within a text to determine an author's purpose and perspective.
- c) Integrate knowledge and ideas within and across texts to think critically and creatively.
- d) Use foundational skills and word-learning strategies to access content knowledge

Writing

Students can produce effective and well-grounded writing in which the development, organization, and style are appropriate for a range of purposes and audiences.

- a) Write argumentative, informative/explanatory, and narrative texts in diverse formats to examine and convey ideas.
- b) Use the recursive writing process and technology to develop and strengthen writing.
- c) Incorporate textual evidence to support analysis, reflection, and research.
- d) Use language and conventions strategically and capably appropriate to task, purpose, and audience.

Speaking and Listening

Students can employ effective speaking and listening skills for a range of purposes and audiences.

- a) Engage in collaborative discussions appropriate to task, audience, and purpose with diverse partners to express, develop, and refine thinking.
- b) Use digital media and visual displays strategically and capably in presentations appropriate to task, purpose, and audience to express information and enhance listeners' understanding.

Research/Inquiry

Students can engage in research and inquiry to investigate topics, and to analyze, integrate, and present information.

- a) Demonstrate understanding of the subject under investigation through questioning, adjusting search, and analyzing and synthesizing sources.
- b) Evaluate the credibility and accuracy of information to support analysis, reflection, and research.

Transfer Goals – Wisconsin D.P.I.

Mathematics Transfer Goals

Students will be able to independently use their learning to:

Concepts & Procedures

Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.

- a) Make use of structure and repeated reasoning to gain a mathematical perspective and formulate generalized problem solving strategies.

Problem Solving

Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.

- a) Make sense of and persevere in solving never-before-seen mathematical problems.
- b) Use appropriate mathematical tools to make decisions and draw conclusions.

Communicating Reasoning

Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.

- a) Use effective mathematical reasoning to defend a solution or solution path.
- b) Communicate precisely when making mathematical statements and express solutions or solution paths with a degree of precision appropriate for the context of the problem/situation.

Modeling and Data Analysis

Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.

- a) Apply mathematical knowledge to analyze relationships and build a mathematical model of a situation using multiple representations.

Unpacked Common Core E/LA Standards

Anchor Standards - Reading	Overarching Understandings	Essential Questions
<p>Key Ideas and Details</p> <p>1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.</p> <p>2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.</p> <p>3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.</p>	<ul style="list-style-type: none"> • Effective readers use appropriate strategies (as needed) to construct meaning from texts. • Identifying a text’s genre, purpose, and organizational structure helps readers analyze and comprehend the text. • Readers support their conclusions (inferences and interpretations) by citing appropriate details within the text. • Great literature is intentionally crafted to explore enduring human themes transferrable across time and place. • Writers don’t always say things directly or literally; sometimes they convey their ideas indirectly (e.g., metaphor, satire, irony). • Critical readers question the text, consider different perspectives, and look for author bias. 	<ul style="list-style-type: none"> • <i>What do good readers do?</i> • <i>What’s my strategy for reading this text? How do I know if it is working?</i> • <i>What is this text really about? (e.g. theme, main idea, moral)?</i> • <i>What is the author trying to tell me?</i> • <i>What does a “close” reading require?</i> • <i>How do you “read between the lines?”</i> • <i>What does this mean to me?</i> • <i>How does what I read (e.g. text structure, story elements) influence how I should read it?</i> • <i>How does my purpose influence how I should read?</i> • <i>How do people, events and ideas develop within the text?</i> • <i>How do I know what to believe in what I read?</i>
<p>Craft and Structure</p> <p>4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.</p> <p>5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.</p>	<ul style="list-style-type: none"> • Effective readers use appropriate strategies (as needed) to construct meaning from texts. • Authors can express similar ideas within and across genres. • By comparing texts, readers often gain greater insight into those texts. • Readers can use context clues to determine meaning of words/ phrases/ concepts. 	<ul style="list-style-type: none"> • <i>What do good readers do?</i> • <i>What’s my strategy for reading this text? How do I know if it is working?</i> • <i>How does what I read (e.g. text structure, story elements) influence how I should read it?</i> • <i>What insights can we gain by comparing two (or more) texts?</i> • <i>How do I figure out the meaning of unknown words/ phrases/ concepts?</i>

Unpacked Common Core E/LA Standards

Anchor Standards - Reading	Overarching Understandings	Essential Questions
<p style="text-align: center;"><u>Craft and Structure</u> <i>(continued)</i></p> <p>6. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.</p> <p>7. Assess how point of view or purpose shapes the content and style of a text.</p>	<ul style="list-style-type: none"> • Texts have structures and follow a predictable sequence. • Identifying a text’s genre, purpose, and organizational structure helps readers analyze and comprehend the text. • Determining an author’s point of view helps the reader better interpret and explain the text. 	<ul style="list-style-type: none"> • <i>How do authors develop ideas, characters, and events within the text?</i> • <i>How do authors use language and stylistic choices to convey their meaning?</i> • <i>What’s the author’s point of view? How does it influence author’s message and reader’s interpretation?</i>
<p style="text-align: center;"><u>Integration of Knowledge and Ideas</u></p> <p>8. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.</p> <p>9. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.</p> <p>10. Analyze the meanings of literary texts by drawing on knowledge of literary concepts and genres.</p> <p>11. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.</p>	<ul style="list-style-type: none"> • Effective readers use appropriate strategies (as needed) to construct meaning from texts. • Effective readers use efficient strategies to efficiently locate, integrate, and evaluate content from diverse sources for various purposes. • Readers make meaning through a careful reading of the text(s) and personal connections to the topic. • The effectiveness of an argument depends on the clarity of the claims, the logic of the reasoning, and the supportive evidence. • Identifying a text’s genre, purpose, and organizational structure helps readers analyze and comprehend the text. • By comparing texts, readers often gain greater insight into those texts. 	<ul style="list-style-type: none"> • <i>What do good readers do?</i> • <i>What’s my strategy for reading this text? How do I know if it is working?</i> • <i>How do I use text features (e.g. photographs, charts) to better comprehend the text?</i> • <i>How do I find the information I need? How do I know what to believe in what I find?</i> • <i>What makes an argument effective? How do I evaluate an argument?</i> • <i>What insights can we gain by comparing two (or more) texts?</i>

Unpacked Common Core E/LA Standards

Anchor Standards - Reading	Overarching Understandings	Essential Questions
<p style="text-align: center;"><u>Craft and Structure</u> <i>(continued)</i></p> <p>6. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.</p> <p>7. Assess how point of view or purpose shapes the content and style of a text.</p>	<ul style="list-style-type: none"> • Texts have structures and follow a predictable sequence. • Identifying a text’s genre, purpose, and organizational structure helps readers analyze and comprehend the text. • Determining an author’s point of view helps the reader better interpret and explain the text. 	<ul style="list-style-type: none"> • <i>How do authors develop ideas, characters, and events within the text?</i> • <i>How do authors use language and stylistic choices to convey their meaning?</i> • <i>What’s the author’s point of view? How does it influence author’s message and reader’s interpretation?</i>
<p style="text-align: center;"><u>Integration of Knowledge and Ideas</u></p> <p>8. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.</p> <p>9. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.</p> <p>10. Analyze the meanings of literary texts by drawing on knowledge of literary concepts and genres.</p> <p>11. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.</p>	<ul style="list-style-type: none"> • Effective readers use appropriate strategies (as needed) to construct meaning from texts. • Effective readers use efficient strategies to efficiently locate, integrate, and evaluate content from diverse sources for various purposes. • Readers make meaning through a careful reading of the text(s) and personal connections to the topic. • The effectiveness of an argument depends on the clarity of the claims, the logic of the reasoning, and the supportive evidence. • Identifying a text’s genre, purpose, and organizational structure helps readers analyze and comprehend the text. • By comparing texts, readers often gain greater insight into those texts. 	<ul style="list-style-type: none"> • <i>What do good readers do?</i> • <i>What’s my strategy for reading this text? How do I know if it is working?</i> • <i>How do I use text features (e.g. photographs, charts) to better comprehend the text?</i> • <i>How do I find the information I need? How do I know what to believe in what I find?</i> • <i>What makes an argument effective? How do I evaluate an argument?</i> • <i>What insights can we gain by comparing two (or more) texts?</i>

Unpacked Common Core E/LA Standards

Anchor Standards - Reading	Overarching Understandings	Essential Questions
<p><u>Range of Reading and Level of Text Complexity</u> 5. Read and comprehend complex literary and informational texts independently and proficiently.</p>	<ul style="list-style-type: none"> • Effective readers use appropriate strategies (as needed) to construct meaning from texts. • Readers make meaning through a careful reading of the text(s) and personal connections to the topic. • Knowing the structure of the language helps facilitate meaning. • As one’s knowledge base increases, the quality of thinking, meaning-making and communication can improve. 	<ul style="list-style-type: none"> • <i>What do good readers do?</i> • <i>What’s my strategy for reading this text? How do I know if it is working?</i> • <i>What is this text really about? (e.g. theme, main idea, moral)?</i> • <i>What is the author trying to tell me?</i> • <i>How do my experiences influence my reading and understanding of this text?</i> • <i>In ways do the interpretations of other readers influence my own understanding of the text?</i> • <i>How does understanding the structure of language help us read a text?</i>
<p><u>Literature</u></p>	<ul style="list-style-type: none"> • Great literature explores universal and timeless themes, dilemmas, and challenges of human existence. • Literature can offer insights into a particular culture/time period. • Everybody is entitled to an opinion about what a text means, but some opinions are more supportable by the text than others. 	<ul style="list-style-type: none"> • <i>Why read literature?</i> • <i>What makes a story “great?”</i> • <i>To what extent is this text timeless/ universal?</i> • <i>What “truths” can we learn from fiction?</i> • <i>What does this literature reveal about a culture/time period?</i> • <i>What is this text really about? (e.g. theme, main idea, moral)</i> • <i>What does this mean to me?</i> • <i>How do I support my interpretation?</i>

Unpacked Common Core E/LA Standards

Anchor Standards - Writing	Overarching Understandings	Essential Questions
<p><u>Text Types and Purposes</u></p> <ul style="list-style-type: none"> • Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. • Write informative/ explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content. • Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. 	<ul style="list-style-type: none"> • Writing is a process for clarifying as well as expressing one’s thinking. • To be effective, an argument must be supported with sound evidence and valid reasoning. • Audience and purpose influence a writer’s choice of organizational pattern, language, and literary techniques to elicit an intended response from the reader. 	<ul style="list-style-type: none"> • <i>What makes clear and effective writing?</i> • <i>Why am I writing? What is my purpose?</i> • <i>Who is my audience? What will work best for my audience?</i> • <i>What makes an argument persuasive?</i> • <i>How do I support my argument?</i>
<p><u>Production and Distribution of Writing</u></p> <ul style="list-style-type: none"> • Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. • Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. • Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. 	<ul style="list-style-type: none"> • Proficient writers make deliberate choices regarding content, language, and style to convey their message to a target audience. • Writing is strengthened through a recursive process involving planning, revising, editing, and rewriting or trying a new approach. • A writer’s choice of language and style establish “voice” to help personalize the text. • Effective writers seek and use feedback to improve the quality of their writing. • Different publishing media (e.g. digital, print) influence content, structure, and style. 	<ul style="list-style-type: none"> • <i>Why am I writing? What is my purpose?</i> • <i>Who is my audience? What will work best for my audience?</i> • <i>How do I develop and refine my idea(s)?</i> • <i>How do effective writers hook and hold their readers?</i> • <i>What makes writing flow?</i> • <i>How do I develop my writer’s voice?</i> • <i>How can I get and use helpful feedback to improve my writing?</i> • <i>What revisions/edits do I need to make to improve my writing?</i> • <i>How do I engage my audience throughout my writing?</i> • <i>How do I know when my writing is ready to publish?</i> • <i>What’s the best medium for my message?</i> • <i>How does where I publish influence how I write?</i>

Unpacked Common Core E/LA Standards

Anchor Standards - Writing	Overarching Understandings	Essential Questions
<p><u>Research to Build and Present Knowledge</u></p> <ul style="list-style-type: none"> • Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. • Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. • Draw evidence from literary or informational texts to support analysis, reflection, and research. 	<ul style="list-style-type: none"> • There are multiple sources of information and those selected depend on the purpose and audience for writing. • Effective researchers evaluate the credibility and accuracy of information. • Clear and focused questions help researchers find desired information. • Effective research involves a recursive inquiry process that includes: <ul style="list-style-type: none"> o defining problem/task; o generating focus question(s); o searching for information; o critical evaluating and selecting information; o organizing and synthesizing information; o presenting findings and conclusions with proper support; o judging overall effectiveness. • There are clear rules and laws for acknowledging and documenting sources: to honor the preceding research, enhance the credibility of the research, and to foster the work of other researchers. 	<ul style="list-style-type: none"> • <i>What am I looking for and how do I find it?</i> • <i>Can this source be trusted?</i> • <i>How do I know what to believe in what I read, hear and view?</i> • <i>How do I collect, organize and synthesize information?</i> • <i>Why and how should I document my sources?</i> • <i>How do I best present my findings?</i> • <i>How can I support my findings and conclusions?</i>
<p><u>Foundational Skills</u></p>	<ul style="list-style-type: none"> • Rules of grammar, spelling and mechanics are conventions of language that guide writers and readers. • Effective writers adhere to established rules of grammar, spelling, mechanics to ensure clarity of communication. 	<ul style="list-style-type: none"> • <i>Why do we have/need rules of language?</i>

Overarching Essential Questions

MATHEMATICS

- I. How is mathematics used to quantify and compare situations, events and phenomena?
- II. What are the mathematical attributes of objects or processes and how are they measured or calculated?
- III. How are spatial relationships, including shape and dimension, used to draw, construct, model and represent real situations or solve problems?
- IV. How is mathematics used to measure, model and calculate change?
- V. What are the patterns in the information we collect and how are they useful?
- VI. How can mathematics be used to provide models that help us interpret data and make predictions?
- VII. What are the limits of mathematical modeling/representation?
- VIII. In what ways can data be expressed so that its accurate meaning is concisely presented to a specific audience?
- IX. How do the graphs of mathematical models and data help us better understand the world in which we live?
- X. What does it mean to reason mathematically?
- XI. How can mathematics support effective communication?
- XII. What do effective problem solvers do? What do they do when they get stuck?

– adapted from Pomperaug Region #15 Schools, CT

Essential Questions for the CCSS Mathematical Practice Standards

1. Make sense of problems and persevere in solving them.

What kind of a problem is this? What must be found? What is known? What is unknown? What counts as an adequate solution? Does my answer make sense? Does my approach make sense? What should I do if I'm stuck solving it? What similar problems does this remind me of? What simpler or special cases can help me?

2. Reason abstractly and quantitatively.

What's the abstract relationship between these specific quantities? What does this quantitative relationship mean? How can I decontextualize the numbers to find a mathematical relationship? Have I represented the relationships between the quantities appropriately? Which operations and equivalences will simplify and help me solve the problem? Does my abstract representation of these quantities make sense in context?

3. Construct viable arguments and critique the reasoning of others.

Has this been proven? What is assumed? On what assumptions does that inference depend? Where might this assumption logically lead? Is the conclusion logical? Is the conclusion plausible? Have I sufficiently supported my answer and shown my work? Which of these solutions is more plausible? Does this argument make sense? What might be counter-evidence and counter arguments to what I have concluded?

4. Model with mathematics.

What mathematics applies to this situation and this data? What simplifications or approximations, should I make in order to make a mathematical model of this phenomenon/data/experience? How might the model be refined to be less simplistic and crude? Does this model make sense in this context? How might I test this model? What are the limits of this (or any) mathematical model? How might this model be improved?

5. Use appropriate tools strategically.

What tools should I use here to be most efficient and effective? What are the strengths and weaknesses of the tools at hand, and might there be better ones for the task? Where might I find more helpful resources when needed?

Essential Questions for the CCSS Mathematical Practice Standards

(continued)

6. Attend to precision.

What is the appropriate degree of precision for this particular data and solution? Have I made my data, reasoning, and conclusion sufficiently clear (for this audience and purpose)? What terms need to be clearly defined? Have I tested the accuracy of my answer? How sure am I? How much statistical confidence should we have in the answer?

7. Look for and make use of structure.

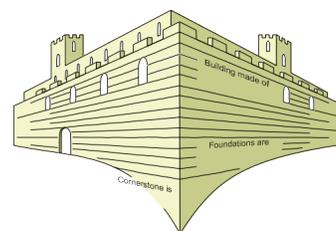
What's the underlying pattern here? What's the whole, if that's a part? What are the parts, if that's the whole? What type of problem is this? What equivalences or re-constitutions of the problem are likely to help me see a pattern or structure? What shift of perspective might make the solution path more evident?

8. Look for and express regularity in repeated reasoning.

What regularities suggest a constant relationship at work? What is a summary or shorthand way of expressing these recurring patterns? What patterns are evident? Am I sure that the general pattern recurs or is my sample too small? Is that a reasonable way to describe the perceived patterns?

From: McTighe, Jay and Wiggins. Grant *Essential Questions: Doorways to Student Understanding* (ASCD, in press)

Cornerstone Tasks



The pressures of high-stakes accountability testing have led many schools and districts to encourage their teachers to engage in “test prep” instruction, especially in the tested grades and subject areas. Additionally, there has been an increase in the use of “interim” or benchmark assessments that mimic the state tests. While these practices may have their place, they typically focus on decontextualized content knowledge and skills at the expense of more relevant and engaging learning. As a counter-balance to “test prep” teaching and “practice” testing, Grant Wiggins and I have argued for the inclusion of more robust and authentic tasks as part of a local curriculum and assessment system. We refer to these as “cornerstone” tasks.

The Cornerstones are curriculum-embedded tasks that are intended to engage students in applying their knowledge and skills in an authentic context. Like a cornerstone anchors a building, these tasks are meant to anchor the curriculum around the most important performances that we want learners to be able to do (on their own) with acquired content knowledge and skills. They honor the intent of the Standards, within and across subject areas, instead of emphasizing only the tested (a.k.a. “eligible”) content. Moreover, they support effective instructional practices that engage learners in “meaning making” and transfer.

More specifically, Cornerstone tasks:

- are *curriculum embedded* (as opposed to externally imposed);
- *recur across the grades*, becoming increasingly sophisticated over time;
- establish *authentic contexts* for performance;
- call for *understanding* and *transfer* via genuine performance;
- may be used as rich learning activities *or* assessments;
- *integrate 21st century skills* (e.g., critical thinking, technology use, teamwork) with subject area content;
- evaluate performance with established *rubrics*;
- engage students in *meaningful learning* while encouraging the best teaching;
- provide content for student portfolios so that they graduate with a *resume of demonstrated accomplishments* rather than simply a transcript of courses taken.



Examples of Recurring Cornerstone Tasks

Mathematical Modeling

Grade 2/3

Every seven weeks students work in groups of four to measure the height of each other using tape measures affixed to the classroom walls. By mid-May, the class has obtained six height measures. Then, students create a simple graph (height in inches plotted against the months of the school year) and plot the data. Using rulers, they connect the dots to see “rise over run” (a visual representation of their growth over time). The chart papers are posted throughout the room, and the students circulate in a gallery walk to view the changes in heights of the various groups.

Students then analyze the data to answer guiding questions: “In what months did we grow the most this year?” “Is there a difference between how boys and girls have grown in second grade?” “How does our class growth compare to that in the other second grades?” “What can we predict for next year’s second graders about how they will grow based on our data?” Students then work in their groups to develop a presentation for the current 1st/2nd graders to predict how much they will grow next school year.

Middle School

A former NBA legend, Hoops McGinty, has pledged money to the local science museum for an exhibit on our solar system. He pledges the money under one condition: that a regulation NBA basketball be used to represent some aspect of the scale display and that other NBA-related shapes and sizes be used (e.g., a basketball be used to represent a planet or moon). The building floor space is 300 by 800 feet.

Your job is to create a model of the solar system that is built to scale to fit within this space. Prepare a diagram with accurate measurements drawn to scale. Show your work so that Hoops will approve and fund your design.

High School

Create a mathematical model in order to:

- recommend the most cost effective cell phone contract while considering different variables (e.g., type of cell phone, length of contract, calling/data amounts).
- compare home mortgage options for varied purchase prices, down payments, interest rate plans, and length of term (including variable rates).
- predict future Olympic event winning times (e.g., men’s and women’s marathon).

The Literacy Design Collaborative Task Templates

Funded through the Bill and Melinda Gates Foundation, the Literacy Design Collaborative (LDC) has developed a set of Modules designed to support the integration of the Common Core Standards (6-12) in English/ Language Arts with core content in Science, Social Studies and Technical areas. Each Module consists of a task and associated instructional procedures intended to provide a rigorous, authentic classroom experience for students at the secondary level.

The Tasks require students to read, analyze, and comprehend written materials and then write cogent arguments, explanations, or narratives in the subjects they are studying. A key feature of the LDC's work is a set of generic Task Templates -- fill-in-the-blank "shells" that allow teachers to design their own tasks.

Here are several samples:

Argumentation Task Template

After researching _____ (informational texts) on _____ (content topic or issue), write a/an _____ (essay or substitute) that argues your position on _____ (topic, issue, essential question). Support your position with evidence from research. Be sure to acknowledge competing views. Give examples from from past or current events issues to illustrate and clarify your position.

Social Studies Example:

After researching academic articles on **censorship**, write a/an **blog or editorial** that argues your position on **the use of filters the use of Internet filters by schools**. Support your position with evidence from research. Be sure to acknowledge competing views.

ELA Example:

What makes something something funny? After reading selections from **Mark Twain and Dave Barry**, write a **review** that **compares their their humor** and argues **which type of humor works for a contemporary audience and why**. Be sure to support your position with evidence from the texts.. Be sure to support your position with evidence from the texts.

Informational or Explanatory Task Template

[Insert question] After reading _____ (literature or informational texts), write a/an _____ (essay, report, article, or substitute) that defines and explains (term or concept). Support your discussion with evidence from the text(s). What _____ (conclusions or implications) can you draw?

Social Studies Example:

What did the authors of the American Constitution mean by "rights"? After reading the **Bill of Rights**, write an **essay** that defines **"rights"** and explains **"rights" as the authors use it in this foundational document**. Support your discussion with evidence from the text. What implications implications can you draw?

Examples of Recurring Cornerstone Tasks

Science – Investigation

Upper Elementary/Middle School

The Pooper Scooper Kitty Litter Company claims that their litter is 40% more absorbent than other brands.

You are a Consumer Advocates researcher who has been asked to evaluate their claim. Develop a plan for conducting the investigation. Your plan should be specific enough so that the lab investigators could follow it to evaluate the claim.

High School

Design an investigation to answer the question, *How much does it cost to take a shower?*

Identify the variables that must be considered and then develop a plan for conducting the investigation. Your plan should be specific enough so that other investigators could follow it and answer the question.

Social Studies – Involved Citizen

Upper Elementary/Middle School

You have an idea that you believe will make your school better, and you want to convince school leaders that they should act on your idea. Identify your audience (e.g., principal, PTSA Board, students) and:

- Describe your idea.
- Explain why & how it will improve the school.
- Develop a plan for acting on your idea.

Your idea and plan can be communicated to your target audience in a letter, e-mail, or presentation.

High School

After investigating a current political issue, prepare a position paper/presentation for a public policy maker (e.g., Congress person) or group (e.g., school board, legislative committee). Assume that the policy maker or group is opposed to your position. Your position statement should provide an analysis of the issue, consider options, present your position, rebut opposing positions, and attempt to persuade the public policy maker or group to vote accordingly.

Your position can be communicated in a written report, via a web blog, or delivered as a presentation.

Cornerstone Assessments in Writing (6-12)

GREECE CENTRAL SCHOOL DISTRICT, NY

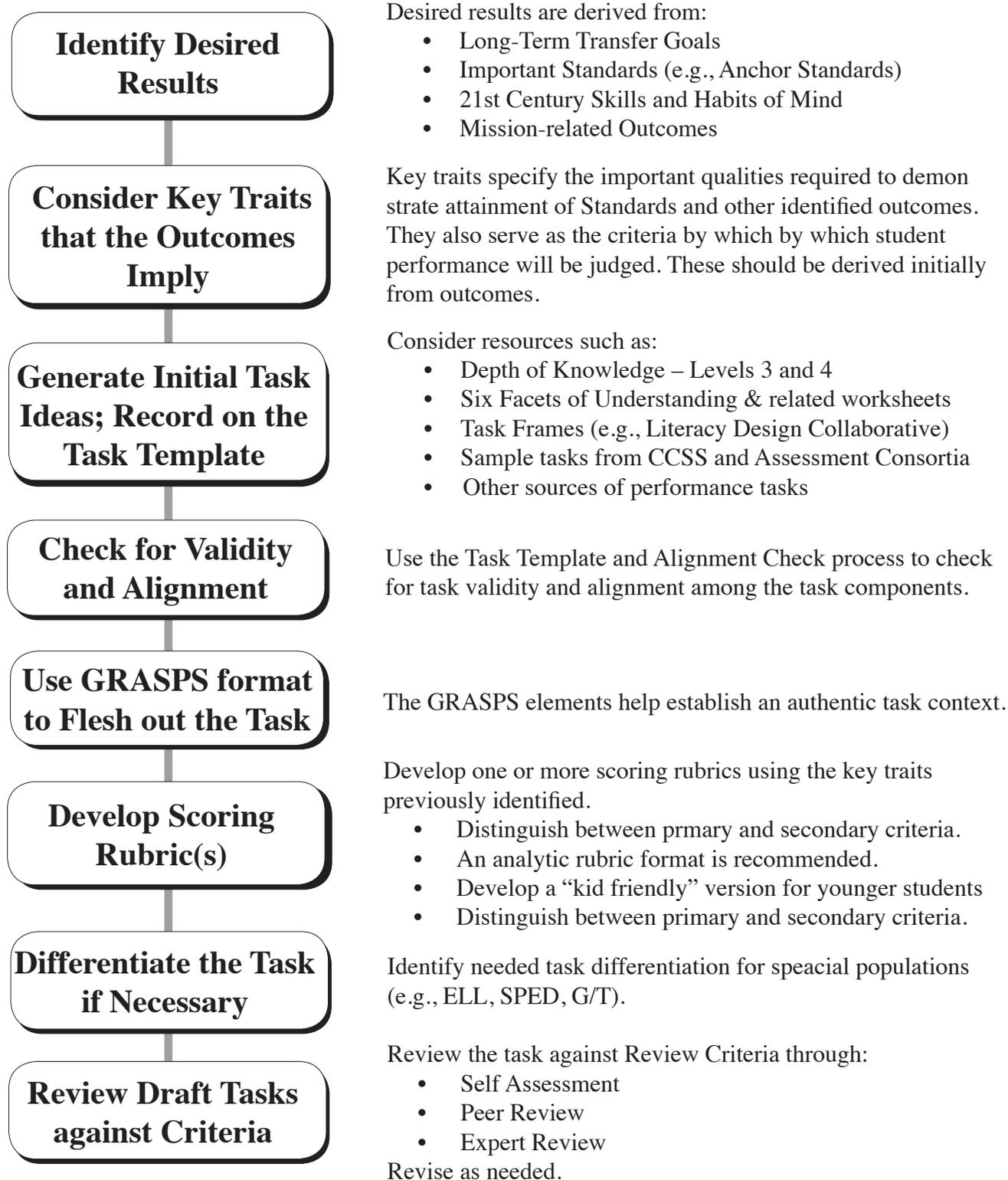
GRADE	Expository	Persuasive	Literary Analysis	Creative/ Expressive
Grade 6	Research report	Position paper	Literary essay on setting or conflict	Original myth
Grade 7	Autobiography	Policy evaluation	Literary essay on character	Persona writing
Grade 8	Research report	Problem/solution essay	Literary essay on symbolism	Narrative fiction
Grade 9	Cause/effect essay	Editorial	Analysis of multiple literary elements	Poetry
Grade 10	Research report	Social issue essay	Critical Lens essay	Historical Persona
Grade 11	Definition essay	Argumentative essay	Comparative genre essay	Parody/satire
Grade 12	Research paper	Position paper	Response to literary criticism	Irony

Designing Cornerstone Performance Tasks: Tools & Templates



Steps in Designing a Cornerstone Task

The following process illustrates one sequence for developing a draft performance task using the Performance Task Template in this packet.



Cornerstone Task Review Criteria

KEY TO RATINGS: 3 = <i>extensively</i> 2 = <i>somewhat</i> 1 = <i>not yet</i>
--

CRITERIA

1. The task addresses/assesses targeted standard(s)/outcome(s).	3	2	1
2. The task calls for understanding and transfer, not simply recall or a formulaic response.	3	2	1
3. The task requires extended thinking – not just an answer.	3	2	1
4. The task is set in an “authentic” context; i.e., written in the G.R.A.S.P.S. form.	3	2	1
5. The task includes criteria/rubric(s) targeting distinct traits of understanding and successful performance; i.e., criteria do not simply focus on surface features of a product or performance.	3	2	1
6. The task directions for students are clear.	3	2	1
<u>Optional:</u>			
7. The task allows students to demonstrate their understanding/proficiency with some appropriate choice/variety (e.g., of products or performances).	3	2	1
8. The task effectively integrates two or more subject areas	3	2	1
9. The task incorporates appropriate use of technology.	3	2	1
Other: _____ _____	3	2	1

Depth of Knowledge

Dr. Norman Webb developed the Depth of Knowledge (DOK) framework to describe and distinguish levels of cognitive complexity. The DOK framework provides a common language and a frame of reference to help educators understand “rigor,” or cognitive demand, in assessments, as well as curricular units, lessons, and tasks. Many State Departments of Education have used the DOK Framework in developing state assessments.

Here is a summary of the four levels of the DOK Framework:

Level 1

- Requires students to recite or recall of information including fact, formula, or simple procedure.
- May require students to demonstrate a rote response, use a well-known formula, follow a set procedure (like a recipe), or perform a clearly defined series of steps.

Level 2

- Requires some mental processing beyond a habitual response.
- Requires students to make some decisions on how to approach a task or problem.

Level 3

- Requires reasoning, planning, using evidence and in most cases to “explain their thinking.”
- Requires students to go beyond; to explain, to generalize, or connect ideas.

Level 4

- Requires some complex reasoning, planning, developing and thinking over an extended period of time.
- May require students to develop a hypothesis and perform complex analysis.

Webb's Depth of Knowledge

Applied to Mathematics

Level 1 (Recall)

-- includes the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple algorithm or applying a formula. That is, in mathematics a one-step, well-defined, and straight algorithmic procedure should be included at this lowest level. Other key words that signify a Level 1 include "identify," "recall," "recognize," "use," and "measure." Verbs such as "describe" and "explain" could be classified at different levels depending on what is to be described and explained.

Level 2 (Skill/Concept)

-- includes the engagement of some mental processing beyond a habitual response. A Level 2 assessment item requires students to make some decisions as to how to approach the problem or activity, whereas Level 1 requires students to demonstrate a rote response, perform a well-known algorithm, follow a set procedure (like a recipe), or perform a clearly defined series of steps. Keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data," and "compare data." These actions imply more than one step. For example, to compare data requires first identifying characteristics of the objects or phenomenon and then grouping or ordering the objects. Some action verbs, such as "explain," "describe," or "interpret" could be classified at different levels depending on the object of the action. For example, if an item required students to explain how light affects mass by indicating there is a relationship between light and heat, this is considered a Level 2. Interpreting information from a simple graph, requiring reading information from the graph, also is a Level 2. Interpreting information from a complex graph that requires some decisions on what features of the graph need to be considered and how information from the graph can be aggregated is a Level 3. Caution is warranted in interpreting Level 2 as only skills because some reviewers will interpret skills very narrowly, as primarily numerical skills, and such interpretation excludes from this level other skills such as visualization skills and probability skills, which may be more complex simply because they are less common. Other Level 2 activities include explaining the purpose and use of experimental procedures; carrying out experimental procedures; making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts.

Webb’s Depth of Knowledge Applied to Mathematics

(continued)

Level 3 (Strategic Thinking)

-- requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is a Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be a Level 3. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and using concepts to solve problems.

Level 4 (Extended Thinking)

-- requires complex reasoning, planning, developing, and thinking most likely over an extended period of time. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as a Level 2. However, if the student is to conduct a river study that requires taking into consideration a number of variables, this would be a Level 4. At Level 4, the cognitive demands of the task should be high and the work should be very complex. Students should be required to make several connections—relate ideas within the content area or among content areas—and have to select one approach among many alternatives on how the situation should be solved, in order to be at this highest level. Level 4 activities include designing and conducting experiments; making connections between a finding and related concepts and phenomena; combining and synthesizing ideas into new concepts; and critiquing experimental designs.

Source: Tennessee Grade Band Training

Webb's Depth of Knowledge

Applied to Reading

Four levels of depth-of-knowledge are used in this analysis. The levels represent a hierarchy based on complexity (rather than difficulty). This difference takes some time to ponder and refine. The hierarchy is based on two main factors: 1) sophistication and complexity, and 2) the likelihood that students at the grade level tested would have received prior instruction or would have had an opportunity to learn the content. Some assessment items have a low depth-of-knowledge level because the knowledge required is commonly known and student with normal instruction at a grade level should have had the opportunity to learn how to routinely perform what is being asked.

Reading Level 1

Level 1 requires students to receive or recite facts or to use simple skills or abilities. Oral reading that does not include analysis of the text, as well as basic comprehension of a text, is included. Items require only a shallow understanding of the text presented and often consist of verbatim recall from text, slight paraphrasing of specific details from the text, or simple understanding of a single word or phrase.

Some examples that represent, but do not constitute all of, Level 1 performance are:

- Support ideas by reference to verbatim or only slightly paraphrased details from the text.
- Use a dictionary to find the meanings of words.
- Recognize figurative language in a reading passage.

Reading Level 2

Level 2 includes the engagement of some mental processing beyond recalling or reproducing a response; it requires both comprehension and subsequent processing of text or portions of text. Inter-sentence analysis of inference is required. Some important concepts are covered, but not in a complex way. Standards and items at this level may include words such as summarize, interpret, infer, classify, organize, collect, display, compare, and determine whether fact or opinion. Literal main ideas are stressed.

A Level 2 assessment item may require students to apply skills and concepts that are covered in Level 1. However, items require closer understanding of text, possibly through the item's paraphrasing of both the question and the answer.

Some examples that represent, but do not constitute all of, Level 2 performance are:

- Use context cues to identify the meaning of unfamiliar words, phrases, and expressions that could otherwise have multiple meanings.
- Predict a logical outcome based on information in a reading selection.
- Identify and summarize the major events in a narrative.

Webb's Depth of Knowledge Applied to Reading

Reading Level 3

Deep knowledge becomes a greater focus at Level 3. Students are encouraged to go beyond the text; however, they are still required to show understanding of the ideas in the text. Students may be encouraged to explain, generalize, or connect ideas.

Standards and items at Level 3 involve reasoning and planning. Students must be able to support their thinking. Items may involve abstract theme identification, inference across an entire passage, or students' application of prior knowledge.

Items may also involve more superficial connections between texts. Some examples that represent, but do not constitute all of, Level 3 performance are:

- Explain or recognize how the author's purpose affects the interpretation of a reading selection.
- Summarize information from multiple sources to address a specific topic.
- Analyze and describe the characteristics of various types of literature.

Reading Level 4

Higher-order thinking is central and knowledge is deep at Level 4. The standard or assessment item at this level will probably be an extended activity, with extended time provided for completing it.

The extended time period is not a distinguishing factor if the required work is only repetitive and does not require the application of significant conceptual understanding and higher-order thinking.

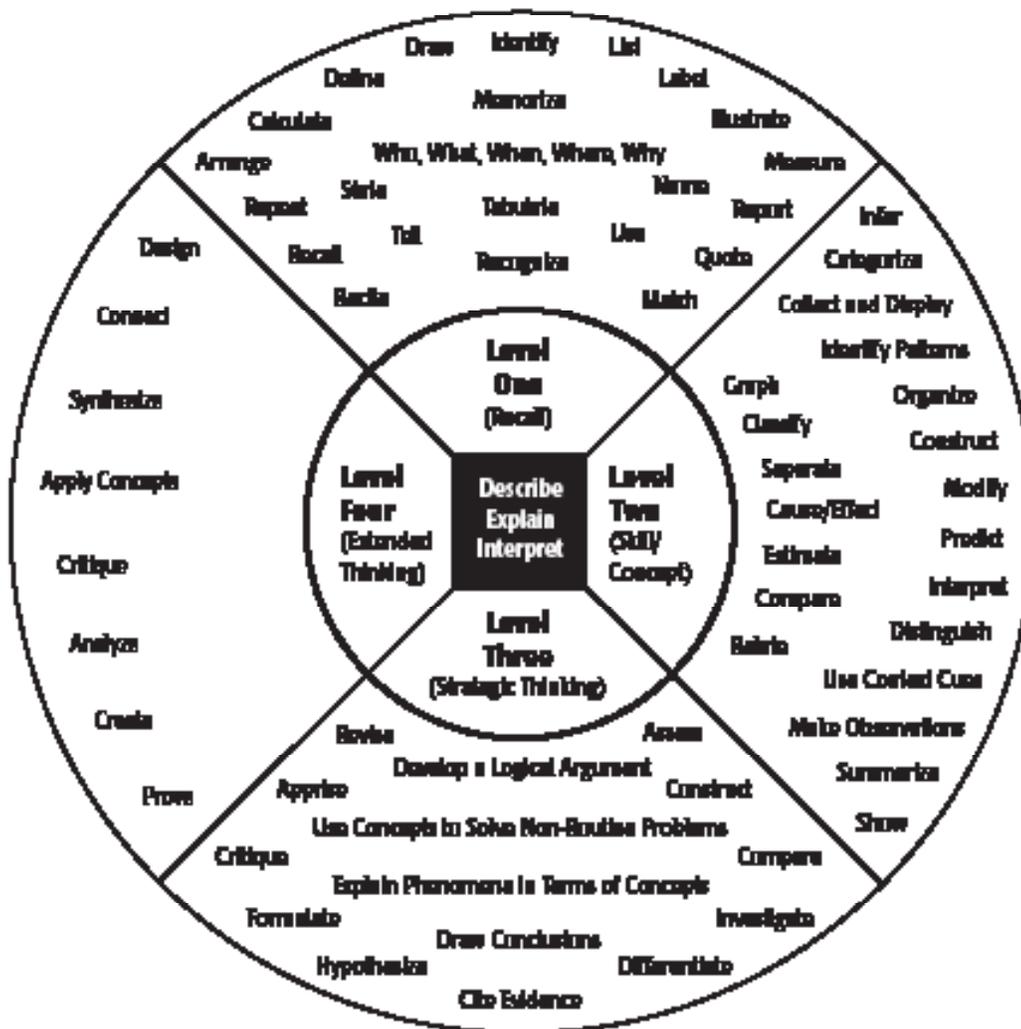
Students take information from at least one passage of a text and are asked to apply this information to a new task. They may also be asked to develop hypotheses and perform complex analyses of the connections among texts.

Some examples that represent, but do not constitute all of, Level 4 performance are:

- Analyze and synthesize information from multiple sources.
- Examine and explain alternative perspectives across a variety of sources.
- Describe and illustrate how common themes are found across texts from different cultures.

Source: Colorado Department of Education

Depth of Knowledge (DOK) Levels

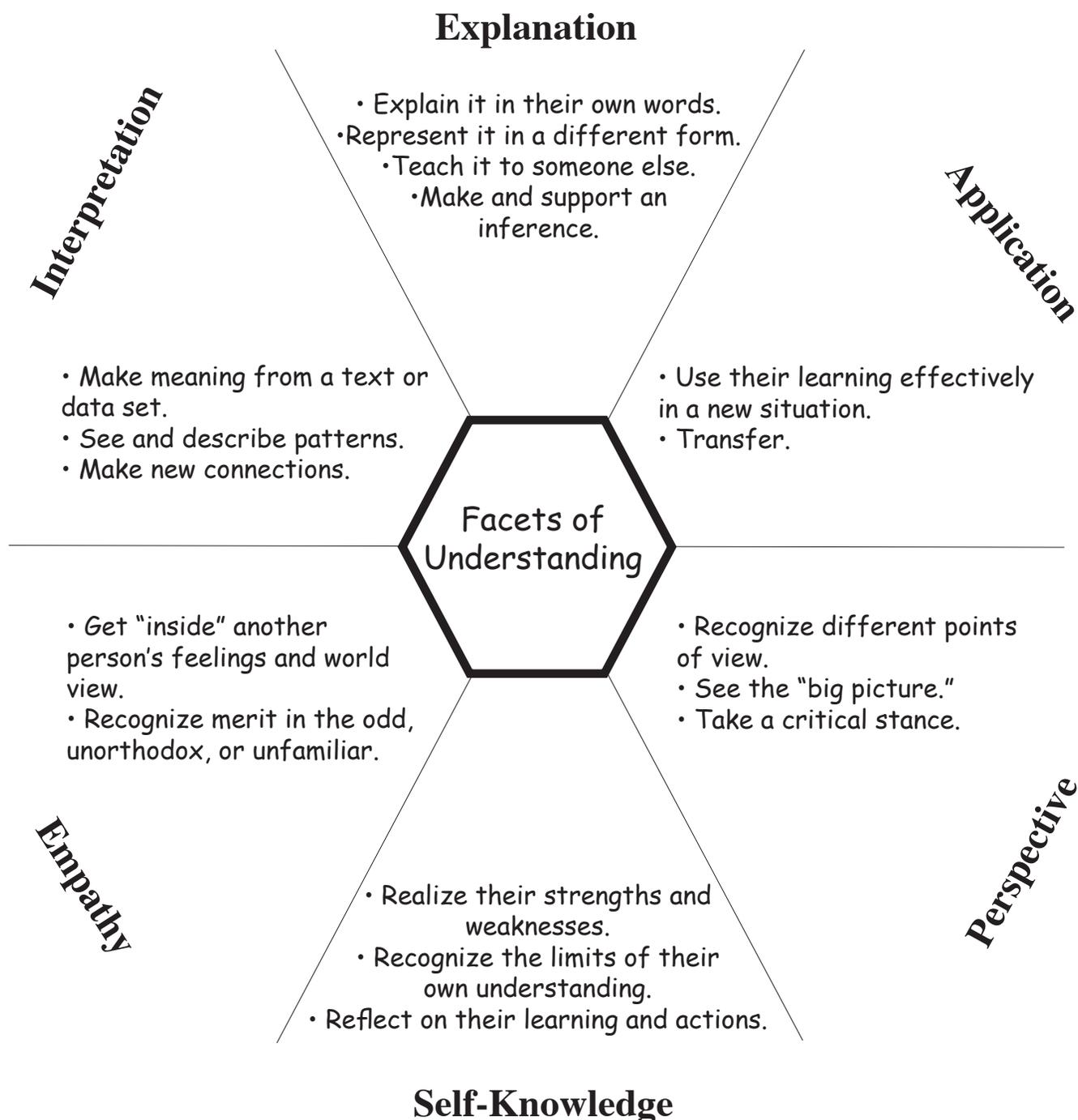


Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
<p>Recall elements and details of story structure, such as sequence of events, character, plot and setting.</p> <p>Conduct basic mathematical calculations.</p> <p>Label locations on a map.</p> <p>Represent in words or diagrams a scientific concept or relationship.</p> <p>Perform routine procedures like measuring length or using punctuation marks correctly.</p> <p>Describe the features of a place or people.</p>	<p>Identify and summarize the major events in a narrative.</p> <p>Use context cues to identify the meaning of unfamiliar words.</p> <p>Solve routine multiple-step problems.</p> <p>Describe the cause/effect of a particular event.</p> <p>Identify patterns in events or behavior.</p> <p>Formulate a routine problem given data and conditions.</p> <p>Organize, represent and interpret data.</p>	<p>Support ideas with details and examples.</p> <p>Use voice appropriate to the purpose and audience.</p> <p>Identify research questions and design investigations for a scientific problem.</p> <p>Develop a scientific model for a complex situation.</p> <p>Determine the author's purpose and describe how it affects the interpretation of a reading selection.</p> <p>Apply a concept in other contexts.</p>	<p>Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/solutions.</p> <p>Apply mathematical model to illustrate a problem or situation.</p> <p>Analyze and synthesize information from multiple sources.</p> <p>Describe and illustrate how common themes are found across texts from different cultures.</p> <p>Design a mathematical model to inform and solve a practical or abstract situation.</p>

Webb, Nancy L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center for Educational Research. University of Wisconsin-Stout. 2 Feb. 2006. <<http://www.ceris.uwstout.edu/wat/>>

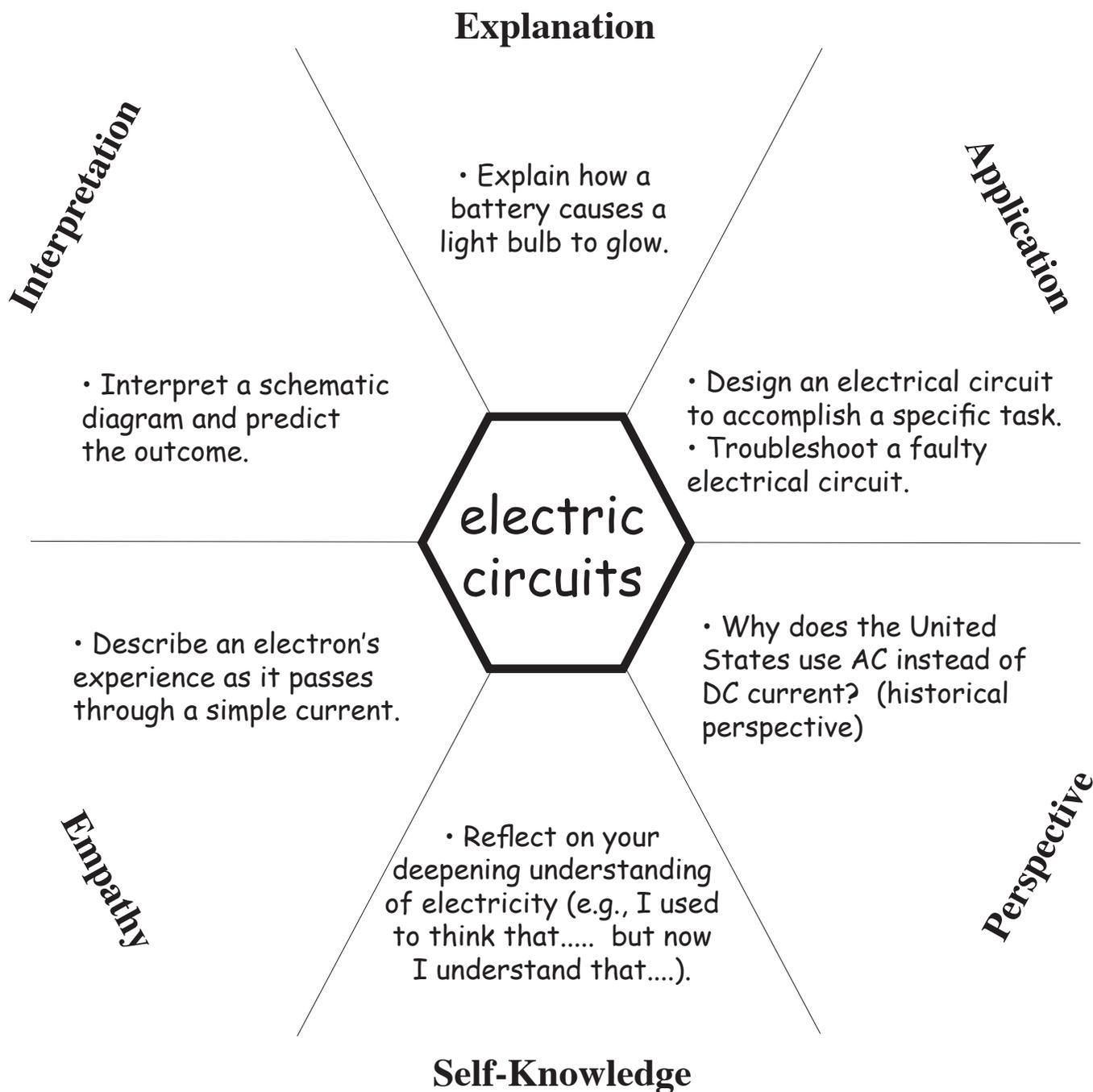
The Facets of Understanding

The facets of understanding provide *indicators* of understanding and thus can be used to select or develop assessments. *If someone really understands something, they can...*



Brainstorming Assessment Ideas Using the Facets

example



Questioning for Understanding using the Facets

Explanation

What is the key idea in _____?
What are examples of _____?
What are the characteristics/parts of _____?
How did this come about? Why is this so?
What caused _____? What are the effects of _____?
How might we prove/confirm/justify _____?
How is _____ connected to _____?
What might happen if _____?
What are common misconceptions about _____?

Interpretation

What is the meaning of _____?
What are the implications of _____?
What does _____ reveal about _____?
How is _____ like _____ (analogy/metaphor)?
How does _____ relate to me/us?
So what? Why does it matter?

Application

How and when can we use this (knowledge/process)?
How is _____ applied in the larger world?
How might _____ help us to _____?
How could we use _____ to overcome _____?

Perspective

What are different points of view about _____?
How might this look from _____'s perspective?
How is _____ similar to/different from _____?
What are other possible reactions to _____?
What are the strengths and weaknesses of _____?
What are the limits of _____?
What is the evidence for _____?
Is the evidence reliable? sufficient?

Empathy

What would it be like to walk in _____'s shoes?
How might _____ feel about _____?
How might we reach an understanding about _____?
What was _____ trying to make us feel/see?

Self-Knowledge

How do I know _____?
What are the limits of my knowledge about _____?
What are my "blind spots" about _____?
How can I best show _____?
How are my views about _____ shaped by _____
(experiences, habits, prejudices, style)?
What are my strengths and weaknesses in _____?

Performance Verbs based on the Six Facets of Understanding

Consider the following “performance verbs” when planning possible ways in which students may demonstrate their understanding.
(See the design tool on the next page.)

<u><i>explain</i></u>	<u><i>interpret</i></u>	<u><i>apply</i></u>	<u><i>perspective</i></u>	<u><i>empathy</i></u>	<u><i>self-knowledge</i></u>
demonstrate	create analogies	adapt	analyze	be like	be aware of
derive	critique	build	argue	be open to	realize
describe	document	create	compare	believe	recognize
design	evaluate	decide	contrast	consider	reflect
exhibit	illustrate	de-bug	criticize	imagine	self-assess
express	judge	design	infer	relate	
induce	make sense of	exhibit		role-play	
instruct	make meaning of	invent			
justify	provide metaphors	perform			
model	read between the	produce			
predict	lines	propose			
prove	represent	solve			
show	tell a story of	test			
synthesize	translate	use			
teach					

Creating Cornerstone Tasks: Idea Starters in English/Language Arts

	<u>Task Ideas</u>
<p>Read and respond to text in various genres (literature, non-fiction, technical) through:</p> <ul style="list-style-type: none">o Global understanding (the “gist”)o Interpretation (between the lines)o Critical Stanceo Personal Connections	
<p>Create oral or written pieces in various genre for various audiences in order to:</p> <ul style="list-style-type: none">o Explain (narrative)o Entertain (creative)o Persuade (persuasive)o Help perform a task (technical)o Challenge or change things (satirical)	
<p>Listen to various sources (e.g., lecture, radio commercial) for various purposes, including for:</p> <ul style="list-style-type: none">o Learningo Enjoymento Performing a tasko Reaching a decision	
<p>Create multi-media pieces in various genre for various audiences in order to:</p> <ul style="list-style-type: none">o Explain (narrative)o Entertain (creative)o Persuade (persuasive)o Help perform a task (technical)o Challenge or change things (satirical)	
<p>Other: _____</p>	

Creating Cornerstone Tasks: Idea Starters in Mathematics

	<u>Task Ideas</u>
<p>Create a mathematical model/representation of complex physical phenomena (e.g, quantity, size, rate, motion, change).</p>	
<p>Data Analysis:</p> <ul style="list-style-type: none"> o Observe _____ o Collect _____ o Measure _____ o Record _____ o Display _____ o Analyze data _____ 	
<p>Make & justify predictions or decisions based on pattern analysis (e.g., What will be the winning time of the women’s marathon in the next two Olympic games?)</p>	
<p>Design a physical structure in response to a need or problem (e.g., a 3-dimensional shipping container to maximize volume and safety).</p>	
<p>Evaluate mathematical/statistical claims (e.g., “Nine out of ten dentists recommend....”).</p>	
<p>Other: _____</p> <p>_____</p>	

Creating Cornerstone Tasks: Idea Starters in Science

	<u>Task Ideas</u>
<p>Design and conduct an experiment to answer a question or explain phenomena.</p> <hr/> <p>Effectively use scientific tools to:</p> <ul style="list-style-type: none">o Observeo Collect datao Measureo Record datao Classifyo Draw conclusions	
<p>Evaluate scientific claims (e.g., XX brand of paper towels absorbs the most liquid of all the leading brands) or arguments.</p>	
<p>Critique experimental design or conclusions. (e.g., Chris thinks that Stain Remover B is more effective than A or C.)</p>	
<p>Analyze current issues involving science or technology. (e.g., Ethanol is the most cost-effective alternative fuel source.)</p>	
<p>Other: _____ _____</p>	

Creating Cornerstone Tasks: Idea Starters in Social Studies

	<u>Task Ideas</u>
<p>Evaluate historical claims or interpretations based on:</p> <ul style="list-style-type: none">o Primary source evidenceo Secondary source evidenceo Personal opinion	
<p>Critically analyze current events/ issues</p> <ul style="list-style-type: none">o Summarize/ compare key pointso Analyze causes and effectso Identify points of view and potential biaso Debate possible courses of action	
<p>Make predictions for current or future events or issues based on understanding of historical patterns.</p>	
<p>Make informed decisions using critical thinking and understanding of historical patterns.</p>	
<p>Act as a responsible citizen in a democracy (e.g., stay informed, study issues, participate in community events, express opinions respectfully, vote).</p>	
<p>Other: _____ _____</p>	

Matrix Method -- Mathematics Common Core Standards

Practice Standards	1 Make sense of problems and persevere in solving them.	2 Reason abstractly and quantitatively.	3 Construct viable arguments and critique the reasoning of others.	4 Model with mathematics.	5 Use appropriate tools strategically.	6 Attend to precision.	7 Look for and make use of structure.	8 Look for and express regularity in repeated reasoning.
MATH GR 3								
Content Standards								
Represent and solve problems involving multiplication and division.								
Understand properties of multiplication and the relationship between multiplication and division.								
Multiply and divide within 100.								
Solve problems involving the four operations, and identify and explain patterns in arithmetic.								
Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.								
Use place value understanding and properties of operations to perform multi-digit arithmetic.								
Develop understanding of fractions as numbers.								
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.								
Represent and interpret data.								
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.								
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.								
Reason with shapes and their attributes.								

Unpacking Standards – ‘Matrix’ Method

<p>Common Core State Standards Mathematics</p> <p>Content Standards</p> <p>Grade 6:</p> <ul style="list-style-type: none">✓ Understand ratio concepts and use ratio reasoning to solve problems.✓ Apply and extend previous understandings of multiplication and division to divide fractions by fractions.o Compute fluently with multi-digit numbers and find common factors and multiples.o Apply and extend previous understandings of numbers to the system of rational numbers.o Apply and extend previous understandings of arithmetic to algebraic expressions.o Reason about and solve one-variable equations and inequalities.o Represent and analyze quantitative relationships between dependent and independent variables.✓ Solve real-world and mathematical problems involving area, surface area, and volume.o Develop understanding of statistical variability.o Summarize and describe distributions.	<p>Process Standards</p> <p>Standards for Mathematical Practice:</p> <ul style="list-style-type: none">✓ 1. Make sense of problems and persevere in solving them.o 2. Reason abstractly and quantitatively.o 3. Construct viable arguments and critique the reasoning of others.✓ 4. Model with mathematics.o 5. Use appropriate tools strategically.✓ 6. Attend to precision.o 7. Look for and make use of structure.o 8. Look for and express regularity in repeated reasoning. <p>TRANSFER GOAL(S) <i>Students will be able to independently use their learning to...</i></p> <p>apply mathematical reasoning to solve problems involving ratio.</p>
	<p>PERFORMANCE TASK Ideas</p> <p>A former NBA legend, Hoops McGinty, has pledged money to the local science museum for an exhibit on our solar system. He pledges the money under one condition: that a regulation NBA basketball be used to represent some aspect of the scale display and that other NBA-related shapes and sizes be used (e.g., a basketball be used to represent a planet or moon). The building floor space is 300 by 800 feet. As designer, how do you propose that the main exhibit hall with a model of the solar system be built to scale? Prepare a diagram with accurate measurements drawn to scale. Show your work so that Hoops will approve and select your design.</p>

Unpacking Standards – ‘Matrix’ Method

<p>The College Board Advanced Placement Program</p> <p>WORLD HISTORY</p>	<p>Process Standards</p> <p>Historical Thinking Skills:</p> <ul style="list-style-type: none"> ✓ Crafting historical arguments from historical evidence <ul style="list-style-type: none"> ○ Historical argumentation ✓ Appropriate use of relevant historical evidence ○ Chronological reasoning <ul style="list-style-type: none"> ○ Historical causation ○ Patterns of continuity and change over time ○ Periodization ○ Comparison and contextualization <ul style="list-style-type: none"> ○ Comparison ○ Contextualization ✓ Historical interpretation and synthesis <ul style="list-style-type: none"> ○ Interpretation ○ Synthesis
<p>Content Standards</p> <p>Theme 1: Interaction between humans and the environment</p> <ul style="list-style-type: none"> ○ Demography and disease ✓ Migration ✓ Patterns of settlement ○ Technology <p>Theme 2: Development and interaction of cultures</p> <ul style="list-style-type: none"> ○ Religions ✓ Belief systems, philosophies, and ideologies ○ Science and technology ○ The arts and architecture <p>Theme 3: State building, expansion and conflict</p> <ul style="list-style-type: none"> ○ Political structures and forms of governance ○ Empires ○ Nations and nationalism ○ Revolts and revolutions ○ Regional, transregional, and global structures and organizations <p>Theme 4: Creation, expansion and interaction of</p> <ul style="list-style-type: none"> ○ Agricultural and pastoral production ○ Trade and commerce ○ Labor systems ○ Industrialization ○ Capitalism and socialism <p>Theme 5: Development and transformation of social structures</p> <ul style="list-style-type: none"> ○ Gender roles and relations ○ Family and kinship ○ Racial and ethnic constructions ○ Social and economic classes 	<p>TRANSFER GOAL(S) <i>Students will be able to independently use their learning to...</i></p> <p>Use primary and secondary sources to produce an informed explanation of what happened, why it happened, and how it impacted the future.</p>
<p>PERFORMANCE TASK Ideas</p> <p>Consider this questions - <i>How did the coercive labor systems in the Americas impact the economic growth and cultural patterns of both Africa and the Americas?</i></p> <p>In 1998, UNESCO decreed that August 23rd is the “International Day for the Remembrance of the Slave Trade and its Abolition.” The focus of this year’s remembrance is how economy shapes public behavior. Prepare a keynote address that describes how coercive labor systems impacted Africa and the Americas both economically and culturally. Be sure to consider alternate points of view in your address as there are some areas of disagreement amongst historians.</p>	

Characteristics of Performance Tasks

Part 1 - Examine the performance task vignettes on the following pages. What distinguishes these tasks from typical test “items”? What common features or characteristics do these share? List characteristics or features that you observe in the space below.

Task(s)/Vignette(s) Examined

Characteristics/Features:

_____	• _____
_____	• _____
_____	• _____
_____	• _____
_____	• _____
_____	• _____

Part 2 - Share and discuss your observations with members of your group. List the common characteristics or features of the performance tasks you examined.

Characteristics/Features:

• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____

Performance Task Examples

Painting a Schoolroom - (*Mathematics, grades 7-9*)

When contractors give us an estimate on repairs, how can we know if the cost is reasonable? You have been asked by the Principal to review a painting contractor's proposal to determine whether s/he is being overcharged. (Students are given room dimensions and cost figures for materials, labor, and a 20% profit.)

Examine the proposal and write a letter to the Principal providing your evaluation of the proposal. Be sure to show your calculations so that s/he will understand how you arrived at your conclusion.

Mail-Order Friend – (*Language Arts, grades K-2*)

Imagine that you have an opportunity to “order” a friend by telephone from a mail-order catalog. Think about the qualities that you want in a friend. Before you “order” your friend over the telephone, practice asking for three characteristics that you want in a friend and give an example of each characteristic. Remember to speak clearly and loud enough so that the sales person will know exactly what to send.

Spot Remover – (*Science, middle school*)

Chris wants to decide which of two spot removers is best. First, he tried Spot Remover A on a T-shirt that had fruit stains and chocolate stains. Next, he he tried Spot Remover B on jeans that had grass stains and rust stains. Then he compared the results.

Explain what did Chris do wrong that will make it hard for him to know which spot remover is best. Redesign the experiment to help him determine the best spot remover.

Just Swinging Around – (*Physics*)

Your design team has been asked by the City Park Department to construct a model for a new playground near the elementary school. The playground will have swing sets and see-saws. For the safety of the children who will be using the playground equipment, you must design your swings so that they don't swing too fast or “loop-the-loop” over the top of the swing set.

Design and conduct an experiment to determine how the variables - length, mass, height of release - affect the rate of back-and-forth movement of a swing. Be prepared to present your findings, recommendations, and a demonstration to the City Park officials.

Source: A Tool Kit for Professional Developers: Alternative Assessment

Here I Come! (*Language Arts, elementary*)

Your principal has asked all students to write a letter to next year's teacher to help the teacher prepare for the new class. Write a letter telling your new teacher about yourself as a learner. Be sure to tell what you find easy to learn, what is most difficult to learn, and how you learn best.

Performance Task Examples

Hall of Recognition – (*Social Studies, Language Arts, grade 4-5*)

The state has announced the establishment of a Hall of Recognition to honor the contributions of local citizens to their community, the state or the nation. Since you are learning about famous individuals from _____, you have been asked to nominate a candidate who you believe would be worthy of admission to the Hall.

Your task is to select and research the life of your chosen individual. Submit a nomination letter to the Hall's selection committee explaining the reasons why your candidate should be included Hall of Recognition. Be sure to describe his/her accomplishments and the contributions they he/she has made.

We Salute You - (*Language Arts, Social Studies, grades 1-4*)

Our room mother, Mrs. _____, has done many things to help us throughout the year. When people do things for you, it is important to show appreciation. We will each be writing a letter to her to thank her and let her know how she has helped our class.

Your letter should include all the parts of a friendly letter. Be sure to tell Mrs. _____ at least three ways she has been helpful to our class. Include at least one thing that you especially appreciate about Mrs. _____.

Chemical Equilibrium – (*Chemistry, grades 11 - 12*)

You are a researcher hired by a group of expert mountain climbers. Hypoxia is the set of symptoms (headache, fatigue, nausea) that comes from a lack of oxygen in body tissues. It is often felt by mountain climbers as they ascend altitude quickly. Sherpas, long-time residents of high altitudes, seem to feel no hypoxic discomfort. Why might that be? Your group wants to know, and to benefit from the knowledge.

Design a series of experiments that would test the difference in hypoxic symptoms between mountain climbers and sherpas. Explain, using chemical equilibrium, why high altitude causes hypoxia in the climbers. How can sherpas avoid these symptoms? How can you test for these possibilities? What would a positive test look like? What inherent errors would you have to consider?

Tour Director – (*World Languages - Level 1*)

You serve on a Welcome Committee to provide tours for new students. Plan a trip to three places (e.g., school, town, mall) in the new student's target language. Incorporate the following vocabulary: directions (left, right, near, far, next to, etc.), places (e.g., classrooms, cafeteria, gym, library, labs, churches, police and fire stations, schools, restaurants, stores) and transportation (e.g., bus, bike, stairs, escalators, taxi, train, car). Remember to include a variety of locations, directions, and forms of transportation on your "trips." Keep sentences simple and narrate in the target language.

Fairy Tales [*Language Arts, grades 3-4*]

You have just finished reading three fairy tales that all have the same general pattern – characters overcoming a confrontation with an animal when the animal's intent is to harm the character(s). Your task is to write a story that includes all the characteristics of a fairy tale and also uses this same general pattern. You will then read your story to your kindergarten reading buddy and teach him/her about the characteristics and general pattern of a fairy tale.

Source: Assessing Outcomes: Performance Assessment Using Dimensions of Learning (ASCD)

Constructing a Task Scenario

(G.R.A.S.P.S. - mathematics example)

Goal:

- **The goal (within the scenario) is to minimize costs for shipping bulk quantities of M&Ms.**

Role:

- **You are an engineer in the packaging department of the M&M Candy Company.**

Audience:

- **The target audience is non-engineer company executives.**

Situation:

- **You need to convince penny-pinching company officers that your container design will provide cost-effective use of the given materials, maximize shipping volume of bulk quantities of M&Ms, and be safe to transport.**

Product/Performance and Purpose:

- **You need to design a shipping container from given materials for the safe and cost-effective shipping of the M&Ms. Then you will prepare a written proposal in which you include a diagram and show mathematically how your container design provides effective use of the given materials and maximizes the shipping volume of the M&Ms.**

Standards & Criteria for Success:

- **Your container proposal should...**
 - provide cost-effective use of the given materials
 - maximize shipping volume of bulk quantities of M&Ms
 - be safe to transport
- **Your models must make the mathematical case.**

Constructing a Task Scenario (G.R.A.S.P.S. - social studies example)

Goal:

- **Your goal is to help a group of foreign visitors understand the key historic, geographic and economic features of our region.**

Role:

- **You are an intern at the Regional Office of Tourism.**

Audience:

- **The audience is a group of nine foreign visitors (who speak English).**

Situation:

- **You have been asked to develop a plan, including a budget, for a four-day tour of the region. Plan your tour so that the visitors are shown sites that best illustrate the key historical, geographic and economic features of our region.**

Product/Performance and Purpose:

- **You need to prepare a written tour itinerary and a budget for the trip. You should include an explanation of why each site was selected and how it will help the visitors understand the key historic, geographic and economic features of our region. Include a map tracing the route for the tour.
[Optional: Provide a budget for the trip.]***

Standards & Criteria for Success:

- **Your proposed tour plan needs to include...**
 - an itinerary and route map
 - the key historical, geographic and economic features of the region
 - a clear rationale for the selected sites
 - *- accurate and complete budget figures

Constructing a Task Scenario (G.R.A.S.P.S.)

Consider the following set of stem statements as you construct a scenario for a performance task. Refer to the previous idea sheets to help you brainstorm possible scenarios. (Note: These are idea starters. Resist the urge to fill in all of the blanks.)

Goal :

- Your task is _____
- The goal is to _____
- The problem/challenge is _____
- The obstacle(s) to overcome is (are) _____

Role:

- You are _____
- You have been asked to _____
- Your job is _____

Audience:

- Your client(s) is (are) _____
- The target audience is _____
- You need to convince _____

Situation:

- The context you find yourself in is _____
- The challenge involves dealing with _____

Product/Performance and Purpose:

- You will create a _____
in order to _____
- You need to develop _____
so that _____

Standards & Criteria for Success:

- Your performance needs to _____
- Your work will be judged by _____
- Your product must meet the following standards _____
- A successful result will _____

Possible STUDENT ROLES and AUDIENCES

KEY: ROLES = R and AUDIENCES = A

- | | | |
|-------------------------|---------------------------------|-----------------------------|
| ___ actor | ___ expert (in _____) | ___ photographer |
| ___ advertiser | ___ eye witness | ___ pilot |
| ___ anthropologist | ___ family member | ___ playwright |
| ___ artist/illustrator | ___ farmer | ___ poet |
| ___ astronaut | ___ filmmaker | ___ policeman/
woman |
| ___ author | ___ firefighter | ___ pollster |
| ___ biographer | ___ forest ranger | ___ radio listener |
| ___ board member | ___ friend | ___ reader |
| ___ boss | ___ geographer | ___ reporter |
| ___ boy/girl scout | ___ geologist | ___ researcher |
| ___ businessperson | ___ government official | ___ reviewer |
| ___ candidate | ___ historian | ___ sailor |
| ___ carpenter | ___ historical figure | ___ school official |
| ___ cartoon character | ___ illustrator | ___ scientist |
| ___ cartoonist | ___ intern | ___ ship's captain |
| ___ caterer | ___ interviewer | ___ social scientist |
| ___ celebrity | ___ inventor | ___ social worker |
| ___ chairperson | ___ judge | ___ statistician |
| ___ chef | ___ jury | ___ storyteller |
| ___ choreographer | ___ lawyer | ___ student |
| ___ CEO | ___ library patron | ___ taxi driver |
| ___ coach | ___ literary critic | ___ teacher |
| ___ community members | ___ lobbyist | ___ t.v. viewer |
| ___ composer | ___ meteorologist | ___ tour guide |
| ___ clients/customer | ___ museum director/
curator | ___ trainer |
| ___ construction worker | ___ museum goer | ___ travel agent |
| ___ dancer | ___ neighbor | ___ traveler |
| ___ designer | ___ newscaster | ___ t.v./movie
character |
| ___ detective | ___ novelist | ___ tutor |
| ___ doctor | ___ nurse | ___ viewer |
| ___ editor | ___ nutritionist | ___ visitor |
| ___ elected official | ___ panelist | ___ web designer |
| ___ embassy staff | ___ parent | ___ zoo keeper |
| ___ engineer | ___ park ranger | Other: _____ |
| ___ ethnographer | ___ pen pal | |

Possible Products and Performances

What student **product(s)** and/or **performance(s)** will provide appropriate evidence of understanding and/or proficiency? The following lists offer possibilities. (Remember that student products and performances should be framed by an explicit purpose or goal and an identified audience.)

<i>Written</i>	<i>Oral</i>	<i>Visual</i>
advertisement biography blog book report/review brochure crossword puzzle editorial essay field guide historical fiction journal lab report letter log magazine article memo newscast newspaper article play poem position paper/ policy brief proposal research report screen play script story test Tweet	audiotape conversation debate discussion dramatization dramatic reading infomercial interview radio script oral presentation oral report poetry reading podcast puppet show rap skit speech song teach a lesson other: _____ other: _____	advertisement banner book/CD cover cartoon collage computer graphic data display design diagram display drawing Face Book flowchart flyer game graph map model Power Point show photograph(s) Prezi painting poster scrapbook sculpture storyboard videotape vodcast web site

Variables in Task Design

The following variables could be considered when designing learning and performance tasks. The desired results, nature and needs of the students, the teacher's style, available resources (time, supplies, equipment, funds) and classroom feasibility will influence choices.

Student Choice – To what extent will students have choices regarding the following?
task topic task activities process for completing task
product(s)/performance(s) audience(s)

Access to Resources – Will all resources needed (information, supplies, equipment) be provided? To what extent will students be expected to gather information, provide their own supplies/equipment, etc.?

all necessary information/ resources provided other: _____

Performance Mode – How will students work?

individually pair/group (optional) pair/group (required)

Audience(s) for Student Product(s)/Performance(s) – To whom will students present their products and performances?

teacher other school staff expert(s) parents/community
peers (in class) other students other: _____

Time Frame – How long will students be involved in this task? Include time for presentations and evaluations.

1 – 2 class periods 3 – 5 periods other: _____

Degree of Scaffolding – To what degree will students be provided with instructional support (scaffolding) as they work on the task?

no support some support, as needed extensive support

Evaluation of Student Product(s)/Performance(s) – Who will be involved in evaluating student products and performances?

teacher other staff expert judge(s) external scorers
student (self evaluation) peers other: _____

Performance Task Template

What Transfer Goals/Standards will be addressed and assessed through this task?

Students will demonstrate an understanding of a balanced diet.

What criteria are implied in the Transfer Goals/Standards regardless of the task specifics?

What qualities must student products/performances demonstrate to reveal understanding/proficiency?

- understanding of a balanced diet
- nutritionally sound meal plan

Through what authentic performance task(s) will students demonstrate understanding/proficiency?

Task Overview (GRASPS)

Since we have been learning about nutrition, you have been asked to help other students your age learn about healthful eating. Your task is to prepare an illustrated brochure to help them to understand what a "balanced diet" is. Present two examples of nutritionally-balanced meals and explain why they reflect healthful eating. Describe and show three potential health problems that might arise as a result of poor eating choices. Explain how these problems could be avoided by following a proper diet.

What student products/performances will provide evidence of desired understanding/proficiency?

- illustrated brochure

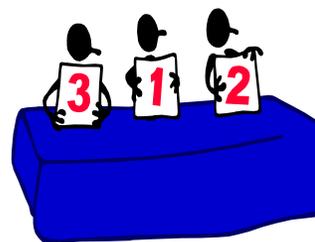
*By which **primary** criteria will student products/performances be evaluated?*

- effective explanation of balanced diet
- examples accurately illustrate nutritionally sound meals
- examples correctly show potential health problems

*By which **secondary** criteria will student products/performances be evaluated?*

- neat and effective illustrations
- correct spelling/grammar

RUBRICS



Definition

Rubrics are criterion-based evaluation tools used in conjunction with “open-ended” performance tasks and projects, which do not have a single, “correct” answer or solution process. *Effective rubrics:*

- clearly define criteria for judging student performance;
- promote more consistent evaluation of student performance;
- help clarify instructional goals and serve as teaching targets;
- provide specific feedback to learners and teachers;
- help students focus on the important dimensions of a product or performance;
- support criterion-based assessment

Two general types of rubrics – holistic and analytic – are widely used to judge student products and performances. A holistic rubric provides an overall impression of a student’s work. Holistic rubrics yield a *single* score or rating for a product or performance. An analytic rubric divides a product or performance into distinct traits or dimensions and judges each separately. Since an analytic rubric rates each of the identified traits independently, a separate score is provided for each.

A third type of rubric -- longitudinal -- describes growth along a fixed, novice-expert continuum, in which each level represents a key benchmark on the road to exit-level performance. These longitudinal rubrics provide a basis for designing backward from mastery performance so that teachers and learners at all levels know where they stand along a developmental continuum against exit-level performance goals. Longitudinal rubrics are not tied to any particular performance or assessment task. Rather, they enable teachers, parents, and learners to chart progress toward desired accomplishments.

We propose that longitudinal rubrics should provide the “performance backbone” for every subject area in the curriculum. Indeed, such systems already exist. In Great Britain, longitudinal rubrics have been in place nationally since the mid-90’s in all subject areas (see Figure 3.x for an example in science), even as developmental rubrics in literacy have been used for decades – in Australia and New Zealand

Analytic Rubric for Graphic Display of Data

	title	labels	accuracy	neatness
weights –	10%	20%	50%	20%
3	The graph contains a title that clearly and specifically tells what the data show.	All parts of the graph (units of measurement, rows, etc.) are correctly labeled.	All data are accurately represented on the graph.	The graph is very neat and easy to read.
2	The graph contains a title that suggests what the data show.	Some parts of the graph are inaccurately labeled.	Data representation contains minor errors.	The graph is generally neat and readable.
1	The the title does not reflect what the data show OR the title is missing.	Only some parts of the graph are correctly labeled OR labels are missing.	The data are inaccurately represented, contains major errors, OR is missing.	The graph is sloppy and difficult to read.

Common Analytic Rubric for Persuasive Writing

SKILL AREA	6	5	4	3	2	1
Meaning: the extent to which the writing exhibits sound understanding, analysis, and explanation, of the writing task and benefit)	<ul style="list-style-type: none"> convey an accurate and in-depth understanding of the topic, audience, and purpose for the writing task offer insightful and thorough analysis and explanation in support of the argument or position 	<ul style="list-style-type: none"> convey an accurate and complete understanding of the topic, audience, and purpose for the writing task offer clear and explicit analysis and explanation in support of the argument or position 	<ul style="list-style-type: none"> convey an accurate although somewhat basic understanding of the topic, audience, and purpose for the writing task offer partial analysis and explanation in support of the argument or position 	<ul style="list-style-type: none"> convey a partly accurate understanding of the topic, audience, and purpose of the writing task offer limited analysis or superficial explanation that only partially support the argument or position 	<ul style="list-style-type: none"> convey a confused or largely inaccurate understanding of the topic, audience, and purpose for the writing task offer unclear analysis or unexamined explanations that fail to support the argument or position 	<ul style="list-style-type: none"> provide no evidence of understanding the writing task or topic make irrelevant explanations that do not support the argument or position
Development: the extent to which ideas are elaborated using specific and relevant details and/or evidence to support the thesis	<ul style="list-style-type: none"> support the position clearly and consistently with arguments that effectively integrate and elaborate on specific ideas and relevant evidence from a variety of sources effectively anticipate and convincingly refute opposing view points 	<ul style="list-style-type: none"> support the position clearly and consistently with arguments that incorporate and explain ideas and specific textual evidence from a variety of sources anticipate and somewhat convincingly refute opposing viewpoints 	<ul style="list-style-type: none"> support the position with arguments that use ideas and relevant textual evidence from a variety of sources anticipate and attempt to refute opposing viewpoints at a basic level 	<ul style="list-style-type: none"> support the position partially, using some ideas and textual evidence but without much elaboration or from limited sources partially anticipate and with a limited or confused attempt to refute opposing viewpoints but 	<ul style="list-style-type: none"> attempt to support the position, but textual ideas and evidence is vague, repetitive, or unjustified allude to opposing viewpoints but make no attempt to refute them 	<ul style="list-style-type: none"> completely lack development and do not include textual evidence make no attempt to anticipate or refute opposing viewpoints
Organization: the extent to which the writer establishes a clear thesis and maintains direction, focus, and coherence	<ul style="list-style-type: none"> skillfully establish and maintain consistent focus on a clear and compelling thesis exhibit logical and coherent structure with claims, evidence, and interpretations that convincingly support the thesis make skillful use of transition words and phrases 	<ul style="list-style-type: none"> effectively establish and maintain consistent focus on a clear thesis exhibit a logical sequence of claims, evidence, and interpretations to support the thesis make effective use of transition words and phrases 	<ul style="list-style-type: none"> establish and maintain focus on a clear thesis exhibit a logical sequence of claims, evidence, and interpretations but ideas within paragraphs may be inconsistently organized make some attempt to use basic transition words and phrases 	<ul style="list-style-type: none"> establish but fail to consistently maintain focus on a basic thesis exhibit a basic structure but lack the coherence of consistent claims, evidence, and interpretations make an inconsistent attempt to use some basic transition words or phrases 	<ul style="list-style-type: none"> establish a confused or irrelevant thesis and fail to maintain focus exhibit an attempt to organize ideas into a beginning, middle, and end, but lack coherence make little attempt to use transition words and phrases 	<ul style="list-style-type: none"> fail to include a thesis or maintain focus complete lack of organization and coherence make no attempt to use transition words and phrases
Language: the extent to which the writing reveals an awareness of audience and purpose through word choice and sentence variety	<ul style="list-style-type: none"> are stylistically sophisticated, using language that is precise and engaging, with a notable sense of voice and awareness of audience and purpose effectively incorporate a range of varied sentence patterns to reveal syntactic fluency 	<ul style="list-style-type: none"> use language that is formal and original, with evident awareness of audience and purpose incorporate varied sentence patterns that reveal an awareness of different syntactic structures 	<ul style="list-style-type: none"> use appropriate language, with some awareness of audience and purpose make some attempt to include different sentence patterns but with awkward or uneven success 	<ul style="list-style-type: none"> rely on basic vocabulary, with little awareness of audience or purpose use a limited awareness of how to vary sentence patterns and rely on a limited range syntactic structures 	<ul style="list-style-type: none"> use language that is imprecise or unsuitable for the audience or purpose revel a confused understanding of how to write in complete sentences and little or no ability to vary sentence patterns 	<ul style="list-style-type: none"> use language that is irrelevant or inappropriate include a poor awareness of sentence fragments and run-ons that significantly hinder comprehension
Conventions: the extent to which the writing exhibits conventional spelling, punctuation, capitalization, and	<ul style="list-style-type: none"> demonstrate control of the conventions with essentially no errors, even with sophisticated language 	<ul style="list-style-type: none"> demonstrate control of the conventions, exhibiting occasional errors when using sophisticated language (e.g., punctuation of complex sentences) 	<ul style="list-style-type: none"> demonstrate partial control, exhibiting occasional errors that do not hinder comprehension (e.g., incorrect use of homonyms) 	<ul style="list-style-type: none"> demonstrate emerging control, exhibiting frequent errors that somewhat hinder comprehension (e.g., agreement of pronouns and antecedents, spelling of basic words) 	<ul style="list-style-type: none"> demonstrate lack of control, exhibiting frequent errors that make comprehension difficult (e.g., subject verb agreement, use of slang) 	<ul style="list-style-type: none"> illegible or unacceptable as literate English

Common Rubric for Mathematical Problem Solving

	Problem Solving	Reasoning and Proof	Communications	Representation
4 Expert	An efficient strategy is chosen and progress towards a solution is evaluated. Adjustments in strategy, if necessary, are made along the way, and / or alternative strategies are considered. Evidence of analyzing the situation in mathematical terms, and extending prior knowledge is present. A correct answer is achieved.	Deductive arguments are used to justify decisions and may result in formal proofs. Evidence is used to justify and support decisions made and conclusions reached. This may lead to generalizing and extending the solution to other cases.	A sense of audience and purpose is communicated. Communication of argument is supported by mathematical properties. Precise math language and symbolic notation are used to consolidate math thinking and to communicate ideas.	Abstract or symbolic mathematical representations are constructed to analyze relationships, extend thinking, and clarify or interpret phenomenon.
3 Practitioner	A correct strategy is chosen based on mathematical situation in the task. Planning or monitoring of strategy is evident. Evidence of solidifying prior knowledge and applying it to the problem. A correct answer is achieved.	Arguments are constructed with adequate mathematical basis. A systematic approach and/or justification of correct reasoning is present. This may lead to clarification of the task and noting patterns, structures and regularities.	A sense of audience or purpose is communicated. <i>and/or</i> approach is evident through a methodical, organized, coherent sequenced and labeled response. Formal math language is used to share and clarify ideas.	Appropriate and accurate mathematical representations are constructed and refined to solve problems or portray solutions.
2 Apprentice	A partially correct strategy is chosen, or a correct strategy for only solving part of the task is chosen. Evidence of drawing on some previous knowledge is present, showing some relevant engagement in the task.	Arguments are made with some mathematical basis. Some correct reasoning or justification for reasoning is present with trial and error, or unsystematic trying of several cases.	Some awareness of audience or purpose is communicated, and may take place in the form of paraphrasing of the task. <i>or</i> Some communication of an approach is evident through verbal/written accounts and explanations, use of diagrams or objects, writing, and using mathematical symbols.	An attempt is made to construct mathematical representations to record and communicate problem solving, but they are incomplete or inappropriate.
1 Novice	No strategy is chosen, or a strategy is chosen that will not lead to a correct solution.	Arguments are made with no mathematical basis. No correct reasoning nor justification for reasoning is present.	No awareness of audience or purpose is communicated. <i>or</i> Little or no communication of an approach is evident <i>or</i> Everyday, familiar language is used to communicate ideas.	No attempt is made to construct mathematical representations.

Source: Exemplars.com

Generic Rubric for 21st Century Skills

INFORMATION GATHERING and PROCESSING

Effectively uses a variety of information-gathering techniques and information resources.

- 4 Uses the important information-gathering techniques and information resources necessary to complete the task. Identifies little-known information resources or uses unique information-gathering techniques.
- 3 Uses the important information-gathering techniques and information resources necessary to complete the task.
- 2 Fails to use some significant information-gathering techniques and information resources necessary to complete the task.
- 1 Fails to use the most important information-gathering techniques or the major information resources necessary to complete the task.

Effectively interprets and synthesizes information.

- 4 Interprets the information gathered for a task in accurate and highly insightful ways. Provides a highly creative and unique synthesis of the information.
- 3 Accurately interprets information gathered for a task and concisely synthesizes it.
- 2 Makes significant errors in interpreting the information gathered for a task or synthesizes the information imprecisely or awkwardly.
- 1 Grossly misinterprets the information gathered for the task or fails to synthesize it.

Accurately assesses the value of information.

- 4 Analyzes information in detail, accurately and insightfully determining whether it is credible and relevant to a specific task.
- 3 Accurately determines whether information is credible and relevant to a specific task.
- 2 Makes some significant errors in determining whether information is credible and relevant to a specific task.
- 1 Makes little or no attempt to determine whether information is credible and relevant to a specific task or totally misjudges the relevance and credibility of information.

Recognizes where and how projects would benefit from additional information.

- 4 Insightfully determines the types of information that will benefit a task and effectively seeks out that information.
- 3 Accurately assesses a task to identify areas requiring additional information for clarification or support and seeks out the needed information.
- 2 Does not accurately assess the information needs of the task or fails to seek out needed information.
- 1 Makes little or no attempt to assess whether a task would benefit from additional information.

Source: Marzano, B., Pickering, D. and McTighe, J. (1993) *Assessing Outcomes: Performance Assessment based on the Dimensions of Learning Model*. Alexandria, VA: ASCD.

Performance List for Writing Fiction

Primary Level

	Terrific	O.K.	Needs Work
1. I have an interesting setting and characters for my story.			
2. The problem in my story will be clear to my readers.			
3. My story events are in order.			
4. The solution will be clear to my readers.			
5. I used many describing words to tell what is happening.			
6. My words “paint a picture.”			
7. I have a title that goes with my story.			

What will you try to do better the next time you write a story?

Four Categories of Criteria

Content – refers to the appropriateness and relative sophistication of the understanding, knowledge and skill employed.

Quality – refers to the overall quality, craftsmanship and rigor of the work.

Process – refers to the quality and appropriateness of the procedures, methods, and approaches used, prior to and during performance.

Result – refers to the impact, success or effectiveness of performance, given the purpose(s) and audience.

Example – Cooking a Meal

Here is an example in which all four types of criteria might be used to evaluate a meal in nine different ways:

Content

1. meal reflects knowledge of food, cooking, situation, and diners' needs and tastes
2. meal contains the appropriate, fresh ingredients
3. meal reflects sophisticated flavors and pairings

Quality

4. meal is presented in aesthetically appealing manner
5. all dishes are cooked to taste

Process

6. meal is efficiently prepared, using appropriate techniques
7. the two cooks collaborated effectively

Result

8. meal is nutritious
9. meal is pleasing to all guests

NOTE: While these four categories reflect common types of criteria, we do not mean to suggest that you must use all four types for each and every performance task. Rather, you should select the criterion types that are appropriate for the goal being assessed through the task and for which you want to provide feedback to learners.

Types of Performance Criteria

By what criteria should understanding performances be assessed? The challenge in answering is to ensure that we assess what is *central* to the understanding, not just what is easy to score. In addition, we need to make sure that we identify the *separate* traits of performance (e.g. a paper can be well-organized but not informative and vice versa) to ensure that the student gets specific and valid feedback. Finally, we need to make sure that we consider the different *types* of criteria (e.g. the quality of the *understanding* vs. the quality of the *performance* in which it is revealed).

Four types of performance criteria (with sample indicators)

content	process	quality	result
Describes the degree of knowledge of factual information or understanding of concepts, principles, and processes.	Describes the degree of skill/proficiency. Also refers to the effectiveness of the process or method used.	Describes the degree of quality evident in products and performances.	Describes the overall impact and the extent to which goals, purposes, or results are achieved.
accurate appropriate authentic complete correct credible explained justified important in-depth insightful logical makes connections precise relevant sophisticated supported thorough valid	careful clever coherent collaborative concise coordinated effective efficient flawless followed process logical/reasoned mechanically correct methodical meticulous organized planned purposeful rehearsed sequential skilled	attractive competent creative detailed extensive focussed graceful masterful organized polished proficient precise neat novel rigorous skilled stylish smooth unique well-crafted	beneficial conclusive convincing decisive effective engaging entertaining informative inspiring meets standards memorable moving persuasive proven responsive satisfactory satisfying significant useful understood

Rubric Design Process #2 – Identifying Important Performance Qualities

PART 1 – Individually, list the important qualities or traits for _____.

PART 2 – With your group, agree to 4-6 of the most important traits. List them below.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Descriptive Terms for Differences in Degree

Use the following general terms to describe differences in degree when constructing a “first-time” scoring rubric with a 4-point scale. Once the rubric is applied, an analysis of student work will yield more precise descriptive language and/or a rubric with more gradations.

Degrees of Understanding

- **thorough/complete**
- **substantial**
- **partial/incomplete**
- **misunderstanding/
serious misconceptions**

Degrees of Frequency

- **always/consistently**
- **frequently/generally**
- **sometimes/occasionally**
- **rarely/never**

Degrees of Effectiveness

- **highly effective**
- **effective**
- **moderately effective**
- **ineffective**

Degrees of Independence

student successfully completes the task:

- **independently**
- **w/ minimal assistance**
- **w/ moderate assistance**
- **only w/ considerable assistance**

Degrees of Accuracy

- **completely accurate; all ____
(facts, concepts, mechanics,
computations) correct**
- **generally accurate; minor
inaccuracies do not affect
overall result**
- **inaccurate; numerous
errors detract from result**
- **major inaccuracies;
significant errors throughout**

Degrees of Clarity

- **exceptionally clear; easy to
follow**
- **generally clear; able to follow**
- **lacks clarity; difficult to
follow**
- **unclear; impossible to follow**

An Analytic Rubric Frame

Understanding or Proficiency: _____

Specific Product/Performance: _____

criteria					
scale					
weights					
4					
3					
2					
1					

Rubric Design Process #3 – Categorizing Student Work

The following six-step process for identifying performance criteria and using them as a basis for designing a scoring rubric. The procedure begins with sorting student work and then proceeds by looking at sample performance criteria from other places.

Step 1: Gather samples of student performance that illustrate the desired skill or understanding.

Choose as large and diverse a set of samples as possible.

Step 2: Sort student work into different stacks and write down the reasons.

For example, place the samples of student work into three piles: strong, middle and weak. As the student work is sorted, write down reasons for placing pieces in the various stacks. If a piece is placed in the “sophisticated” pile, describe its distinguishing features. What cues you that the work is sophisticated? What are you saying to yourself as you place a piece of work into a pile? What might you say to a student as you return this work? The qualities (attributes) that you identify reveal criteria. Keep sorting work until you are not adding anything new to your list of attributes.

Step 3: Cluster the reasons into traits or important dimensions of performance.

The sorting process used thus far in this exercise is “holistic.” Participants in this process end up with a list of comments for high, medium and low performance; any single student product gets only one overall score. Usually, during the listing of comments someone will say something to the effect that, “I had trouble placing this paper into one stack or another because it was strong on one trait but weak on another.” This brings up the need for analytical trait scoring systems; i.e., evaluating each student’s product or performance on more than one dimension.

Rubric Design Process #3

(continued)

Step 4: Write a definition of each trait.

These definitions should be “value neutral” – they describe what the trait is about, not what good performance looks like. (Descriptions of good performance on the trait are left to the “high” rating.)

Step 5: Find samples of student performance that illustrate each score point on each trait.

Find samples of student work which are good examples of strong, weak and mid range performance on each trait. These can be used to illustrate to students what to do and what “good” looks like. It’s important to have more than a single example. If you show students only a single example of what a good performance looks like, they are likely to imitate or copy it.

Step 6: Continuously Refine

Criteria and rubrics evolve with use. Try them out. You’ll probably find some parts of the rubric that work fine and some that don’t. Add and modify descriptions so that they communicate more precisely. Choose better sample papers that illustrate what you mean. Revise traits if you need to. Let students help—this is a tool for learning.

Source: Arter, J. and McTighe, J. (2001). *Scoring Rubrics in the Classroom: Using Performance Criteria for Assessing and Improving Student Performance*. Thousand Oaks, CA: Corwin Press

Ideas for Differentiating Performance Tasks

In some cases, you may need to modify a learning or performance task to accommodate students with special needs. The following lists provide general suggestions.

Notes

___ Review the task to determine if students have been taught the necessary concepts and skills. Provide targeted instruction as needed.

___ Determine if the task is too difficult in its present form and if the time frame is appropriate.

___ In the presentation of a task, try to stay within the framework of the established daily classroom routine.

___ Arrange for special grouping or seating (e.g., in the front of room, at a carrel, near someone helpful).

___ Prepare students for a change in the daily routine by explaining any unusual procedures so that students know what to expect.

___ State the directions in a clear, concise manner. Rephrase the directions if necessary. Focus the student's attention on important details.

___ Provide large print materials for visually-impaired students.

___ Sign directions for hearing-impaired students.

___ Check to see if students understand by asking them to repeat or rephrase the directions.

___ Write the directions on the board or on paper so that students can refer to them when needed.

Ideas for Differentiating Performance Tasks

Notes

___ Provide choices (e.g., product, process, audience) for an open-ended task.

___ In a multi-step activity, simplify the task by providing instruction for one part at a time. Have students complete that part of the activity before you provide instruction for the next part of the activity.

___ Adjust the timing of the task to allow extra processing and response time.

___ Administer the activity over several days.

___ Provide assistance to those students who require help with materials or equipment used in the task. For example, you may need to pre-cut materials or set up equipment.

___ Circulate about the room, inconspicuously providing assistance to students.

___ Provide immediate feedback when tasks are completed.

___ Reinforce students for attempts, approximations, and/or work completion as they proceed through the task.

___ Select simplified reading material on the same topic.

___ Ask specific questions to guide the students' reading.

___ Use graphic organizers to provide visual overviews and show meaningful connections.

Cornerstone Assessments in Writing (6-12)

GREECE CENTRAL SCHOOL DISTRICT, NY

GRADE	Expository	Persuasive	Literary Analysis	Creative/ Expressive
Grade 6	Research report	Position paper	Literary essay on setting or conflict	Original myth
Grade 7	Autobiography	Policy evaluation	Literary essay on character	Persona writing
Grade 8	Research report	Problem/solution essay	Literary essay on symbolism	Narrative fiction
Grade 9	Cause/effect essay	Editorial	Analysis of multiple literary elements	Poetry
Grade 10	Research report	Social issue essay	Critical Lens essay	Historical Persona
Grade 11	Definition essay	Argumentative essay	Comparative genre essay	Parody/satire
Grade 12	Research paper	Position paper	Response to literary criticism	Irony

