Creating an Understanding-based Curriculum and Assessment System for Modern Learning

presented by

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Designing an Understanding-based Curriculum and Assessment System for Modern Learning

ASCD Pre-Conference Institute

March 22, 2024

9:00	Welcome, Introductions, Institute Overview
9:10	The "Big Ideas" of UbD
9:30	A Curriculum and Assessment Blueprint
9:45	Long-Term Transfer Goals and Performance Indicators • Disciplinary • Transdisciplinary
10:30-10:45	Break
10:45-12:00	Overarching Understandings and Essential Questions
12:00-1:15	Lunch
1:15-2:15	Cornerstone Performance Tasks and Common Rubrics • Curriculum Mapping 3.0 • Links to Professional Learning Communities (PLCs)
2:15-2:30	Break
2:30-3:00	Ideas for Design and Implementation Recommended Resources Reflection

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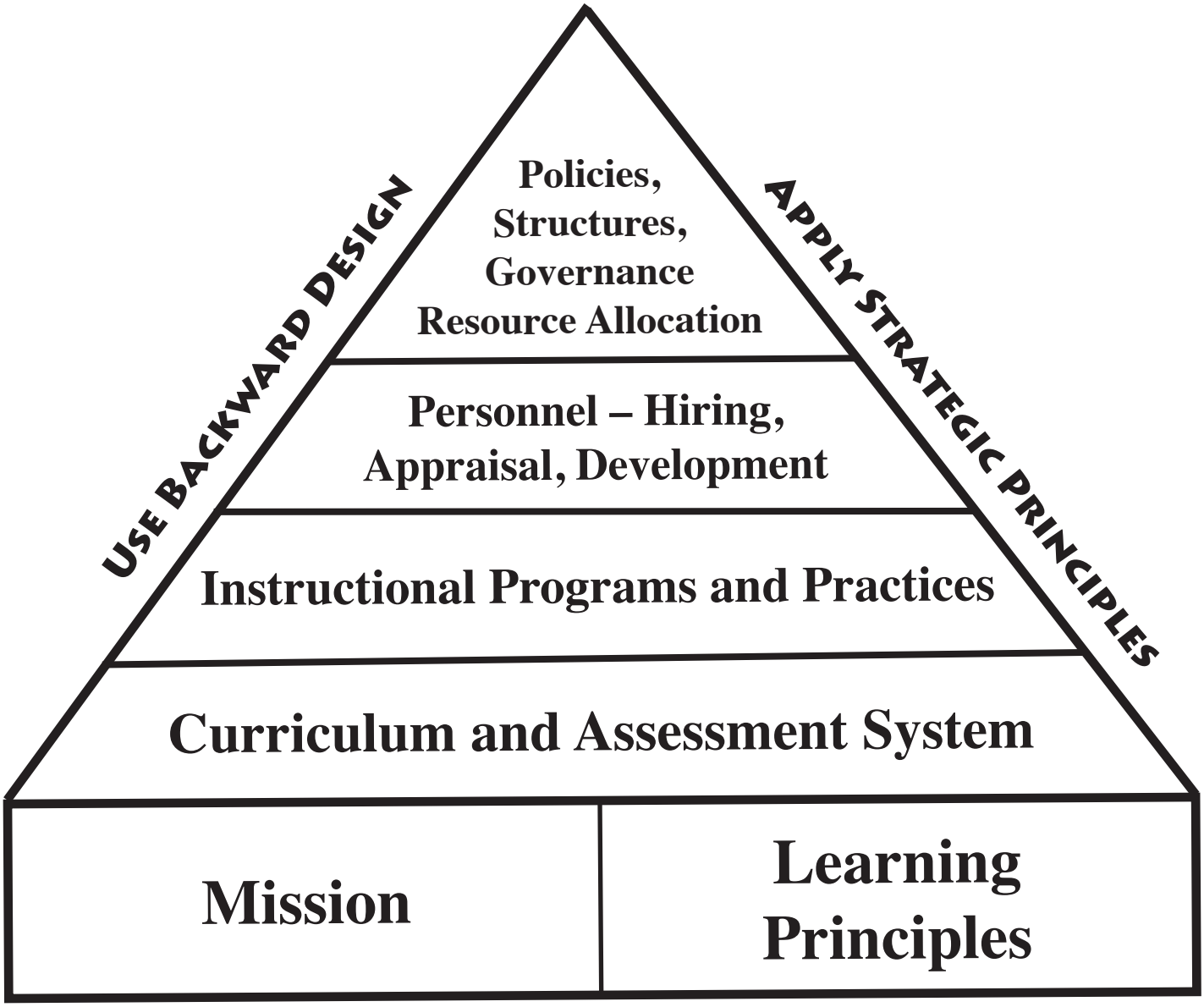
Schooling by Design

Key Elements of an Educational System



Analyzing Mission Statements

A Concept Attainment Exercise

DIRECTIONS: *Examine the four Mission statements below. In what ways do #1 and #2 differ from the second two? What flaws do you notice in the first two? Be prepared to summarize your analysis.*

Flawed Examples

Mission Statement #1

******* High School is a school where students are invited to meet the challenges of a rich and rigorous college preparatory program, where opportunities for performance, applied, and service learning are integrated into the daily structure, and where choice and variety are maintained as genuine options. Moreover, the program incorporates meaningful service learning experiences and entrepreneurial learning into its offerings at every grade level. Greater variety and rigor in the academic program, in the form of the proposed International Baccalaureate curriculum, will offer talented students the external validation and rigorous challenge they need to feed their aspirations and ensure future success.

Mission Statement #2

****** Middle School will form a partnership with home and community to facilitate a positive and safe learning environment based on mutual trust, respect, and understanding. Each student will be provided educational opportunities that develop intellectual, social, emotional, and physical potential.

Strong Examples

Mission Statement #3

Bremen High School aims to develop students who:

- Exhibit creative and critical thinking
- Develop self-esteem, pride, and respect for themselves and others.
- Find a balance between academic success and involvement in extracurricular activities.
- Adapt to a continually changing technological world.
- Demonstrate the democratic living skills of consensus building and group problem solving in order to become active citizens in their community.
- Span the transition from competent student to productive, responsible citizen.
- Understand the value of education and the need for lifelong learning.

Mission Statement #4

The mission of the Memphis City Schools is to prepare all children to be successful citizens and workers in the 21st century. This will include educating them to read with comprehension, write clearly, compute accurately, think, reason, and use information to solve problems.

Examining Your Existing Mission Statement

DIRECTIONS: *Examine your existing Mission statement against the criteria listed below. What revisions, if any, are needed? Record these in the box at the bottom of the page. Then, consider the implications of the revised Mission.*

School Mission Statement:

Qualities of an Effective Mission Statement:

- Describes specific, long-term transfer goals for learners
- Goes beyond specified knowledge and skills in established content standards to address larger aims of schooling (e.g. responsible citizen, lifelong learner, critical thinker)
- Provides enough specificity to be addressed through the design of curriculum, assessment, and instruction
- Key stakeholders are willing to commit to the scope of the mission statement

Needed Revisions:

Implications:

☐ Given the school's mission, what follows for curriculum and assessment?

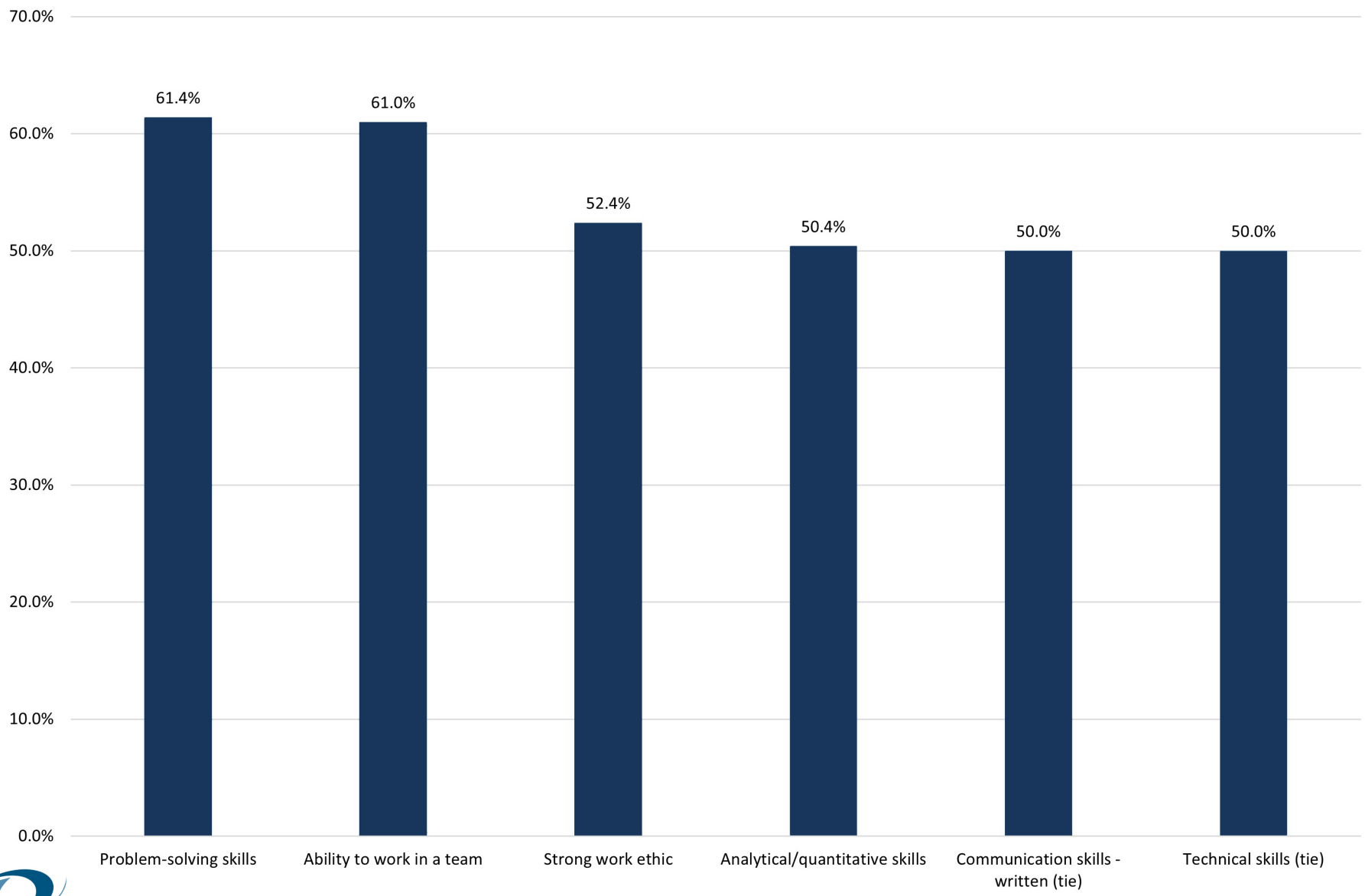
☐ Given its curriculum and assessment (and what we know about learning), what follows for instruction?

☐ Given the schools mission, what follows for grading and reporting?

☐ Given such a system for causing mission-related learning, what follows for the job of teachers and administrators, school structures, policies, and action?

☐ Other: _____

FIGURE 1: TOP 5 ATTRIBUTES EMPLOYERS SEEK ON CANDIDATE'S RESUME



Percent of respondents identifying attribute as very/extremely important

Source: Job Outlook 2023, National Association of Colleges and Employers

Top Ten Skills Important in the Workforce

Source: World Economic Forum

HSSD GRADUATE PROFILE

A **SELF-STARTER** is motivated to take action.

A **CRITICAL THINKER** investigates the quality of ideas and how they are connected.

A **COLLABORATOR** is a helpful and active participant who shares responsibility while working toward a common goal.

A **COMMUNICATOR** seeks to understand others and to be understood.

An **ADAPTABLE** person is able to adjust.

A **RESPONSIBLE** person acts with empathy and takes ownership of the outcomes of their choices.

A **SOLUTIONIST** solves problems.

www.hssd.k12.wi.us

HOWARD-SUAMICO SCHOOL DISTRICT

Schooling by Design: Key Learning Principles

1. Learning is purposeful and contextual.
Therefore, students should be helped to see the purpose in what they are asked to learn. Learning should be framed by relevant questions, meaningful challenges, and authentic applications.

2. Experts organize or chunk their knowledge around transferable core concepts ("big ideas") that guide their thinking about the domain and help them integrate new knowledge.
Therefore, content instruction should be framed in terms of core ideas and transferable processes, not as discrete facts and skills.

3. Different types of thinking, such as classification and categorization, inferential reasoning, analysis, synthesis, and metacognition, mediate and enhance learning.
Therefore, learning events should engage students in complex thinking to deepen their learning.

4. Learners reveal and demonstrate their understanding when they can apply, transfer, and adapt their learning to new and novel situations and problems.
Therefore, teachers should teach for transfer, and students should have multiple opportunities to apply their learning in meaningful and varied contexts.

5. New learning is built on prior knowledge. Learners use their experiences and background knowledge to actively construct meaning about themselves and the world around them.
Therefore, students must be helped to actively connect new information and ideas to what they already know.

6. Learning is social.
Therefore, teachers should provide opportunities for interactive learning in a supportive environment.

7. Attitudes and values mediate learning by filtering experiences and perceptions.
Therefore, teachers should help students make their attitudes and values explicit and understand how they influence learning.

8. Learning is nonlinear; it develops and deepens over time.
Therefore, students should be involved in revisiting core ideas and processes so as to develop deeper and more sophisticated learning over time.

9. Feedback enhances learning and performance.
Therefore, ongoing assessments should provide learners with regular, timely, and user-friendly feedback, along with the opportunity to use it to practice, retry, rethink, and revise.

10. Effectively accommodating a learner's preferred learning style, prior knowledge, and interests enhances learning.
Therefore, teachers should pre-assess to find out students' prior knowledge, learning preference, and interests; then differentiate their instruction to address the significant differences they discover.

Seven Principles of Learning*

1. Learning with understanding is facilitated when new and existing knowledge is structured around the major concepts and principles of the discipline.
2. Learners use what they already know to construct new understandings.
3. Learning is facilitated through the use of metacognitive strategies that identify, monitor, and regulate cognitive processes.
4. Learners have different strategies, approaches, patterns of abilities, and learning styles that are a function of the interaction between their heredity and prior experiences.
5. Learners' motivation to learn and sense of self affects what is learned, how much is learned, and how much effort will be put into the learning process.
6. The practices and activities in which people engage while learning shape what is learned.
7. Learning is enhanced through socially supported interactions.

Principles of Instruction for Understanding*

Teaching for conceptual understanding in advanced mathematics and science courses:

1. Maintains students' focus on the central organizing themes and underlying concepts of the discipline.
2. Is based on careful consideration of what students already know, their ideas and ways of understanding the world, and the patterns of practice they bring into the classroom.
3. Focuses on detecting, making visible, and addressing students' often fragile, underdeveloped understandings and misconceptions.
4. Reflects an understanding of differences in students' interests, motivations, preferences, knowledge, and abilities.
5. Is designed to provide the appropriate degree of explicitness for the situation and the abilities of the learners.
6. Recognizes students' preferences for and varying abilities to process different symbol systems, such as language (written and spoken), images, and numerical representations, by employing multiple representations during instruction.
7. Engages students in worthwhile tasks that provide access to powerful mathematical and scientific ideas and practices; moves students to see past the surface features of problems to the deeper, more fundamental principles; and develops their conceptual understanding.
8. Structures learning environments in which students can work collaboratively to gain experience in using the ways of thinking and speaking used by experts in the discipline.
9. Orchestrates classroom discourse so that students can make conjectures, present solutions, and argue about the validity of claims, thus helping them explore old understandings in new ways, reveal misconceptions, and generalize and transfer their learning to new problems or more robust understandings.
10. Provides explicit instruction in metacognition as part of teaching in the discipline.
11. Uses various kinds of formal and informal formative assessments to monitor students' understanding and target instruction effectively.
12. Creates expectations and social norms for the classroom that allow students to experience success and develop confidence in their abilities to learn.

Conditions for Powerful Learning

Dr. Ronald S. Brandt

In general, we can say that people learn well when:

What They Learn

1. What they learn is personally meaningful; they feel a need to learn it.

2. What they learn is challenging and they accept the challenge.

3. What they learn is appropriate for their developmental level.

How They Learn

4. They can learn in their own way and have some degree of choice and control.

5. They use what they already know as they construct new knowledge.

6. They have opportunities for social interaction.

7. They get helpful feedback.

8. They acquire and use strategies.

The Setting in Which They Learn

9. They experience a positive emotional climate.

10. Their environment supports the intended learning.

Ideas, Examples, Implications

Source: Brandt, R. (1998). *Powerful Learning*. Alexandria, VA: ASCD

Grand Island Public Schools

K–12 Social Studies Program MISSION

The goal of social studies education is to prepare students to be responsible and productive citizens in a democratic society arid a globally interdependent world. Through an integrated study of social studies disciplines, students will acquire necessary knowledge, skills, and attitudes as they become lifelong learners.

Social Studies provides content that students will use to understand political, social, and economic issues and apply their knowledge and skills to make effective personal and public decisions. A standards based social studies curriculum builds knowledge of specific discipline content, thinking skills, commitment to democratic values, and citizen participation, all essential to maintaining a democratic way of life.

GIPS K–12 Social Studies Program BELIEFS

• All students learn through a variety of relevant experiences.
Therefore, we will provide interactions that activate and build on prior knowledge and promote higher level thinking skills.

• Research shows active learning is essential.
Therefore, we will provide students with a variety of active, student centered, multi-sensory learning opportunities.

• Instruction should be relevant, meaningful, and based on student needs.
Therefore, we will provide opportunities for students to make connections to their own lives using a variety of instructional strategies.

• The world is constantly changing.
Therefore, we will provide the opportunities for students to understand that the present connects to the past and affects the future.

• We live in a culturally diverse society.
Therefore, we will develop student understanding of diverse cultures that honors equality and human dignity.

• Assessment should be ongoing, diagnostic, and aligned with instruction.
Therefore, we will provide multiple authentic assessment tools.

• The use of community resources is essential for effective instruction.
Therefore, we will use the rich history and ethnic diversity of our community to enhance learning.

• Active and informed citizen participation is essential to democracy.
Therefore, we will provide instruction and curriculum designed to develop students who will be informed, active problem solvers, and willing participants in the democratic process.

Sheridan School
Visual Art Program

Philosophy

Sheridan School believes that all our students are artists. Our program supports students as they develop an individual artistic vision that is informed by their own experiences, ideas, and understandings, as well as being grounded in the fundamental elements and principles of Art.
Each step of the process, from conception to creation, is valued and encouraged. In collaboration with the teachers and their classmates, students seek to comprehend and communicate visual ideas in their own unique manner through a process of observation, discussion, exploration, revision, and reflection.
Students consider the role of Art and of the artist in a variety of cultures, from ancient to contemporary, as part of their investigation into artistic techniques and media. The Art classroom is rich with opportunities for exploration, innovation, and reflection, encouraging a respect for the materials, tools, and ideas the community shares. This learning environment facilitates students' inquisitive and open journey through the world of Art.

Mission – Transfer Goals

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

Learning Principles

To support our mission, we . . .
• Create a community of artists
• Build a classroom environment that inspires independence, imagination and innovation
• Make connections between students' art, their personal lives and the larger world
• Encourage experimentation and revision
• Build on each students' prior knowledge, skills and understandings
• Value depth of understanding as well as breadth of knowledge
• Emphasize the learning process and the development of ideas
• Support students' self-reflection
• Assist students in the act of connecting, critiquing, and responding to the work of others
• Provide students with opportunities to transfer their understanding to new contexts and experiences
• Inspire each child's development as an artist by exposing them to a variety of cultural and historical artwork
• Respond to the individual needs of the students in order to continually challenge and extend their thinking
• Provide multiple avenues for students to represent their artistic thinking

Modern Languages Department Learning Principles

The Dalton School Languages Department is committed to acting on the following principles of learning:

1. Learning is purposeful and contextual. Learners reveal and demonstrate their understanding when they can apply, transfer, and adapt their learning to new and novel situations and problems.
Therefore, we will help students see the relevance of what they are learning. We will provide opportunities for students to use their language in real life situations inside and outside of the classroom.

2. New learning is built on prior knowledge. Learners use their experiences and background knowledge to actively construct meaning about themselves and the world around them.
Therefore, we will connect new learning to students' experiences and encourage learning by doing.

3. Language learning is social.
Therefore, we will employ cooperative learning methods, develop students' interpersonal communication skills, and encourage sharing and presenting in small and large groups.

4. Learning is both linear and nonlinear, but needs to be structured around core concepts.
Therefore, we will help students understand the underlying concepts and patterns in language in addition to teaching basic skills.

5. A learner's attitude and motivation to learn affects their effort and results.
Therefore, we will seek to provoke curiosity and encourage self-motivation so that the learner wants to learn.

6. Feedback enhances learning and performance.
Therefore, we will provide guided feedback with opportunities for learners to retry, refine and revise.

7. Effectively accommodating a learner's learning style and interests enhances learning.
Therefore, we will differentiate instruction to be responsive to different learning styles.
We will provide choices for all learners, and offer varied assessments so the different skills are tapped within a given level of language.

8. Language learning is enhanced when students acquire and use learning tools and strategies.
Therefore, we will provide language learning tools and strategies appropriate for our learners.

9. Learning is enhanced when students experience a positive emotional climate that supports the intended learning.
Therefore, we will establish a safe, supportive and inclusive classroom setting where experimentation and risk-taking is rewarded and where it is o.k. to make mistakes. We will encourage the sharing of diverse points of view and respectful listening.

Principles of Curriculum for Understanding*

Noted educational researcher, Dr. Robert Marzano, concluded that "a guaranteed and viable curriculum" is the most significant school level factor impacting student achievement.

Students presented with vast amounts of content knowledge that is not organized into meaningful patterns are likely to forget what they have learned and to be unable to apply the knowledge to new problems or unfamiliar contexts (Haidar, 1997). Curriculum for understanding provides ample opportunity for students to apply their knowledge in a variety of contexts and conditions. This helps them transfer their learning to new situations and better prepares them for future learning (Bransford and Schwartz, 2000). Providing students with frequent opportunities to apply what they learn in multiple contexts requires a reallocation of instructional time. Allowing time for in-depth learning means decisions must be made about what knowledge is of most worth. For this reason, the curriculum needs to specify clearly the appropriate balance between breadth and depth of coverage in terms of student learning outcomes.

A mathematics or science curriculum for advanced study that promotes learning with understanding:

1. Structures the concepts, factual content, and procedures that constitute the knowledge base of the discipline around the organizing principles (big ideas) of the domain.
2. Links new knowledge to what is already known by presenting concepts in a conceptually and logically sequenced order that builds upon previous learning within and across grade levels.
3. Focuses on depth of understanding rather than breadth of content coverage by providing students with multiple opportunities to practice and demonstrate what they learn in a variety of contexts.
4. Includes structured learning activities that, in a real or simulated fashion, allow students to experience problem solving and inquiry in situations that are drawn from their personal experiences and real-world applications.
5. Develops students' abilities to make meaningful applications and generalization to new problems and contexts.
6. Incorporates language, procedures, and models of inquiry and truth verification that are consistent with the accepted practice of experts in the domain.
7. Emphasizes interdisciplinary connections and integration and helps students connect learning in school with the issues, problems, and experiences that figure prominently in their lives outside of the classroom.

*Source: Committee on Programs for Advanced Study of Mathematics and Science in American High Schools

A Summary of Key Research Findings Supporting Understanding by Design

• Views of how effective learning proceeds have shifted from the benefits of diligent drill and practice to focus on students' understanding and application of knowledge.

• Experts' knowledge is organized... Their knowledge is not simply a list of facts and formulas that are relevant to the domain; instead, their knowledge is organized around core concepts or 'big ideas' that guide their thinking about the domain (e.g., Newton's second law of motion); it is "conditionalized" to specify the contexts in which it is applicable; it supports understanding and transfer (to other contexts) rather than only the ability to remember. Novices' knowledge is much less likely to be organized around big ideas; they are more likely to approach problems by searching for correct formulas and pat answers that fit their everyday intuitions.

• Learning must be guided by generalized principles in order to be widely applicable. Knowledge learned at the level of rote memory rarely transfers; transfer most likely occurs when the learner knows and understands underlying principles that can be applied to problems in new contexts. Learning with understanding is more likely to promote transfer than simply memorizing information from a text or a lecture.

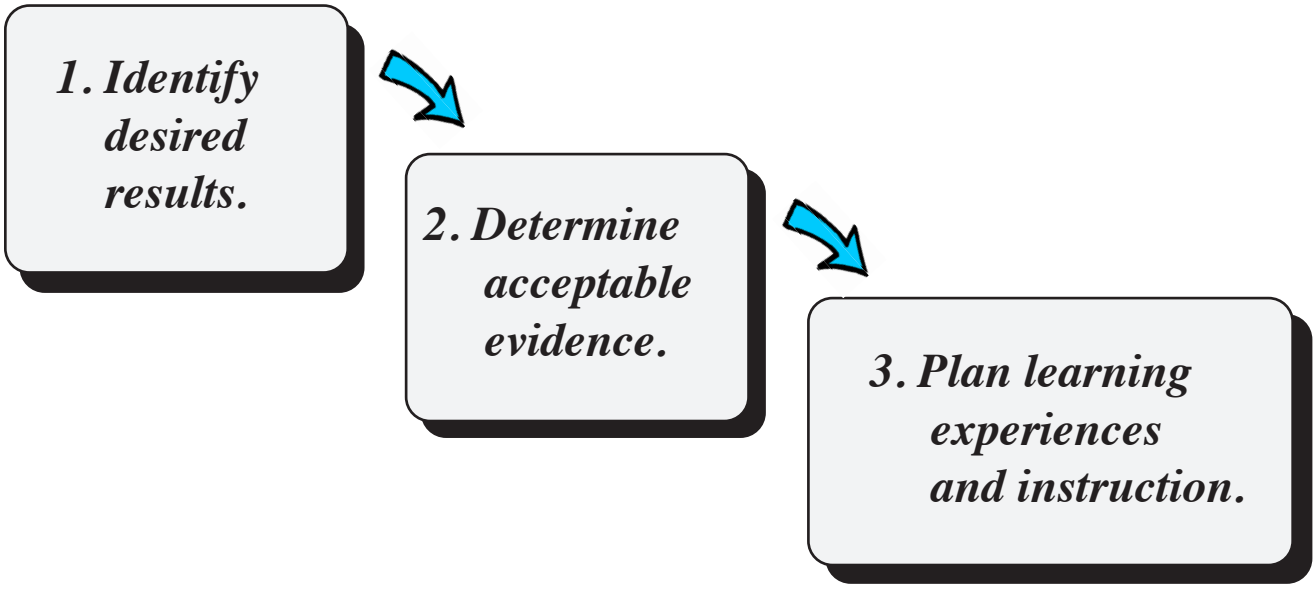
• Skills and knowledge must be extended beyond the narrow contexts in which they are initially learned. For example, knowing how to solve a math problem in school may not transfer to solving math problems in other contexts. It is essential for a learner to develop a sense of *when* what has been learned can be used -- the conditions of application. Failure to transfer is often due to learners' lack of this type of conditional knowledge.

• Curricula that are a "mile wide and an inch deep" run the risk of developing disconnected rather than connected knowledge. Research on expertise suggest that a superficial coverage of many topics in the domain may be a poor way to help students develop the competencies that will prepare them for future learning and work."

• Feedback is fundamental to learning, but feedback opportunities are often scarce in classrooms. Students may receive grades on tests and essays, but these are summative assessments that occur at the end of projects. What are needed are formative assessments, which provide students with opportunities to revise and improve the quality of their thinking and understanding.

• Assessments must reflect the learning goals that define various environments. If the goal is to enhance understanding and applicability of knowledge, it is not sufficient to provide assessments that focus primarily on memory for facts and formulas. Many assessments measure only propositional (factual) knowledge and never ask whether students know *when, where,* and *why* to use that knowledge. Given the goal of learning with understanding, assessments and feedback must focus on understanding, and not only on memory for procedures or facts.

The Three Stages of Backward Design

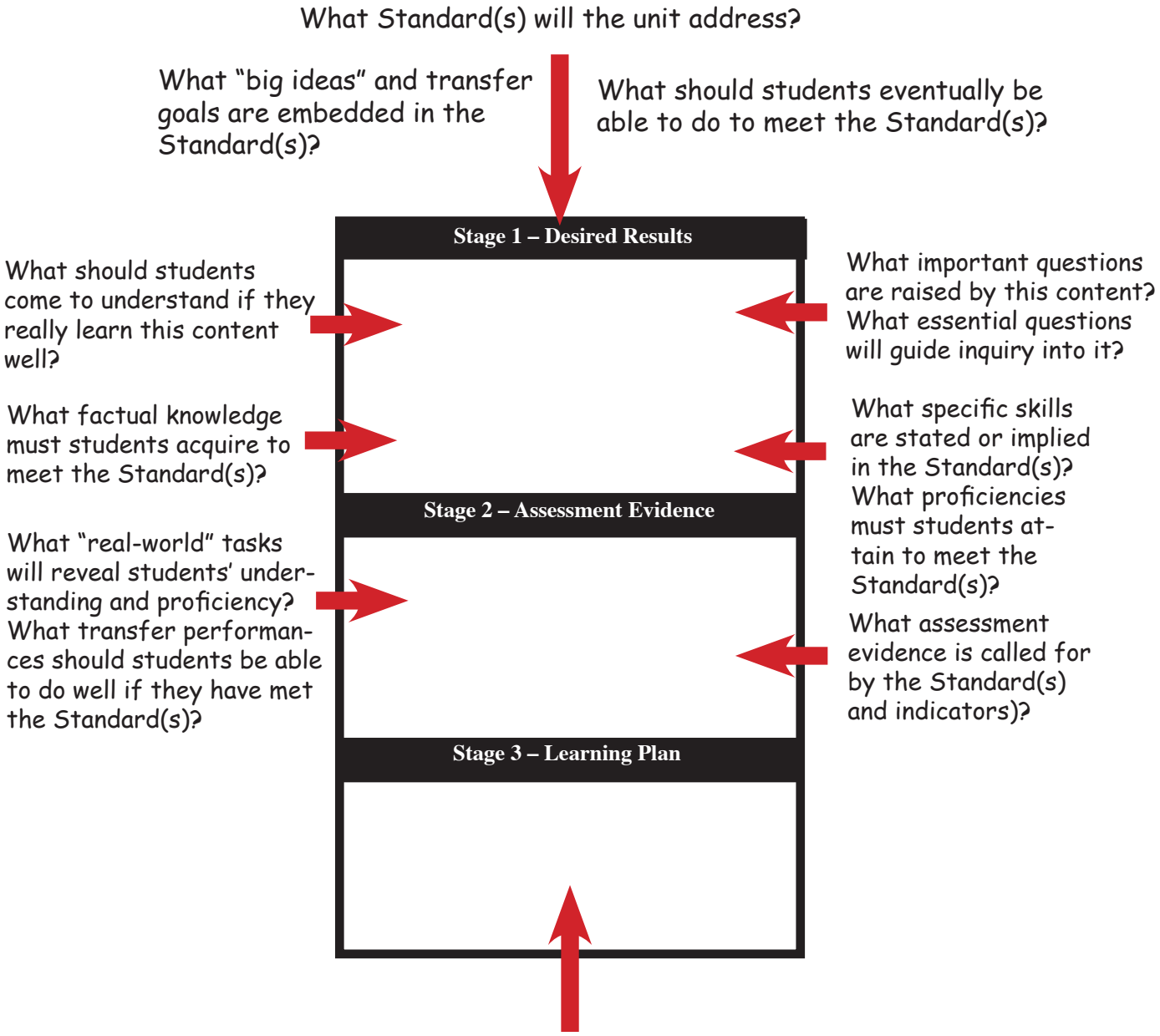


Stage 1. Identify Desired Results – In stage one we consider the goals. What should students know, understand, and be able to do? What big ideas are worthy of understanding and implied in the established goals (e.g., Standards, curriculum objectives, etc.)? What "enduring" understandings are desired? What essential questions are worth pursuing to guide student inquiry and meaning making? What specific knowledge and skills are targeted and needed for effective performance?

Stage 2. Determine Acceptable Evidence – In the second stage we consider evidence of learning. How will we know if students have achieved the desired results and met the Standards? How will we know that students *really* understand the identified big ideas? What will we accept as evidence of proficiency? The backward design orientation suggests that we think about our design in terms of the collected assessment evidence needed to document and validate that the desired results of Stage 1 have been achieved.

Stage 3. Plan Learning Experiences and Instruction – With identified results and appropriate evidence of understanding in mind, it is *now* time to develop the learning plan. What will need to be taught and coached in light of the performance goals? What resources will be emplyed? How should the learning experiences be sequenced? What on-going, formative assessments will provide feedback for improvement? In planning learning activities, consider the AMT categories: How will we help learners *acquire* needed knowledge and skills? How will we engage learners in *making meaning* of important ideas? How will we equip students to *transfer* their learning?

Using the *Understanding by Design®* Framework for Curriculum Planning



Stage 1 – Desired Results

Established Goals

National Driver Development Standards

G1 Demonstrate a working knowledge of rules, regulations and procedures of operating an automobile

G2 Use visual search skills to obtain correct information and make reduced-risk decisions for effective speed and position adjustments

G3 Interact with other users within the Highway Transportation System by adjusting speed, space, and communications to avoid conflicts and reduce risk

G4 Demonstrate balanced vehicle movement through steering, braking, and accelerating in a precise and timely manner throughout a variety of adverse conditions

Source: *American Driver & Traffic Safety Association*

Transfer

Students will be able to independently use their learning to...

T1 drive courteously and defensively without accidents or needless risk.

T2 anticipate and adapt their knowledge of safe and defensive driving to various traffic, road and weather conditions.

Meaning

UNDERSTANDINGS
Students will understand that...

U1 Defensive driving assumes that other drivers are not attentive and that they might make sudden or ill-advised moves.

U2 As speed increases, the time needed to stop or react is ddecreases, thus requiring constant anticipation & attention.

U3 Effective drivers constantly adapt to the various traffic, road, & weather conditions.

ESSENTIAL QUESTIONS
Students will keep considering...

Q1 What must I anticipate and do to minimize risk and accidents when I drive?

Q2 What makes a safe and courteous driver?

Acquisition

Students will know...

K1 the driving laws of their state, province or country

K2 rules of the road for legal, courteous and defensive driving

K3 basic car features and functions

K4 what to do in case of an accident

Students will be skilled at...

S1 procedures of safe driving under varied traffic, road & weather conditions

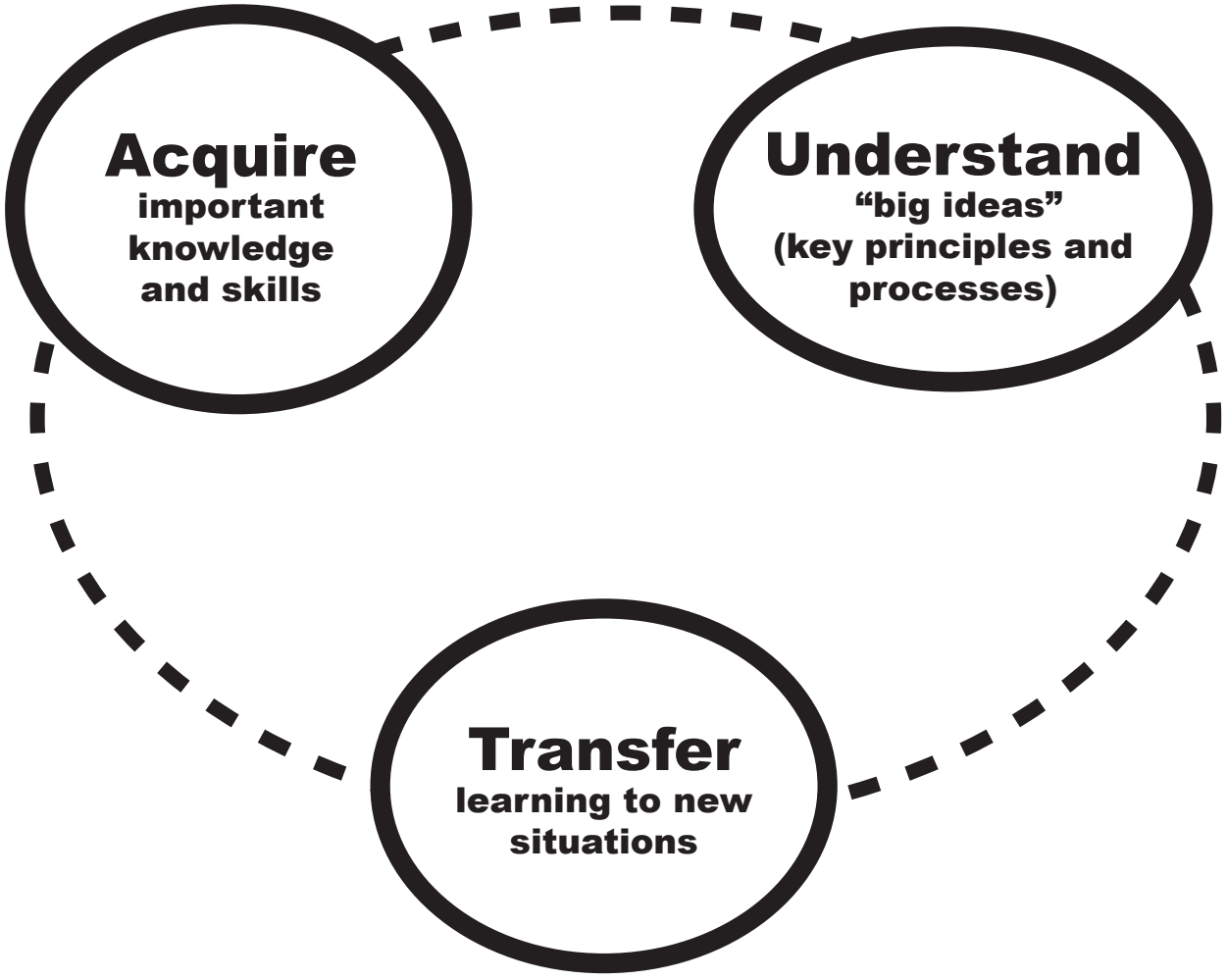
S2 signalling/communicating intentions

S3 quick response to surprises

S4 parallel parking

Three Interrelated Learning Goals

We have found it useful to examine three distinct, yet interrelated, learning goals: 1) **acquire** new information and skills, 2) come to **understand** the "big ideas" of that content, and 3) be able to **transfer** one's learning to new situations. These three goal categories link directly to elements identified in *Understanding by Design*. In Stage 1 teachers specify the knowledge and skill that they intend students to acquire. They also decide upon the "big ideas" they want students to come to understand and develop companion essential questions to help students *make meaning* of those ideas. In Stage 2, teachers develop performance tasks requiring transfer as evidence that students understand and can apply their knowledge in authentic contexts. In Stage 3, teachers choose instructional methods appropriate to each of these goal types.



Stage 1 – Desired Results

Established Goals

What Standards, Program and/or Mission related goal(s) will this unit address?

Transfer

Students will be able to independently use their learning to…

What kinds of long-term accomplishments are desired?

What should students be able to do with their learning in the long run?

Meaning

UNDERSTANDINGS

Students will understand that…

What specifically do you want students to come to understand?

What "big ideas" should they grasp?

ESSENTIAL QUESTIONS

Students will keep considering…

What thought-provoking questions will foster inquiry, meaning making, and transfer?

Acquisition

Students will know…

What facts and basic concepts should students know and be able to recall?

Students will be skilled at…

What discrete skills should students be able to use?

Stage 2 – Evidence

Coding	Evaluative Criteria	Assessment Evidence
	What criteria will be used in each assessment to evaluate attainment of the Desired Results?	**PERFORMANCE TASK(S)** What performance assessment tasks will provide evidence of students' understanding and their ability to transfer their learning? **SUPPLEMENTARY EVIDENCE** What other evidence will you collect to determine whether other Stage 1 goals (e.g., knowldge and skill objectives) were achieved? *Optional: Use the column on the left to align your assessments to your Stage 1 goals.*

Stage 3 – Learning Plan

Coding

Pre-assessment

What pre-assessments will you use to check students' prior knowledge, skill levels and potential misconceptions?

Formative Assessment

LEARNING EVENTS

Are all three types of goals (acquisition, meaning, and transfer) adequately addressed in the learning plan?

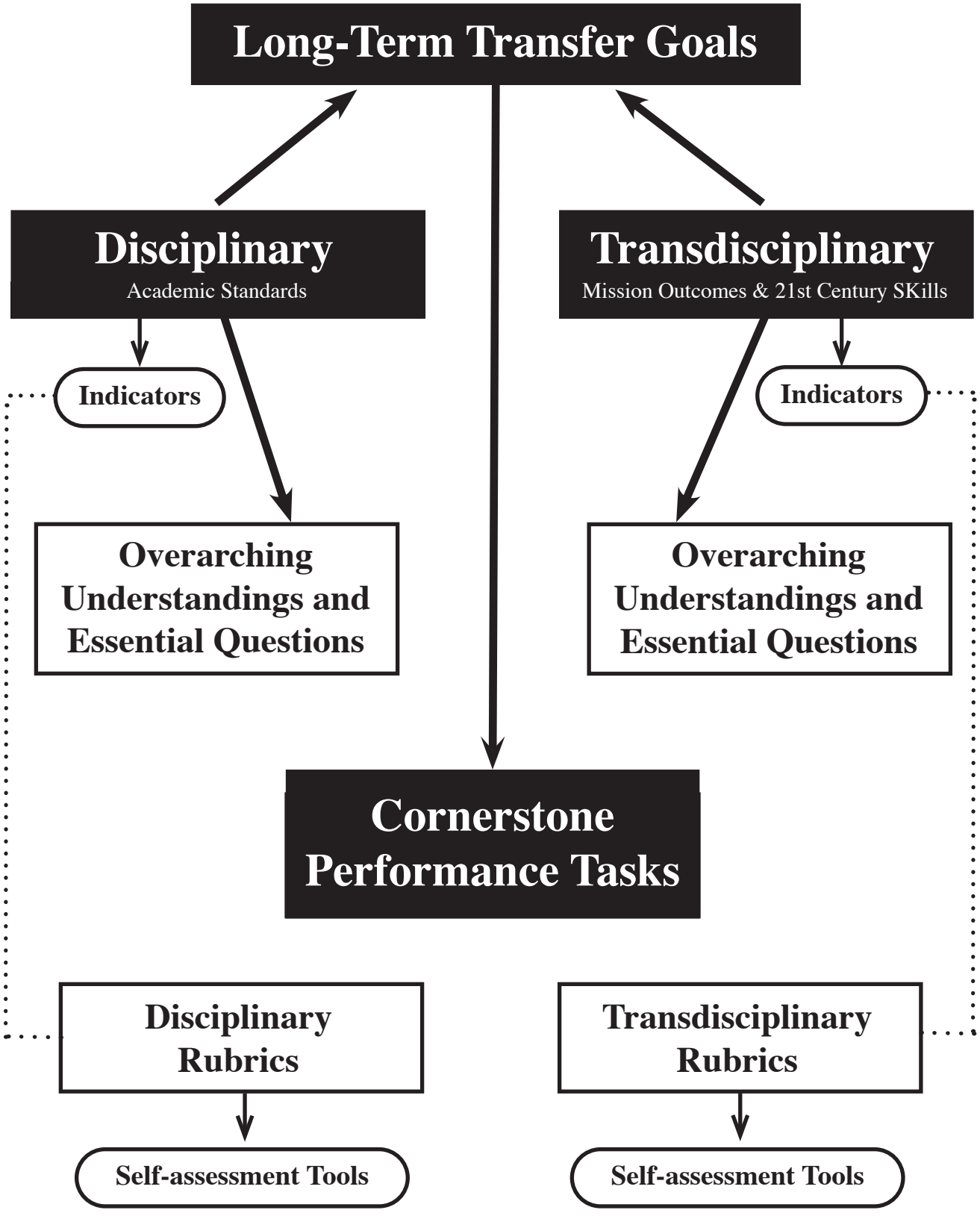
Is there tight alignment across all three stages?

Optional: Use the column on the left to code your learning activities; e.g., their alignment with Stage 1 goals or the A-M-T or W.H.E.R.E.T.O. elements.

How will you monitor students' progress towards achieving the unit's goals the?

How will students get feedback *and* opportunities to use it?

A Blueprint for Macro Curriculum Design



TRANSFER GOALS

Definition

Transfer refers to the ability to apply one's learning to a new situation, beyond the context in which it was learned. Transfer goals specify particular transfer abilities; i.e., what we want students to be able to accomplish when they encounter new information, issues, problems and opportunities. Transfer goals are long-term in nature: think of them as exit outcomes at the end of Pre-K–12 schooling. They embody the meaning of the phrase, *college and career ready*. Transfer:

- involves the application of learning in new situations, not ones previously taught or encountered;
- requires some strategic thinking, not simply "plugging in" facts or skills learned in a rote fashion;
- typically involve habits of mind; e.g., judgment, self-regulation, persistence.

Transfer goals have several distinguishing characteristics:

- They are exit outomes; i.e, they are long-term in nature and develop and deepen over time.
- They include goals within the Disciplines as well as Trans-Disciplinary that cut across subject areas.
- They are performance based; i.e., they require application (not simply recall).
- They call for independent performance; i.e., over time learners must be able to apply their learning autonomously, without scaffolding or coaching.

Examples of two types of Transfer Goals

History

- Use knowledge of patterns of history to better understand the present and prepare for the future.
- Critically appraise historical claims and analyze contemporary issues.
- Participate as an active and civil citizen in a democratic society.

Critical Thinking

- Remain skeptical of claims. Ask probing questions. Evaluate the credibility of sources and soundness of reasoning. Look for evidence of inaccuracy or bias.

TRANSFER GOALS

(discipline examples)

Economics
• Make economically sound and ethical financial decisions.

Health and Physical Education
• Make decisions and take actions that support life-long health and wellness.
• Participate regularly in one or more sports or fitness activities.

Performing & Fine Arts
• Participate in, and advocate for, the arts throughout one's life.
• Respond to the artistic expression of others through interpretation, critical stance, and personal connections.

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 main ideas, interpreting ("between the lines"), critically appraising, and making personal connections.
• Choose to read as a leisure time activity.

Science
• Evaluate scientific claims and analyze current issues involving science/technology.
• Conduct a sound investigation to answer an empirical question.

World Language
• Effectively communicate with varied audiences for varied purposes while displaying sensitivity 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.

Other: _____

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 empirical questions.
- Evaluate scientific claims for validity.
- Think systemically.

Source: North Slope Borough School District, Barrow, Alaska

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

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

Self-Directed Learner

Students will be able to independently use their learning to:

- Take initiative and seek opportunities for growth.
- Design a plan to accomplish goals.
- Utilize time, manage workload, and complete tasks without direct oversight.
- Persist when encountering obstacles by applying a variety of strategies.

Source: Ramsey School District, NJ

CFSD DISCIPLINARY TRANSFER GOALS

Students will be able to independently use their learning to...

ENGLISH LANGUAGE ARTS

- Pursue a deeper understanding of themselves and the world by examining various perspectives and sources.
- Communicate clearly and effectively for a variety of audiences, settings, situations, and purposes.
- Engage others in dialogue about critical, relevant, and/or compelling issues.

HEALTH & WELLNESS

- Make informed decisions that optimize mental, physical, and social wellness in response to changing needs.
- Advocate for the health and wellness of self and others in a variety of contexts.

MATHEMATICS

- Connect multiple concepts and representations to model and solve complex problems.
- Appropriately and flexibly select tools and strategies to make sense of and persevere in solving complex problems.
- Communicate mathematical thinking and solutions appropriately for a variety of needs and purposes.
- Reason mathematically to construct viable arguments, critique the reasoning of others, and make informed decisions.

PHYSICAL EDUCATION

- Select and participate in beneficial and enjoyable physical activities to create and maintain health-enhancing habits.
- Effectively and responsibly participate as part of a fitness community.

SCIENCE

- Make informed judgments and decisions with a balance of curiosity, skepticism, and social perspective.
- Communicate scientific ideas, arguments, and/or results for a variety of purposes and audiences.
- Make sense of problems or phenomena and construct solutions through disciplined trial and error.

SOCIAL STUDIES

- Apply historical understanding and interpret evidence to draw conclusions, make predictions, and plan for the future.
- Analyze perspectives, patterns, and relationships to make informed decisions as global citizens.

VISUAL & PERFORMING ARTS

- Develop and engage in their own passions to find joy, peace, intellectual stimulation, and meaning through the arts.
- Create and participate in aesthetic experiences that evoke emotion and foster connections with self, others, and/or the world around them.

WORLD LANGUAGES

- Establish and maintain positive relationships in diverse cultural contexts.
- Serve as mediators within and across cultures in order to reach shared goals and understanding.
- Communicate effectively in more than one language, honoring culture and context.

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CFSD DEEP LEARNING PROFICIENCIES TRANSFER GOALS

Students will be able to independently use their learning to...

CITIZENSHIP

- Participate as civil and active citizens through ever-shifting roles, contexts, and values.
- Collaborate, communicate, and learn with individuals from other cultures to better understand self, others, and the world around them.

COLLABORATION

- Work effectively with, and learn from, others in a variety of personal and professional contexts.

COMMUNICATION

- Effectively communicate for different purposes and varied audiences, using appropriate media, formats, and tone.

CREATIVITY & INNOVATION

- Develop innovative, viable ideas and solutions that meet the needs of various audiences and challenges.

CRITICAL THINKING & PROBLEM SOLVING

- Critically analyze and evaluate a variety of information and claims in order to determine what to think, believe, or do.
- Make sense of messy, never-before-seen problems, and persevere in solving them.

SYSTEMS THINKING

- Employ the habits of a systems thinker to better understand situations, make effective decisions, and plan for the future.

SELF-REGULATION* & REFLECTION

- Improve performance and persevere through challenges by applying deliberate effort, appropriate strategies, and flexible thinking.

**Self-Regulation and Reflection is embedded in all 6 of the Deep Learning Proficiencies.*

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OVERARCHING
Understandings and Essential Questions

An Understanding specifies the "big ideas" that students should come to comprehend deeply. Understandings are inherently abstract ideas, and thus, usually take time for students to achieve. Understandings "must be earned" by the learner through a process of active "meaning making."

I recommend that understandings be stated as complete sentences that contains two or more related concepts. Here are examples:

- *Correlation* does not ensure *causality*.
- An effective argument begins with a *claim* that is supported by relevant *evidence* and sound *reasoning*.
- A *true friend* will stick with you during *challenging* times.

A practical recommendation is to frame the targeted understanding as a response to the stem: *"The student will understand that..."*

An effective Essential Question is open-ended. Rather than seeking a single "correct" answer, such questions are meant to provoke thought, stimulate discussion and debate, and engage learners in "making meaning" to lead to deeper understanding. Think of Understandings and Essential Quesitons as flip sides of a coin. The Understanding is what we want students to come to as a result of considering the associated Essential Question(s).

Overarching Understandings identify what students should come to understand *over time* about Transfer Goals so that they will be able to effectively transfer their learning to new situations. These Understandings are broader in scope than a specific (topical) understanding targeted in a single unit for a particular topic.

Similarly, **Overarching Essential Questions** are broad in scope and are meant to "spiral" across the curriculum. These questions can be applied to various topics that are explored across the grades. By considering these recurring questions again and again, students develop and deepen their understanding and transfer abilities.

Overarching Understandings and Essential Questions for Reading

Understandings	Essential Questions
READING	
• Effective readers use appropriate strategies to construct meaning from texts. • Readers can use context clues to determine meaning of words/ phrases/ concepts. • Different genres have unique structures and follow predictable organizational patterns. • Identifying a text's genre, purpose, and organizational structure helps readers an-alyze and understand the text. • Determining an author's point of view helps the reader better interpret and explain the text. • As one's knowledge base increases, the quality of thinking, meaning-making and communication can improve. • By comparing texts, readers often gain greater insight into those texts. • Readers make meaning through a careful reading of the text(s) and personal connections to the topic. • Readers support their inferences, interpretations and conclusions by citing appropriate evidence (details) within the text. • Effective listeners/viewers evaluate the content of a message in order to form their response(s).	*• What do good readers do?* *• How does my purpose influence how I should read?* *• How does what I read (e.g. text structure, story elements) influence how I should read it?* *• What's my strategy for reading this text? How do I know if it is working?* *• What is this text really about? (e.g., main idea, theme, moral)?* *• What is the author trying to tell me?* *• What does a "close" reading require?* *• How do you "read between the lines?"* *• How do my experiences influence my reading and understanding of this text?* *• What insights can I gain by comparing two (or more) texts?* *• What's the author's point of view? How does it influence author's message and reader's interpretation?* *• How do I find the information I need?* *• How do I know what to believe in what I find?* *• How will I know that I understand the speaker?* *• What is the author/speaker trying to tell or show me?* *• Does what I am reading, hearing, or viewing make sense to me?*

Overarching Understandings and EQs for Research and Argumentation

Understandings	Essential Questions
RESEARCH	
• There are multiple sources of information and those selected depend on the purpose and audience for research. • 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: - defining problem/task; - generating focus question(s); - searching for information; - selecting and critically evaluating information; - organizing and synthesizing information; - presenting findings and conclusions with proper support; - 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.	• *What am I looking for and how do I find it?* • *Can this source be trusted?* • *How do I know what to believe in what I find?* • *How do I best present my findings?* • *How can I support my findings and conclusions?* • *How do I collect, organize and synthesize information?* • *Why and how should I document my sources?* • *How should I evaluate research f indings and conclusions?*
ARGUMENTATION	
• A convincing argument requires a clear position (claim) and logical reasoning supported by sound evidence. • A convincing effective argument acknowledges opposing claims, reasons and/or evidence and effectively rebuts them.	• *How does argumentation differ from persuasion?* • *What makes an argument convincing?* • *What other claims, reasons and/or evidence should I consider?* • *How can I best counter opposing arguments?*

Overarching Understandings and EQs for Habits of Mind

Understandings	Essential Questions
PERSISTENCE	
People have a better chance of completing a task if they are focused on what they want, what they have to do, the time they have to get it done, and a plan for how they will achieve it. Instead of giving up, people who persist apply strategies to help them stick with it. People need to decide whether persisting is worth pursuing. They understand the benefits and recognize the value of persisting.	• *Why should I keep trying?* • *What should I do when I get stuck?* • *Why is it so important that I work to complete this task?* • *What are the consequences if I do or do not complete the task?* • *Would my time and efforts be better applied elsewhere?* • *Is this worth my persistence?*
MANAGING IMPULSIVITY	
The ability to manage one's impulses can be improved through being deliberate about actions and reflecting on experiences over time. Instead of acting or responding immediately, effective thinkers control their emotions, deliberate and consider the consequences of alternative actions. Effective thinkers understand the benefits and recognize the value of managing their impulsivity.	• *Why and when should I take time to think before I act?* • *What is my strategy for this challenge?* • *What do I do when I am driven by my emotions?* • *How might I recognize my emotional state and manage my response?*

Overarching Essential Questions for 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

Overarching Essential Questions for Historical Analysis and Interpretation

• Why study history? • What can we learn from the past?

• How can we know what <u>really</u> happened in the past? • How can we know for sure if we weren't there?

• How am I connected to those in the past? In what ways is the past about me?

• How do we know what really happened in the past?

• Whose "story" is it?

• Whom do we believe and why?

• Is history the story told by the "winners"?

• Is history inevitably biased?

• How do people create their history?

• Does history make the person or does the person make history?

• Who were the "winners" and who were the "losers" in _____? (for any historical event)

• Was anyone at fault? (for examining any historical or literary event)

• What causes change? What remains the same?

• What can we legitimately infer about the artifacts we find?

• What should we do when the primary sources disagree?

• How does the legacy of earlier groups and individuals influence subsequent generations?

• How do patterns of cause/effect manifest themselves in the chronology of history?

• How has the world changed and how might it change in the future?

Science and Engineering Practices

Asking questions and defining problems

A practice of science is to ask and refine questions that lead to descriptions and explanations of how the natural and designed world(s) works and which can be empirically tested.

Developing and using models

A practice of both science and engineering is to use and construct models as helpful tools for representing ideas and explanations. These tools include diagrams, drawings, physical replicas, mathematical representations, analogies, and computer simulations.

Planning and carrying out investigations

Scientists and engineers plan and carry out investigations in the field or laboratory, working collaboratively as well as individually. Their investigations are systematic and require clarifying what counts as data and identifying variables or parameters.

Analyzing and interpreting data

Scientific investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists use a range of tools—including tabulation, graphical interpretation, visualization, and statistical analysis—to identify the significant features and patterns in the data. Scientists identify sources of error in the investigations and calculate the degree of certainty in the results.

Using mathematics and computational thinking

In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships.

Constructing explanations and designing solutions

The end-products of science are explanations and the end-products of engineering are solutions. The goal of science is the construction of theories that provide explanatory accounts of the world. A theory becomes accepted when it has multiple lines of empirical evidence and greater explanatory power of phenomena than previous theories.

Engaging in argument from evidence

Argumentation is the process by which evidence-based conclusions and solutions are reached. In science and engineering, reasoning and argument based on evidence are essential to identifying the best explanation for a natural phenomenon or the best solution to a design problem.

Obtaining, evaluating, and communicating information

Scientists and engineers must be able to communicate clearly and persuasively the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity.

Source: adapted from the Next Generation Science Standards ©2013 Achieve, Inc

Overarching Essential Questions for the NGSS Cross-Cutting Concepts

Crosscutting Concept #1: Patterns
How can patterns be used to predict results and solve problems?
What is the relationship between patterns and natural phenomena?
What is involved in identifying a pattern?
How can you use identified patterns to justify claims?

Crosscutting Concept #2: Cause/Effect
Why is understanding cause and effect important to your life?
How can cause and effect relationships help predict or explain future events?
How can data mislead you in determining a cause & effect relationship?
How do you distinguish between a cause and a correlation?

Crosscutting Concept #3: Scale, Proportion and Quantity
How do scale, proportion and quantity affect what can be observed?
How do conceptual models allow me to observe and test what I cannot see?
How can mathematical models be used to understand and/or predict scientific events?

Crosscutting Concept #4: Systems and System Models
What is a system?
How are the parts of a system related to the entire system?
How are system models used to predict and understand real world situations or scientific phenomena?

Crosscutting Concept #5: Matter and Energy
What is energy, and what does it mean for it to be conserved?
How are energy and matter related?
How is energy measured?

Crosscutting Concept #6: Structure and Function
What is the connection between structure and function?
How does structure and function apply to a given problem?
What affects structure and function?

Crosscutting Concept #7: Stability and change
How do we measure change?
How can something appear stable when it is actually changing?
How does scale affect our ability to observe change?

Overarching Essential Questions for the NGSS Science And Engineering Practices

Practice #1: Asking Questions and Defining Problems
What are the characteristics of a good, testable question?
What are the characteristics of a problem worth investigating?
Which questions would you ask if you obtained unexpected results?

Practice #2: Developing and Using Models
How does your model relate to the real world?
What are the advantages and limitations of a model?
When and why is it appropriate to change a model?

Practice #3: Planning and Carrying Out Investigations
How does planning for a scientific investigation address data collection that is valid, reliable, ethical and repeatable?
Why is it important to collect data about the performance of a proposed tool, object, process or system under a range of conditions?

Practice #4: Analyzing and Interpreting Data
How are graphical representations of large data sets constructed and used to identify relationships?
How can we analyze data with more precision and accuracy?
Why is error analysis important?

Practice #5: Using Mathematics and Computational Thinking
How can mathematics be used to solve problems?
How can mathematics be used to communicate an idea and/or defend an argument?
When and how can mathematical ideas and data be generalized?

Practice #6: Constructing Explanations and Designing Solutions
How can we identify when something is (or is not) a solution to a problem?
How can data be used to summarize and/or draw conclusions about an experiment?
When is it appropriate to use numerical data/patterns and the results of an experiment to make generalized statements about science?
Why is it important to consider the constraints and/or criteria when designing and evaluating solutions?

Practice #7: Engaging in Argument from Evidence
How do scientists respond to different perspectives?
Why is it important to acknowledge the weaknesses of your argument?
How do you construct an argument using evidence to evaluate a scientific claim?

Practice #8 – Obtaining, Evaluating, and Communicating information
How do we decide what to believe about a scientific claim?
How can we make an informed decision?
What are the benefits of communicating information in multiple ways?
How does science change over time?

Source: Stevenson High School Science Department and Feeder Middle School Science Teachers

Overarching Understandings and EQs for <u>argumentation</u>

Transfer Goal(s)

Students will be able to independently use their learning to . . .

- develop and support sound arguments

- respectfully critique the arguments of others

Understandings	Essential Questions
• A convincing argument requires a clear position (claim) supported by relevant evidence and sound reasons. **• Persuasion may involve emotional appeals rather than logic.** **• A convincing effective argument acknowledges opposing claims, reasons and/or evidence and effectively rebuts them.** **• An effective argumement employs language, examples, and analogies appropriate to the target audience.**	***• What makes an argument convincing?*** ***• How does argumentation differ from persuasion?*** ***• What other claims, reasons and/or evidence should I consider?*** ***• How can I best counter opposing arguments?*** ***• Who is my target audeince and how can I best convince them of my position?***

Cornerstone Performance 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 assessing 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, I recommend the inclusion of more robust and authentic tasks as part of a local curriculum and assessment system. I refer to these as "cornerstone" tasks, although there is nothing sacred about the name.

Cornerstone Tasks are curriculum-embedded performances 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. Moreover, they support effective instructional practices that engage learners in authentic learning, "meaning making" and transfer.

More specifically, Cornerstone tasks:

- are *curriculum embedded* (as opposed to externally imposed);
- are *planned backward from long-term Transfer Goals*, within and across Disciplines
- *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 and/or assessments*;
- *integrate Portrait of a Graduate competencies* with subject area content;
- evaluate performance with established *rubrics*;
- engage students in *meaningful learning*;
- provide collected evidence to enable the *tracking of student growth over time*;
- enable students to compile a *resume of accomplishments (e.g., in a digital*




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?

The Literacy Design Collaborative Task Templates
Science Task Samples

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 and Technical areas. Each Module consists of a task and associated instructional procedures. The Tasks require students to read, analyze, and comprehend written materials and then write cogent explanations or arguments related to topics 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:

Informational or Explanatory Task Template

[Insert question] After reading _____ (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?

After reading **various sources on the issue of water contamination**, write a (**report, article**) that explains the causes and the effects of contamination. What conclusion or implications can you draw? **Cite at least four sources, pointing out key elements from each source**. Include a bibliography of your sources. Support your discussion with evidence from the text. What implications implications can you draw? (Informational or Explanatory/Synthesis)

How can energy be changed from one form into another? After reading **scientific sources on energy transformation**, write a report that examines the **causes of energy transformation and explains the effects when energy is transformed**. What conclusions or implications can you draw? Support yourdiscussion with evidence from the texts. (Informational or Explanatory/Cause-Effect)

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.

After researching **technical and academic articles on the use of pesticides in agriculture**, write a (**speech, blog, podcast, letter to editor**) that argues your position, pro or con, on the use of pesticides in managing crop production. Support your position with evidence from your research. L2 Be sure to examine competing views. (Argumentation/Analysis)

After researching **scientific and technical sources on methods for preventing water shortages, write a proposal in which you identify a problem faced by communities in arid regions and argue for a solution to improve water availability**. Support your position with evidence from your research. Be sure to examine a competing view challenging your solution. Give an example from past or current events to illustrate and clarify your position. (Argumentation/Problem-Solution)

Creating Cornerstone Performance Tasks: Task Frames in Mathematics

Task Starter Frames	Task Ideas
Create a mathematical model/ representation of _____ (e.g., quantity, size, rate, motion, change).	Create a mathematical model to use in evaluating International stock funds using data from the past 5 years. Which funds would you recommend to an investor?
Make and justify predictions or decisions based on pattern analysis.	Predict the winning time of the women's marathon event in the next two Olympic games based on the pattern of the winning times in previous games. Explain your reasoning. Compared the women's marathon times to the men's times since 1984. Given the results, will the women ever run faster? If so, in what year? Explain your answer.
Design a physical structure.	Design a 3-dimensional shipping container to maximize volume and safety for shipping glass marbles. What shape and size container do you propose? Explain your reasoning.
Collect, organize, record, analyze and display data.	Collect data about student "favorites" such as music, movies, video games, actors, school subjects, hobbies, foods, beverages, etc. Organize and analyze the results. Decide on an effective method to present your findings (e.g., a blog, poster, article, podcast).
Evaluate a mathematical or statistical claim.	Claim: 50% of all Americans eat at least one meal at a fast food restaurant every week. How would you go about evaluating this claim?
Correct flawed mathematical reasoning.	Ricardo said, "Four plus three times two is 14." Angela replied, "No, it's 10." Did someone make a mistake? Explain the reasons that they came up with the different solutions. Then, tell which one is correct and explain why.
Other:	

Creating Performance Tasks: Task Frames in Social Studies

Task Starter Frames	Task Ideas
Gather information from primary and secondary sources to evaluate historical claims or interpretations.	Research various historical claims/interpretations regarding the rationale for the United States entering into the Vietnam war or the 2nd Iraq war. Use at least two primary source materials and include at least two interviews with veterans or citizens. Prepare to communicate your findings and your evaluation of the various claims/interpretations.
Critically analyze current events/ issues.	Analyze current debates over national immigration policy. Compare the different points of view on the issue. Analyze various factors including "push-pull" and cause-effect. Propose a policy that you favor and provide reasons and evidence for your position.
Make predictions for _____ (current or future events or issues) based on understanding of historical patterns.	Compare the Arab Spring with previous cases of popular uprising, revolution, insurrection and civil conflict. Make a prediction: Will governments in middle eastern countries become more or less democratic in the Middle east within the next five years?
Act as a responsible citizen by _____ (e.g., staying informed, studying issues, participating in community events, expressing opinions respectfully, voting).	Develop a position [for or against] a proposal affecting students (e.g., mandatory school uniforms, allowing cell phones to be kept on during class). Select information from articles and interviews with teachers, parents and students to prepare your argument. Be sure to consider and address predictable objections to your position. Prepare to present your argument and support to the PTO Council or School Board via a 90 second oral presentation.
• Whose story is this? Identify and explain differing points of view about _____.	Identify and explain differing points of view about the display of the Confederate flag on government buildings and in public places.

Creating Performance Tasks: Task Frames in Science

Task Starter Frames	Task Ideas
Design and conduct an investigation/experiment to: **• answer (a question)** **• explain (a phenomena)**	Design and conduct an investigation to determine which of three different brands of paper towels are most absorbent. Create a data table to record your observations and document your procedure so that others can follow it to replicate your investigation.
Effectively use scientific tools to **o Observe _____** **o Collect data on _____** **o Measure _____** **o Record data about _____** **o Classify _____** **o Draw conclusions about**	Use pH strips to test water samples from three different sources (e.g., water fountain, local stream or pond, collected rainwater, bottled carbonated water). Conduct at least two tests for each sample. Record and analyze your data. Draw a conclusion from the results and be prepared to explain it.
Evaluate a claim involving science.	Evaluate the claim: Following a strict high protein diet is a safe way to lose weight. Do you believe this claim? What does the evidence suggest?
Analyze current issues involving science or technology.	Explore the issue: Is hydraulic fracturing (fracking) an environmentally safe way to extract oil and natural gas from bedrock? Research the question using valid information sources. Consider the points of view of consumers, people residing near fracking sites, energy industry members, local businesses and environmentalists. Then, develop a position with reasons to convince voters to vote for your position. Be prepared to respond to predictable objections. (Can be presented in written form, orally, in a debate format.)
Critique experimental design or conclusions.	Carefully review students' science fair projects involving experimental design. Was the investigation sound? For example, were: • procedures consistently applied? variables isolated? sufficient samples taken? data accurately recorded? logical conclusions drawn from data?

Creating Cornerstone Performance Tasks: Task Frames in English/Language Arts

	Task Ideas
Read and respond to text in various genres (literature, non-fiction, technical) through: o Global understanding (the "gist") o Interpretation (between the lines) o Critical Stance o Personal Connections	
Create **oral** or **written** pieces in various genre for various audiences in order to: o Explain (narrative) o Entertain (creative) o Persuade (persuasive) o Help perform a task (technical) o Challenge or change things (satirical)	
Listen to various sources (e.g., lecture, radio commercial) for various purposes, including for: o Learning o Enjoyment o Performing a task o Reaching a decision	
Create **multi-media** pieces in various genre for various audiences in order to: o Explain (narrative) o Entertain (creative) o Persuade (persuasive) o Help perform a task (technical) o Challenge or change things (satirical)	
Other: _____	

Assessing Comprehension using Reading Stances

STANCES	Fiction	Non-Fiction
Literal	- What is this [novel, film, poem,] about? - What is the main topic or "gist"? - Where is the setting? … the time period? - When did this piece take place? - Who are the major and minor characters? - What is the situation or problem? - What are the most important events?	- What is the topic or the "gist" of the text this [book, article, essay, blog, etc.]? - What are the keys facts? - What is the most important information conveyed? - What did you learn from this?
Interpretive	- What is the meaning of _____? - What is the implicit theme or message? - What is the significance of the title? - How would you describe the mood? - What traits do the character(s) exhibit? - What does [figurative language] mean?	- What is the meaning of _____? - What conclusions do you draw from this? - What is the [attitude, philosophy, politics, etc.] of the author(s)? - How does this piece compare to [one or more related works]?
Personal	- How is this like something from your life? - How do you relate to this theme? - What did this make you think or feel? - What would you have done if you were the character? - What questions would you like to ask the author/character(s)?	- What did this make you think? - Do you agree with the author? - Are you convinced? …persuaded? - Did you change your mind? - What additional information is needed? - What questions would you like to ask the author(s)?
Critical	- What are the greatest strengths of this piece? ...greatest weakness(es)? Imagine you are a literary critic. - How effectively did the author convey the theme? …describe the setting? …develop the characters? …establish the mood? …unfold the plot and …build to a climax? ... use imagery and figurative language? - Would you recommend this to others?	- How clear was this piece? …accurate? …complete? …unbiased? - How well does the organizational structure work? - What are the greatest strengths of this piece? ... the greatest weakness(es)? - How effectively did the author achieve his or her purpose; e.g., to inform?... to persuade?

Creating Performance Tasks:
Task Starter Frames in Health/Physical Education

Task Starter Frames	Task Ideas
Engage in healthful activities and behaviors. Make healthful choices and decisions regarding diet, exercise, stress management, alcohol & drug use, etc.	Write a story about a character who learns of the importance of following a healthy lifestyle and changes his/her behavior to do so.
Be an advocate: Encourage others to engage in healthful activities and behaviors to promote wellness throughout one's life..	Develop a comic book for younger students to illustrate: 1) to illustrate the importance of good nutrition; 2) examples of balanced meals that can tasks good; and 4) potential health problems that can result poor nutrition.
Develop and implement a plan to improve _____. Track data and set new performance goals.	Develop a personal fitness plan to improve your: • strength • endurance • flexibility • skills in a selected sport
Other:	
Other:	

Creating Performance Tasks: Task Frames for COMMUNICATION

Task Frames	Task Ideas
Purpose *What is the purpose of this communication?* o **inform** o **entertain** o **persuade** o **evoke emotion** o **critique** o **commemorate** o **challenge** o **other:** _____	
Audience(s) *For whom is this communication intended?* _____ _____	
Form/Media *Through what form or media will this communication be conveyed?* **written** **oral** **visual/graphic** **multi-media** **kinesthetic/movement (non verbal)** **other:** _____	

Creating Performance Tasks: Task Frames for CREATIVE THINKING

Task Starter Frames	Task Ideas
Product *Create a product that is original and useful by meeting a need or solving a problem.* _____ _____ _____	Your design team has the goal of improving the utility, comfort and style of backpacks currently on the market. After collecting research, create a minimum of five sketches of your first suggestions related to design improvements. Next, you should prioritize your designs by selecting one for the creation of advanced sketches and in three separate views to include dimensions, volume, zipper locations, logo design and placement, as well as colors and material selections.
Process *Invent or improve a process that is unique and more effective and/or efficient than previous processes.* _____ _____ _____	Develop a process to improve your school's reporting system. Consider *what* should be reported (e.g., achievement, work habits, participation, attendance, behavior), *how* it should be reported (e.g., letter grades, percentagers, rubric scores, narrative report) and the medium (e.g., a quarterly report card, online, via parent conferences). Your goal is a process that is fair, consistent across teachers and understandable to students and parents.
Performance *Develop a performance that is innovative and accomplishes its purpose for an intended audience.* _____ _____ _____	Your task is to work with your team to create, rehearse and deliver an original non-verbal performance (e.g., mime, dance, tableau) to express the theme of a selected story. Your goal is to entertain your viewers (e.g., parents, younger students) while conveying the story line and the emotional responses of the main characters.

Creating Performance Tasks: Task Frames for CRITICAL THINKING

Task Starter Frames	Task Ideas
Critical Thinking Skills o **analyze an issue or position** o **evaluate the effectiveness of an argument** o **evaluate quality of sources** o **evaluate quality of evidence** o **identify varied perspectives** o **distinguish fact from opinion** o **distinguish relevant/ irrelevant** o **challenge assumptions** o **identify a conflict of interest** o **other: _____**	
Problem Solving Skills o **determine the nature of the need or problem** o **identify obstacles/barriers** o **distinguish symptoms from root causes** o **represent the problem** o **generate possible solutions** o **evaluate solution options** o **develop an implementation plan** o **monitor results and adjust actions as needed** o **other: _____**	

Constructing a Performance Task Scenario using 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 _____

Success Criteria:

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

Constructing a Performance Task Scenario

G.R.A.S.P.S. example

Goal:

- **Your goal is to** help a group of 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 visitors from other countries (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.]*

Success Criteria:

- **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 Performance Task Scenario

G.R.A.S.P.S. 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.

Success Criteria:

- **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.

Possible STUDENT ROLES and AUDIENCES

KEY: ROLES = R and AUDIENCES = A

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

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.)*

Written

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
questionnaire
research report
screen play
script
story
test
Tweet

Oral

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
Ted Talk

other: _____

other: _____

Visual

advertisement
banner
book/CD cover
cartoon
collage
computer graphic
data display
design
diagram
display
drawing
exhibit
Face Book page
flowchart
flyer
game
graph
infographic
map
model
movie
Power Point
photograph(s)
painting
poster
scrapbook
sculpture
storyboard
web site

10 Variables for Tasks and Projects

The following variables could be considered when designing performance tasks and projects. Determinations for each variable should be based on the learning outcomes, experience and needs of students, available resources (time, supplies, equipment, funds) and classroom feasibility.

1. Time Frame – How long will students be involved in this task/project, including time for presentations and evaluations.

☐ 1 – 4 class periods ☐ 5 – 10 periods ☐ more than 2 weeks

2. Cognitive Demand/Rigor – Where does the task/project fall on the Depth of Knowledge scale?

☐ DOK 2 ☐ DOK 3 ☐ DOK 4

3. Degree of Authenticity – To what extent is the task/project authentic; i.e., featuring a real challenge, problem, issue; genuine product/performance; authentic audience; and real-world constraints?

☐ decontextualized ☐ simulates an authentic context ☐ fully authentic

4. Integration of Subjects – To what extent is the task/project interdisciplinary?

☐ single discipline ☐ two disciplines ☐ multidisciplinary

5. Student Choice – To what extent will students have choices regarding any of the following?

☐ task topic ☐ task activities ☐ process for completing task
☐ options for products and performances ☐ target audience(s)

6. 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?

☐ all resources provided ☐ some provided ☐students locate all needed resources

7. Performance Mode – How will students work?

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

8. 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: _____

9. 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

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

☐ teacher ☐ other staff ☐ expert judges ☐ external scorers
☐ student (self evaluation) ☐ peers ☐ other: _____

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 criticsm	Irony

A K-12 Writing Map

	Informative/ Explanatory	Narrative	Opinion/Persuasion/ Argumentative
k	Science Observation Picture Book	All About Me Picture Book	xxx
1	My Favorite Animal Book	Imaginary Character Story	xxx
2	How-to Book (illustrated)	Modern-day Fairy Tale	xxx
3	Friendly Letter	Personal Narrative	Opinion Letter
4	Feature Article	Poetry Collection	Issue Analysis
5	Inquiry Project	Descriptive Narrative	Argumentation Essay
6	How-to Guide	Autobiography	Editorial
7	Cause–Effect Essay	Myth, Fable, Fairy Tale, Folktale or Legend	Position Paper
8	Inquiry Project	Narrative/Historical Fiction	Social Issue Essay
9	Problem–Solution Essay	Poetry, Song/Lyrics	Editorial
10	News Article	Memoir	Policy Evaluation
11	Technical Manual	Dramatic Script/ One-act Play	Argumentation Essay
12	Independent Research with Written Product and a Presentation	Parody, Satire, Irony on student-chosen topic/ issue	Position Paper on Issue chosen by student

Notes:
1) A number of these writing tasks can be naturally linked with other subject areas.
2) Many of these writing tasks allow for student "voice and choice." Some examples:
Gr. 1 – Imaginary Character = choice of character, setting, story line
Gr. 2 – How-to Book = choice of topic or skill to teach
Gr. 3 – Friendly Letter and Persuasive Letter = choice of topic and audience
Gr. 4 – Feature Article = choice of topic, audience and publication (e.g., newspaper, on-line magazine)
Gr. 5 – Research Paper = choice of specific topic (within a general science study)
Gr. 6 – Editorial = choice of specific topic (within a general study social studies area)
Gr. 7 – Myth, Fable, Fairy Tale, Folktale, Legend = choice among genres as well as characters and "moral"
Gr. 8 – Research Paper = choice of specific topic (within a general social studies study)
Gr. 9 – Problem–Solution Essay = choice of specific topic based on a current event/issue
Gr. 10 – Argumentation Essay = choice of specific topic based on a current event/issue

Cornerstone Task Map for Social Studies – Elementary
Catalina Foothills School District

Social Studies

Transfer Goals

Students will be able to independently use their learning to. . .

- Apply historical understanding and interpret evidence to draw conclusions, make predictions, and plan for the future.
- Analyze perspectives, patterns, and relationships to make informed decisions as global citizens.
- Critically analyze and evaluate a variety of information and claims in order to determine what to think, believe, or do.

Grade Level	Semester	Assessment Title	Assessment Description
1	FALL	Citizenship Award	Students determine whether a literary character should receive a citizenship award based on evidence of her conduct.
	SPRING	Citizenship Award	Students decide whether an individual should receive a citizenship award based on evidence of his conduct.
2	FALL	Citizens Who Make a Difference – Jackie Robinson	Students examine details about Jackie Robinson's life and accomplishments to help their class identify and celebrate citizenship traits that helped him make a difference.
	SPRING	Citizens Who Make a Difference – Eleanor Roosevelt	Students examine details about Eleanor Roosevelt's life and accomplishments to help their class identify and celebrate citizenship traits that helped her make a difference.
3	FALL	The Extra Mile	Students examine details about two historical figures and justify which one should be honored on a new silver dollar coin.
	SPRING	Tour of the Past	Students analyze the features of a town to determine which civilization (Ancient Greece or Rome) has had a greater cultural influence on the area.
4	FALL	Stories in the Sand	As archaeologists, students analyze artifacts to draw conclusions about the culture and lifestyle of a newly discovered ancient Arizona tribe.
	SPRING	Proving the Past	Students investigate a family's heritage, analyzing heirlooms to determine which region of the 13 colonies the family likely originated from.
5	FALL	Mystery Delegate	As reporters in 1787, students analyze evidence to determine how a mystery delegate is likely to vote at the Constitutional Convention.
	SPRING	Friend or Foe	As commanders of a northern Civil War field hospital, students must analyze evidence to determine whether an injured soldier is an ally or confederate spy.

Cornerstone Task Map for Social Studies – Grades 6-9
Catalina Foothills School District

Social Studies (continued)			
Transfer Goals Students will be able to independently use their learning to. . . • Apply historical understanding and interpret evidence to draw conclusions, make predictions, and plan for the future. • Analyze perspectives, patterns, and relationships to make informed decisions as global citizens. • Critically analyze and evaluate a variety of information and claims in order to determine what to think, believe, or do.			
Grade Level	**Semester**	**Assessment Title**	**Assessment Description**
6	**FALL**	**Mesopotamia Museum Exhibit**	Students select primary and secondary sources to include in a Mesopotamia museum exhibit on the Sumerians and must justify how their choices best represent key understandings about Sumer.
	SPRING	**Ancient Rome Children's Textbook**	Students select graphics to include in the Roman Republic section of a children's textbook and must justify how their choices best represent key understandings about the Roman Republic.
7	**FALL**	**Reconstruction Political Cartoon**	Students design a political cartoon that depicts relative successes and failures of Reconstruction following the Civil War from a contemporary perspective.
	SPRING	**World War I Memorial**	Students design a memorial to commemorate American perspectives and experiences in WWI. They must justify their choices as they pitch their design.
8	**FALL**	**Ending the Pacific War**	Working in the Truman administration, students weigh the evidence to make a recommendation as to how the United States should end the war in the Pacific.
	SPRING	**Did Lee Harvey Oswald Kill JFK?**	Students investigate evidence from the JFK assassination and determine the degree to which Lee Harvey Oswald is responsible for the JFK assassination.
9	**FALL**	**Modern Latin American Issue**	As journalists, students analyze critical modern issues in a Latin American country and make a pitch for the inclusion of this country in an upcoming Frontline exposé.
	SPRING	**Middle East Dossier**	Working for the Secretary of State, students prepare a dossier on a middle eastern country, analyzing relevant details about current demographics, geography, culture, and problems in the country.

Cornerstone Task Map for Social Studies – Grades 10-12
Catalina Foothills School District

Social Studies (continued)			
Transfer Goals Students will be able to independently use their learning to. . . • Apply historical understanding and interpret evidence to draw conclusions, make predictions, and plan for the future. • Analyze perspectives, patterns, and relationships to make informed decisions as global citizens. • Critically analyze and evaluate a variety of information and claims in order to determine what to think, believe, or do.			
Grade Level	**Semester**	**Assessment Title**	**Assessment Description**
10	**FALL**	**Virtual Travel**	As travel writers, students create a journal article or blog based on a virtual visit to a European city. Their article or blog highlights the relationship between history and modern culture.
	SPRING	**Virtual Travel**	As travel writers, students again create a journal article or blog based on a virtual visit to a European city. (Cities and content vary from the fall task based on what is studied in the spring semester.)
11	**FALL**	**Create a Textbook DBQ**	As textbook writers, students assemble a collection of documents pertaining to causes of the Civil War and justify how their selection will help readers examine key issues about the war.
	SPRING	**American Legacy Exhibit**	Students select an influential American figure and design and curate a museum display that highlights the impact of the individual on American history.
12	**FALL AND SPRING**	**Economics: Evaluating the U.S. Economy**	As economic analysts, students examine indicators of economic health and create a report card to evaluate the degree to which the U.S. economy is achieving macroeconomic goals.
	FALL AND SPRING	**Government: Policy Briefing**	Students prepare a brief on a current policy issue, outlining the historical circumstances that created the issue and advocating for reform to the policy.

Engineering Task Map – Prosper ISD

Engineering Transfer Goals:

☐ Communicate effectively based on purpose, task, and audience using appropriate vocabulary

☐ Demonstrate professionalism through functioning like a professional in the engineering field: exhibiting attentiveness, adhering to safety standards, collaborating with others, and growing from feedback

☐ Observe and explore a given system or concept to deepen the understanding of how the system/concept links to real world application.

☐ Design and build models that apply theories.

☐ Construct viable solutions to real world problems through critical analysis of text, media, interviews, and/or observations.

☐ Analyze data to establish generalizations, make predictions, or draw conclusions

Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
6th grade- Engineering Design and Problem Solving 6	**Keystone task:** Students will design a chair for a specific room in the school. Students will have scale prototypes, 3D models, and hand sketches of their chair included in their presentation to the Admin and Construction teams.	**Keystone task:** Students will design a unique hot air balloon model to be unveiled at the McKinney hot air balloon festival. Students will have a final working prototype of their hot air balloon.	**Keystone task:** Students will apply 3D CAD skills, design principles, and design elements into an innovation on or inventions of a solution to a problem they face in their day to day life at school.	**Keystone task:** Students will create a one story (1100-1600 sq. ft.) home floor plan and elevation for a subdivision in Prosper that has an environmentally low impact, is to scale (1 foot = ¼ in), meets HOA regulations on materials used and is designed for a family of 4.	**Keystone task:** Students will create a 3D rendered and ¼ scale model of the house they designed in the previous unit. They will then determine a price for the home and present their final products to local realtors and home builders.	**Keystone task:** Students will design a robot that can help them be more efficient in their morning or evening routines.
7th grade- Engineering Design and Problem Solving 7	**Keystone task:** Students will design and create a marketing campaign for one of the new restaurants in prosper ISD.	**Keystone task:** Students will create a full board game, the pieces, the lore and the accompanying universe in which the board game belongs for kids that have to stay long term in the hospital.	**Keystone task:** Students will design and build personal protective equipment and protocols that other students can use and follow every day to help stop the spread of a virus.	**Keystone task:** Students will present and create a medical device that is an innovation of or invention for a cardiac, neurology, or orthopedic patient that improves their day to day life.	**Keystone task:** Students will help nonprofits design innovative spaces to grow fresh foods for people in need and increase awareness of the importance of fresh fruits and vegetables.	**Keystone task:** Students will research a problem under the Engineering umbrella and design a solution and create a prototype for the solution. They will present these solutions to the communities and industry experts.

Engineering Task Map – Prosper ISD
(continued)

8th grade- Gateway to Engineering	**Keystone task:** Students will design a 3D puzzle out of wooden blocks. They will create the CAD files for the 3D puzzle for 3D printing. The puzzle will be produced and donated to charity.	**Keystone task:** Students create a toy that helps other kids with Cerebral Palsy develop better motor skills.	**Keystone task:** Students work with in district kindergarten students to design a 1:1 cardboard chair that is custom designed for the specific kindergarten student but the chair cannot use any adhesives to hold it together.	**Keystone task:** Students will design all the Lego pieces to a unique Lego set that illustrate the life of a famous engineer to be displayed in the school for other students to learn about famous engineers.	**Keystone task:** Students will create the plans for a remodel of the master suite in their home based on their family's needs.	**Keystone task:** Students will design or redesign all exterior elements of a commercial build located in Prosper.	**Keystone task:** Each student will design and create a ¼ scale model of one floor of an office build that could be built in the Dallas area. The exterior, load bearing beams, elevator shaft, and stairwell all must be linked in each floor when they are stacked to create the tower.
9th grade- Principles of Applied Engineering	**Keystone task:** Students will pitch a new Lego mini-figurine line to Lego that are famous engineers.	**Keystone task:** Students will design and 3D print an attachment for a drone that can deliver Smoothie King drinks autonomously to the residents of Prosper.	**Keystone task:** Students will create a wiring diagram for a home builder in Prosper that will be used to allow customers to customize their home.	**Keystone task:** Students will design and program an robot that can autonomously navigate the high school to help new students too hard to find classes	**Keystone task:** Students will design the high speed train that will take people from Dallas to Houston via the future Texas Central railway.	**Keystone task:** Students will reverse engineering a common house hold item they use every day. They will redesign a part of the item to make the item work more efficiently or work better.	**Keystone task:** Students will select a book and create an automata that represents a scene from the book. Students will then present them for the librarians and library coordinators.
10th grade- Engineering Design and Presentation 1	**Keystone task:** Students will create a scale electric drag racer that, using gears, can compete with the gasoline drag racers.	**Keystone task:** Students will design, 1:1 scale, a Ninja Warrior obstacle for the Ninja Warrior contest. They will submit their designs to the contest to have the obstacle produced.	**Keystone task:** Students will engage in medieval warfare on one of two teams and each create ¼ scale trebuchets that work to attack	**Keystone task:** Students will design and 3D print for the culinary program irregular custom measuring cups that will measure exactly ¼ cup and ½ cup of dry goods. Students	**Keystone task:** Students will design and create 1:1 scale Hot Wheels cars. They will test and race them while tweaking the design until they have a fast car. Students will then donate them to Prosper elementary		

Engineering Task Map – Prosper ISD
(continued)

			the opponent's castle.		schools to use in classes.
11th grade- Engineering Design and Presentation 2	**Keystone task:** Students will identify different safety equipment in the shop and redesign the equipment to make it safer without losing functionality	**Keystone task:** Student will do market research with their peers and then design a prototype a smart phone case that will be marketable.	**Keystone task:** Students will work from technical drawings to create renderings of a commercial product. They will prototype the product and then create the technical drawings for mass production.	**Keystone task:** Students will create manufacturing ready technical drawings for a toy that elementary schools can print and use in their class.	**Keystone task:** Students will design and prototype a working prosthetic hand that can be donated to patients in need.

12th grade- Practicum in STEM

Keystone Task: Students will seek out a mentor in the engineering field. They will work with the mentor to find a problem or project in which the student can take the lead. They will work as the lead engineer the whole year and at the end of the year present the solution or result to a panelof engineers.

Sample K-12 Cornerstone Task Map

	ELA	Mathematics	Science	Social Studies
12	**Independent Study Project** ELA and Science and/or Social Studies [Critical Thinking, Communication]	**Mathematical Modeling Project** (e.g., lifetime savings & investments) [Critical Thinking, Communication]	**Independent Study Project** ELA and Science and/or Social Studies [Critical Thinking, Communication]	**Independent Study Project** ELA and Science and/or Social Studies [Critical Thinking, Communication]
11	**Parody/Satire Skit** ELA and Science and/or Social Studies [Creativity, Collaboration Communication]	**Amusement Park Physics** Linked to Science [Critical Thinking, Collaboration Communication]	**Chemistry Crime Scene** [Critical Thinking, Collaboration Communication]	**Problem–Solution Campaign** [Critical Thinking, Collaboration Communication]
10	**Original Short Story, Song or Poem** [Creativity, Communication]	**How to Lie with Statistics Project** [Critical Thinking, Collaboration Communication]	**Genetics Project** Science and Social Studies [Critical Thinking, Communication]	**Constitutional Checks & Balances** [Critical Thinking, Communication]
9	**Research Project with A-V Presentation** [Critical Thinking Communication]	**Mathematical Modeling with Linear Equations** [Critical Thinking, Communication]	**Earthquake Science** [Critical Thinking, Collaboration, Communication]	**Contemporary Issues Debate** [Critical Thinking, [Communication]
8	**Causes of Conflict Research Project** ELA and Social Studies [Critical Thinking Communication]	**Design Your Dream Bedroom** [Critical Thinking, Communication]	**Consumer Scientist** [Critical Thinking, Collaboration, Communication]	**Causes of Conflict Research Project** ELA and Social Studies [Critical Thinking Communication]
7	**Autobiography** [Communication]	**Evaluate a Contractor's Proposal** [Critical Thinking, Communication]	**Water Quality Testing** [Critical Thinking, [Communication]	**History: Whose Story? Examining Perspectives** [Critical Thinking]
6	**Personal Narrative** [Communication]	**Exercise Studies** Science and Health/PE [Critical Thinking, Creativity, Collaboration]	**Prove It!** [Critical Thinking, [Communication]	**Humans and the Environment** [Critical Thinking, Communication]
5	**People on the Move Research Project** ELA and Social Studies [Critical Thinking, [Communication]	**Fund Raiser Project** [Critical Thinking, Creativity, Collaboration, Communication]	**Conduct Your Own Experiment** [Problem Solving, Communication]	**People on the Move Research Project** ELA and Social Studies [Critical Thinking, [Communication]
4	**Authors' Party Presentations** [Collaboration, Communication]	**Geometry Town** [Critical Thinking, Creativity, Collaboration]	**Seed to Plant Project** [Critical Thinking, Collaboration Communication]	**Where We Live and How We Live** [Critical Thinking, [Communication]
3	**Personal Narrative** [Creativity, Communication]	**Measure This!** [Critical Thinking Creativity, Collaboration]	**Prove It!** [Critical Thinking, Communication]	**Alike and Different: Community & Culture** [Critical Thinking, Collaboration]
	Show and Tell	**Animal Zoo (Habitats)**	**Animal Zoo (Habitats)**	**Wants and Needs**

Mapping Cornerstone Tasks

21st Century Skills: a. Critical/Creative Thinking b. Problem Solving c. Technology Use d. Communication e. Collaboration

K				
1				
2				
3				
4				
5				
6				
7				
8				
High School Courses				

Key Standards/ Program Goals:

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

7. _____

_____

8. _____

_____

Analytic Rubric for Problem Solving

	Reasoning	Computation	Representation	Communications
4	An efficient and effective strategy is used and progress towards a solution is evaluated. Adjustments in strategy, if needed, are made, and/or alternative strategies are considered. There is sound mathematical reasoning throughout.	All computations are performed accurately and completely. There is evidence that computations are checked. A correct answer is obtained.	Abstract or symbolic mathematical representations are constructed and refined to analyze relationships, clarify or interpret the problem elements, and guide solutions.	Communication is clear, complete and appropriate to the audience and purpose. Precise mathematical terminology and symbolic notation are used to communicate ideas and mathematical reasoning.
3	An effective strategy is used and mathematical reasoning is sound.	Computations are generally accurate. Minor errors do not detract from the overall approach. A correct answer is obtained once minor errors are corrected.	Appropriate and accurate mathematical representations are used to interpret and solve problems.	Communication is generally clear. A sense of audience and purpose is evident. Some mathematical terminology is used to communicate ideas and mathematical reasoning.
2	A partially correct strategy is used, or a correct strategy for only solving part of the task is applied. There is some attempt at mathematical reasoning, but flaws in reasoning are evident.	Some errors in computation prevent a correct answer from being obtained.	An attempt is made to construct mathematical representations, but some are incomplete or inappropriate.	Communication is uneven. There is only a vague sense of audience or purpose. Everyday language is used *or* mathematical terminology is not always used correctly.
1	No strategy is used, or a flawed strategy is tried that will not lead to a correct solution. There is little or no evidence of sound mathematical reasoning.	Multiple errors in computation are evident. A correct solution is not obtained.	No attempt is made to construct mathematical representations *or* the representations are seriously flawed.	Communication is unclear and incomplete. There is no awareness of audience or purpose. The language is imprecise and does not make use mathematical terminology.

Source: Jay McTighe, adapted from Exexmplars.com

Common Analytic Speaking Rubric for World Languages

	Comprehensibility	Fluency	Pronunciation	Vocabulary	Language Control
4	Responses readily comprehensible, requiring no interpretation on the part of the listener.	Speech continuous with few pauses or stumbling.	Accurate pronunciation enhances communication.	Rich use of vocabulary enhances communication.	Accurate control of basic language structures.
3	Responses comprehensible, requiring minimal interpretation on the part of the listener.	Some hesitation but manages to continue and complete thoughts.	Infrequent mispronunciations do not interfere with communication.	Adequate and accurate use of vocabulary for this level enhances communication.	Generally accurate control of basic language structures.
2	Responses mostly comprehensible, requiring interpretation on the part of the listener.	Speech choppy and/or slow with frequent pauses; few or no incomplete thoughts.	Mispronunciations sometimes interfere with communication.	Inadequate and/or inaccurate use of vocabulary sometimes interferes w/ communication.	Emerging use of basic language structures.
1	Responses barely comprehensible.	Speech halting and uneven with long pauses or incomplete thoughts.	Frequent mispronunciations greatly interfere with communication.	Inadequate and/or inaccurate use of vocabulary greatly interferes with communication.	Inadequate and/or inaccurate use of basic language structures.

Source: Fairfax County, VA Public Schools

Rubric for Research Skills

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.

Performance List for Narrative Writing

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?

Rubric for Collaboration and Teamwork

	Contributes to Group Goals	Adheres to Agreements and Norms	Demonstrates Productive Interpersonal Skills
4	Actively helps identify group goals and works hard to meet them. Takes initiative to address group's needs and shifts roles when necessary to support the group.	Always adheres to group agreements and norms. Takes the lead in modeling and reinforcing group norms. Reminds others of the importance of following agreements and norms.	Actively and consistently demonstrates productive interpersonal skills. Models effective and supportive interactions for others. Provides respectful feedback to help others improve their interactions within the group.
3	Displays a commitment to group goals and works to meet them. Carries out assigned role indepedently.	Consistently acts in ways that follow established agreements and norms, but may have occasional lapses.	Generally demonstrates productive interpersonal skills. Interacts with others without prompting. Expresses ideas and opinions in a way that is sensitive to the knowledge base and feelings of others.
2	Puts forth some effort, but sometimes lets others shoulder the work. Needs reminders to stay on task or perform assigned role.	Inconsistently follows established agreements and norms. Needs behavioral reminders to follow the norms.	Use of productive interpersonal skills is inconsistent. Sometimes interactions with others are less than positive. May need reminders; e.g., to listen actively, wait one's turn, avoid put downs, be flexible.
1	Does not actively work toward group goals. OR Is passive and does not contribute to the group. OR Acts in ways that undermine the ability of the group to achieve its goal.	Regularly violates the established agreements and norms. Behaves in ways that disrupt the effective functioning of the group.	Poor interpersonal skills interfere with effective group performance; e.g., does not listen, dominates, interrupts, insensitive, inflexible, puts down others.

Performance List for Collaboration

	Terrific	O.K.	Needs Work
1. Did I do my job in my group?			
2. Did I follow directions?			
3. Did I finish my part on time?			
4. Did I help others in my group?			
5. Did I listen to others in my group?			
6. Did I get along with others in my group?			
7. Did I help my group clean up?			

Identifying Observable Indicators of Student Learning & Performance Outcomes

Directions: What specifically would we see and hear in a learner who has achieved a targeted outcome? Use the following T-Chart to identify observable indicators of the outcome in the left column, and non-examples in the right column.

Indicators of _____	*Non Examples of* _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____

Identifying Observable Indicators of Student Learning & Performance Outcomes

a first draft example

Indicators of a CRITICAL THINKER	*Non Examples of a CRITICAL THINKING*
• Asks critical questions • Remains "skeptical" • Questions the accuracy, validity, and reliability of information • Deliberately seeks different points of view and considers their merits • Able to identify personal and cultural biases • Self assesses/monitors progress and adjusts as needed • Reflects on experiences • Deliberative • Views problems on a "macro" and "micro" level • Recognizes "shades of grey" • Can provide a rationale/support for their position/answer • Uses evidence to prove/disprove • Thrives with questions • Comfortable w/ ambiguity • Can transfer learning to new situations	• Does not question • Gullible • Accepts things at face value • Does not seek other perspectives • Narrow – only sees one perspective • Egocentric • Fails to self monitor • Doesn't revise or value revision • Needs others to tell them how they're doing • Does not reflect on experiences • Impulsive • Seeing things in isolation • Sees things as "black or white" • Can't support their position/answer • Does not provide evidence or doesn't know what evidence to use • Only wants "the" answer • Uncomfortable with ambiguity • Can only apply what was taught in the way it was taught

Vertical Articulation of Graduate Profile Indicators

Creative & Critical Thinkers | Skilled Communicators & Collaborators | Compassionate Community Contributors | Adaptable & Reflective Individuals

Leander ISD learners are empowered to be...
Critical & Creative Thinkers *who seek and solve problems through curiosity, flexibility, and innovation.*

Skills	Adult Learner Indicators	9-12 Indicators/I Can Statements	6-8 Indicators/I Can Statements	3-5 Indicators/I Can Statements	K-2 Indicators/I Can Statements	EC Indicators/I Can Statements
Inquiry	• I leverage my curiosity to pose questions and frame problems in ways that open up thinking and possibilities. • I ask and investigate meaningful questions. • I analyze, evaluate, and interpret information from diverse sources to generate my own ideas about a topic or issue.	• I can leverage my curiosity to pose questions and frame problems in ways that open up thinking and possibilities. • I can ask and investigate meaningful questions. • I can analyze, evaluate, and interpret information from diverse sources to generate my own ideas about a topic or issue.	• I can harness my curiosity to pose questions in ways that encourage a deeper level of thinking. • I can investigate meaningful questions. • I can generate my own ideas about a topic or issue by researching information from diverse sources.	• I can be curious and ask questions about topics that interest me to drive my learning. • I can inquire about a topic by asking questions and conducting research. • I can generate my own ideas about a topic or issue by researching information.	• I can be curious by asking questions. • I can ask questions to learn more about things that interest me. • I can create my own ideas based on what I've learned.	• I can ask questions. • I can think about what I have learned. • I can explore, investigate, and create.
Flexible Thinking	• I make connections, identify patterns, and see relationships to form new or creative ideas. • I apply what I learn by adapting and transferring my knowledge as needed. • I persevere through challenges and take risks to find innovative solutions.	• I can make connections, identify patterns, and see relationships to form new or creative ideas. • I can apply what I learn by adapting and transferring my knowledge as needed. • I can persevere through challenges and take risks to find innovative solutions.	• I can make connections, identify patterns, and see relationships to form new or creative ideas. • I can begin applying what I learn in different contexts. • I can persevere through challenges and take risks to find innovative solutions.	• I can make connections, identify patterns, and see relationships to form new or creative ideas. • I can apply what I learn across multiple subjects. • I can keep trying when I face challenges and try new ways to find solutions.	• I can make connections and identify patterns to see relationships. • I can apply what I learn. • I can keep trying when things get hard.	• I can make connections in my learning. • I can apply what I learn. • I can keep trying when things get hard.
Problem Solving	• I change problems into opportunities for learning and improvement. • I apply my learning to solve problems in novel situations. • I evaluate the validity and credibility of information, arguments, and evidence.	• I can view problems as opportunities for learning and improvement. • I can apply my learning to solve problems in novel situations. • I can evaluate the validity and credibility of information, arguments, and evidence.	• I can view problems as opportunities for learning and improvement. • I can apply my learning to solve problems in novel situations. • I can identify the logic, credibility, and validity of new information.	• I can see problems as opportunities to learn. • I can apply my learning to solve problems in new situations. • I can use evidence to determine the trustworthiness of information.	• I can see problems as opportunities to learn. • I can apply my learning to solve problems. • I can investigate if information is true or false.	• I can learn from problems. • I can solve problems. • I can investigate if information is true or false.

Vertical Articulation of Graduate Profile Indicators

Creative & Critical Thinkers | Skilled Communicators & Collaborators | Compassionate Community Contributors | Adaptable & Reflective Individuals

Leander ISD learners are empowered to be...
Skilled Communicators & Collaborators *who listen to understand, express ideas with empathy, and work collectively toward shared outcomes.*

Skills	Adult Learner Indicators	9-12 Indicators/I Can Statements	6-8 Indicators/I Can Statements	3-5 Indicators/I Can Statements	K-2 Indicators/I Can Statements	EC Indicators/I Can Statements
Listening & Self-Expression	• I understand and clearly express my own viewpoints and myself in a variety of environments. • I effectively communicate and express myself in verbal, non-verbal, written, and/or artistic formats. • I engage in open-minded civil discourse with people with whom I may not agree. • I demonstrate compassion, empathy, and integrity by asking questions and seeking to understand.	• I can understand and clearly express my own viewpoints and myself in a variety of environments. • I can effectively communicate and express myself in verbal, non-verbal, written, and/or artistic formats. • I can engage in open-minded civil discourse with people with whom I may not agree. • I can demonstrate compassion, empathy, and integrity by asking questions and seeking to understand.	• I can understand and clearly express my viewpoints in a variety of environments. • I can effectively communicate and express myself in verbal, non-verbal, written, and/or artistic formats. • I can engage in open-minded civil conversations, even if there are differing opinions. • I can demonstrate empathy and integrity by asking questions and seeking to understand.	• I can understand and express my viewpoints with others. • I can effectively communicate and express myself in verbal, non-verbal, written, and/or artistic formats. • I can kindly communicate with others who have different ideas. • I can show empathy by asking questions and seeking to understand.	• I can understand and share my viewpoints with others. • I can communicate and express myself in a variety of ways. • I can kindly communicate with others who have different ideas. • I can show empathy by asking questions and listening to understand.	• I can express myself. • I can communicate with others. • I can say kind things about the work of others. • I can listen to understand.
Teamwork	• I find ways to use my strengths and the strengths of others on my team to achieve a common goal. • I listen to and integrate multiple perspectives to make team decisions, negotiate conflicts, compromise, and accomplish goals. • I work collaboratively with my team and take shared responsibility for results. • I use tools and strategies to exchange and explore ideas, as well as collectively create high-quality products.	• I can find ways to use my strengths and the strengths of others on my team to achieve a common goal. • I can listen to and integrate multiple perspectives to make team decisions, negotiate conflicts, compromise, and accomplish goals. • I can work collaboratively with a team and take shared responsibility for results. • I can use tools and strategies to exchange and explore ideas, as well as collectively create high-quality products.	• I can find ways to build on my own strengths and the strengths of others on my team to achieve a common goal. • I can listen to and seek to understand all perspectives in order to make team decisions, negotiate conflicts, compromise, and accomplish goals. • I can work collaboratively with a team and take shared responsibility for results. • I can use tools and strategies to exchange and explore ideas, as well as collectively create products.	• I can recognize my own strengths and those of others on my team to achieve a common goal. • I can listen to and work with others to make team decisions, compromise, and accomplish goals. • I can work with a team and take shared responsibility for results. • I can use tools and strategies to exchange and explore ideas, as well as create products.	• I can help my partner or team work toward a common goal. • I can listen to and work with others to reach a goal. • I can use tools to share and explore ideas.	• I can listen to and play well with others in a group. • I can take turns, share, and play fairly with others. • I can use tools to share and explore ideas.

Vertical Articulation of Graduate Profile Indicators

Creative & Critical Thinkers | Skilled Communicators & Collaborators | Compassionate Community Contributors | Adaptable & Reflective Individuals

Leander ISD learners are empowered to be...
Compassionate Community Contributors *who value diverse perspectives and share their unique gifts with the world.*

Skills	Adult Learner Indicators	9-12 Indicators/I Can Statements	6-8 Indicators/I Can Statements	3-5 Indicators/I Can Statements	K-2 Indicators/I Can Statements	EC Indicators/I Can Statements
Perspective Seeking	• I seek diverse points of view and consistently learn from others. • I use my cultural experiences and the experiences of others to better understand or anticipate global issues from different points of view.	• I can seek diverse points of view and consistently learn from others. • I can use my cultural experiences and the experiences of others to better understand or anticipate global issues from different points of view.	• I can seek diverse points of view and learn from them. • I can use my cultural experiences and the experiences of others to begin to explore global issues from different points of view.	• I can seek diverse points of view and learn from others. • I can use my understanding of my culture and the culture of others to better understand global issues from different points of view.	• I can listen to and learn from others. • I can learn about cultures different from my own.	• I can listen to others' ideas. • I can learn from and about others.
Empathy & Inclusivity	• I foster a culture of acceptance and safety by listening and valuing others' ideas, perspectives, knowledge, and abilities. • I form positive relationships with others who have different life experiences than my own. • I advocate for myself and others who may not feel included, valued, or represented.	• I can foster a culture of acceptance and safety by listening and valuing others' ideas, perspectives, knowledge, and abilities. • I can form positive relationships with others who have different life experiences than my own. • I can advocate for myself and others who may not feel included, valued, or represented.	• I can foster a culture of acceptance and safety by listening and valuing others' ideas, perspectives, knowledge, and abilities. • I can form positive relationships with others who have different life experiences than my own. • I can advocate for myself and others who may not feel included, valued, or represented.	• I can help others feel safe by listening and valuing others' ideas, perspectives, knowledge, and abilities • I can form positive relationships with others who have different life experiences than my own. • I can advocate for myself and others who may not feel included.	• I can help others feel safe by being kind and including them. • I can make friends and include others. • I can advocate for myself and others.	• I can be kind to others. • I can make friends and play with others. • I can advocate for myself and others.
Contributing	• I recognize the value of my unique gifts and understand how I can use them to benefit our community. • I take individual and collective actions to make our community a better place. • I engage with and act on issues of local, national, and global concern.	• I can recognize the value of my unique gifts and understand how I can use them to benefit our community. • I can take individual and collective actions to make our community a better place. • I can engage with and act on issues of local, national, and global concern.	• I can recognize the value of my unique abilities and skills and understand how I can use them to benefit our community. • I can take individual and/or collective actions to make our community a better place. • I can engage with issues of local, national, and global concern.	• I can recognize how my unique abilities and skills benefit our community. • I can find ways to make our community a better place. • I can engage with and act on issues within my community.	• I can recognize how my unique abilities and skills make my community better. • I can find ways to make my community a better place. • I can be a helper in my classroom and at home.	• I can learn ways to make my community a better place. • I can be a helper in my classroom and at home.2

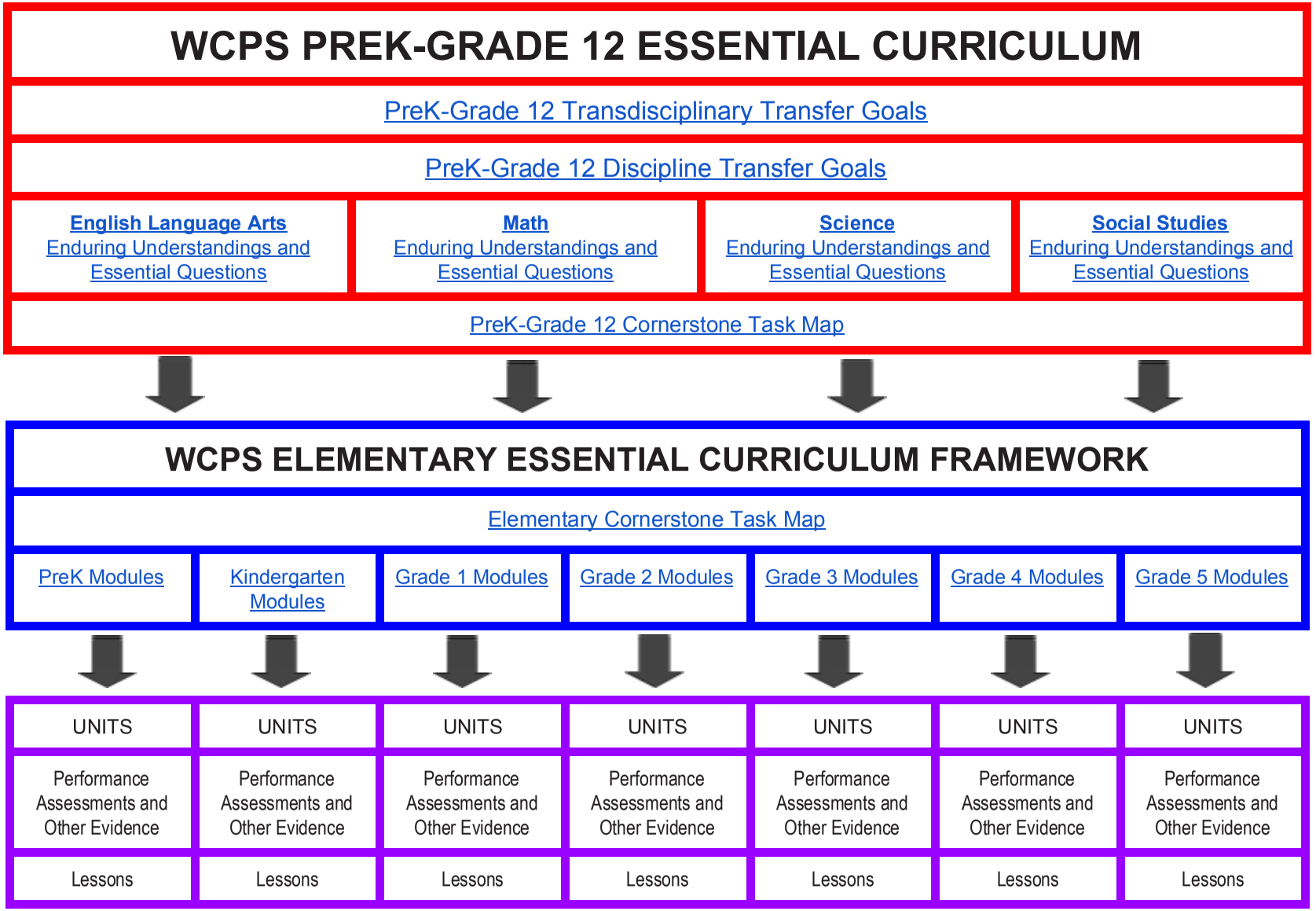
Vertical Articulation of Graduate Profile Indicators

Creative & Critical Thinkers | Skilled Communicators & Collaborators | Compassionate Community Contributors | Adaptable & Reflective Individuals

LISD learners are empowered to be...
Adaptable & Reflective Individuals *who confidently embrace their strengths and challenges while pursuing their interests and passions.*

Skills	Adult Learner Indicators	9-12 Indicators/I Can Statements	6-8 Indicators/I Can Statements	3-5 Indicators/I Can Statements	K-2 Indicators/I Can Statements	EC Indicators/I Can Statements
Fail-Forward	• I persevere and demonstrate resilience through challenges and setbacks while helping others do the same. • I give, receive, and incorporate constructive feedback as part of a continuous learning process. • I reflect and explain how I adapted my approach to successfully achieve desired outcomes.	• I can persevere and demonstrate resilience through challenges and setbacks while helping others do the same. • I can give, receive, and incorporate constructive feedback as part of a continuous learning process. • I can reflect and explain how I adapted my approach to successfully achieve desired outcomes.	• I can work through challenges or setbacks and help others do the same. • I can give, receive, and incorporate constructive feedback as part of a continuous learning process. • I can reflect and explain how I adapted my approach to successfully achieve desired outcomes based on successes, challenges, and limitations.	• I can work through challenges or setbacks and help others to do the same. • I can give and accept feedback and use it to create learning opportunities to improve. • I can identify and explain my successes and challenges when working towards a desired goal.	• I can learn from my mistakes, keep trying, and encourage others to do the same. • I can give and use feedback to help improve my learning. • I can identify and try to explain my successes and challenges when working toward a goal.	• I can keep trying and encourage others to do the same. • I can receive feedback with an open mind. • I can improve based on my experiences and feedback.
Self-awareness & Self-advocacy	• I reflect on my strengths and challenges to continuously improve. • I examine and evaluate my attitudes, opinions, and values to be able to express myself. • I advocate for my own needs and the needs of others.	• I can reflect on my strengths and challenges to continuously improve. • I can examine and evaluate my attitudes, opinions, and values to be able to express myself. • I can advocate for my own needs based on my understanding of myself.	• I can reflect on my strengths and challenges to continuously improve. • I can examine and reflect on my attitudes, opinions, and values to be able to express myself. • I can build on my understanding of how I learn best and advocate for my own personal and learning needs.	• I can reflect on my strengths and challenges to continuously improve. • I can reflect on my attitudes and opinions and be confident in who I am. • I can actively seek to better understand how I learn and can advocate for my own personal and learning needs.	• I can reflect on my strengths and challenges to help me grow. • I can be confident in who I am. • I can recognize when I need help and can advocate for myself.	• I can self-reflect and grow. • I can be confident in who I am. • I can ask for help.
Pursuing Goals, Interests, & Passions	• I set, evaluate, and revise goals that are important to me. • I select strategies to help me achieve my goals, based on my personal strengths and interests. • I pursue my interests and passions by looking for opportunities to learn something new, even when it's challenging. • I maintain a balance of work, fun, and self-care in my life for my personal fulfillment.	• I can set, evaluate, and revise goals that are important to me. • I can select strategies to help me achieve my goals, based on my personal strengths and interests. • I can pursue my interests and passions by looking for opportunities to learn something new, even when it's challenging. • I can maintain a balance of work, fun, and self-care in my life for my personal fulfillment.	• I can set, evaluate, and revise academic and personal goals that are important to me. • I can select strategies to help me achieve my goals, based on my personal strengths and interests. • I can pursue my interests and passions by looking for opportunities to learn something new, even when it's challenging. • I can understand the value of a balance of work, fun, and self-care in my life for my personal fulfillment.	• I can set and revise academic and personal goals. • I use my personal strengths, challenges, and interests to help me plan and achieve my goals. • I can pursue my interests and passions by looking for opportunities to learn something new, even when it's challenging. • I can understand the value of a balance of work, fun, and self-care for my personal fulfillment.	• I can set academic and personal goals. • I can select strategies that help me achieve my goals. • I can pursue my interests and passions. • I can make safe and healthy life choices.	• I can set goals for myself. • I can work towards my goals. • I can pursue my interests and passions. • I can stay on task and take care of my needs.

WCPS Blueprint for Curriculum Design



Professional and Collaboration Time (PACT)

Charge:

We will use PACT to collaborate within various "Learning Communities" to grow professionally, and to collaborate together to enhance our planning, teaching and assessment with **a focus on student learning**. *PACT is not intended for departmental or team "housekeeping" or for individual teacher planning.*

Goals:

To improve curriculum quality and alignment
To analyze "results" and student work
To enhance instructional and assessment practices
To increase professional conversations between ASD faculty members
To better implement school improvement initiatives through collaboration

Schedule:

- Tuesday 1:10 – 3:10 (1:10 – 2:10 = horizontal teams, 2:10 – 3:10 = vertical teams if needed)

Suggestions of collaborative tasks:

– looking at student work
– analyzing data to improve student learning (e.g., NWEA scores, AP results, etc)
– evaluating and refining the quality of assessment tasks & rubrics
– planning among teachers who teach common courses
– coordinating among grade level teams (e.g., vertical alignment of curriculum)
– developing common assessments/rubrics (including moderation of assessments)
– planning for integration of units
– reviewing UbD Units and Atlas Rubicon Curriculum Maps
– discussing professional readings
– planning for implementation of new school/team programs
– participating in professional development

Questions To Ask When Examining Student Work in Teams

Use the following questions to guide the examination of student work.

Describe

- *What knowledge and skills are assessed?*
- *What kinds of thinking are required (e.g., recall, interpretation, evaluation)?*
- *Are these the results I (we) expected? Why or why not?*
- *In what areas did the student(s) perform best?*
- *What weaknesses are evident?* • *What misconceptions are revealed?*
- *Are there any surprises?* • *What anomalies exist?*
- *Is there evidence of improvement or decline? If so, what caused the changes?*

Evaluate

- *By what criteria am I (are we) evaluating student work?*
- *Are these the most important criteria?*
- *How good is "good enough" (i.e., the performance standard)?*

Interpret

- *What does this work reveal about student learning and performance?*
- *What patterns (e.g., strengths, weaknesses, misconceptions) are evident?*
- *What questions does this work raise?*
- *Is this work consistent with other achievement data?*
- *Are there different possible explanations for these results?*

Identify Improvement Actions

- *What teacher action(s) are needed to improve learning and performance?*
- *What student action(s) are needed to improve learning and performance?*
- *What systemic action(s) at the school/district level are needed to improve learning and performance (e.g., changes in curriculum, schedule, grouping)?*

- Other: _____?

- Other: _____?

Data-Driven Improvement Planning

Based on an analysis of achievement data and student work:

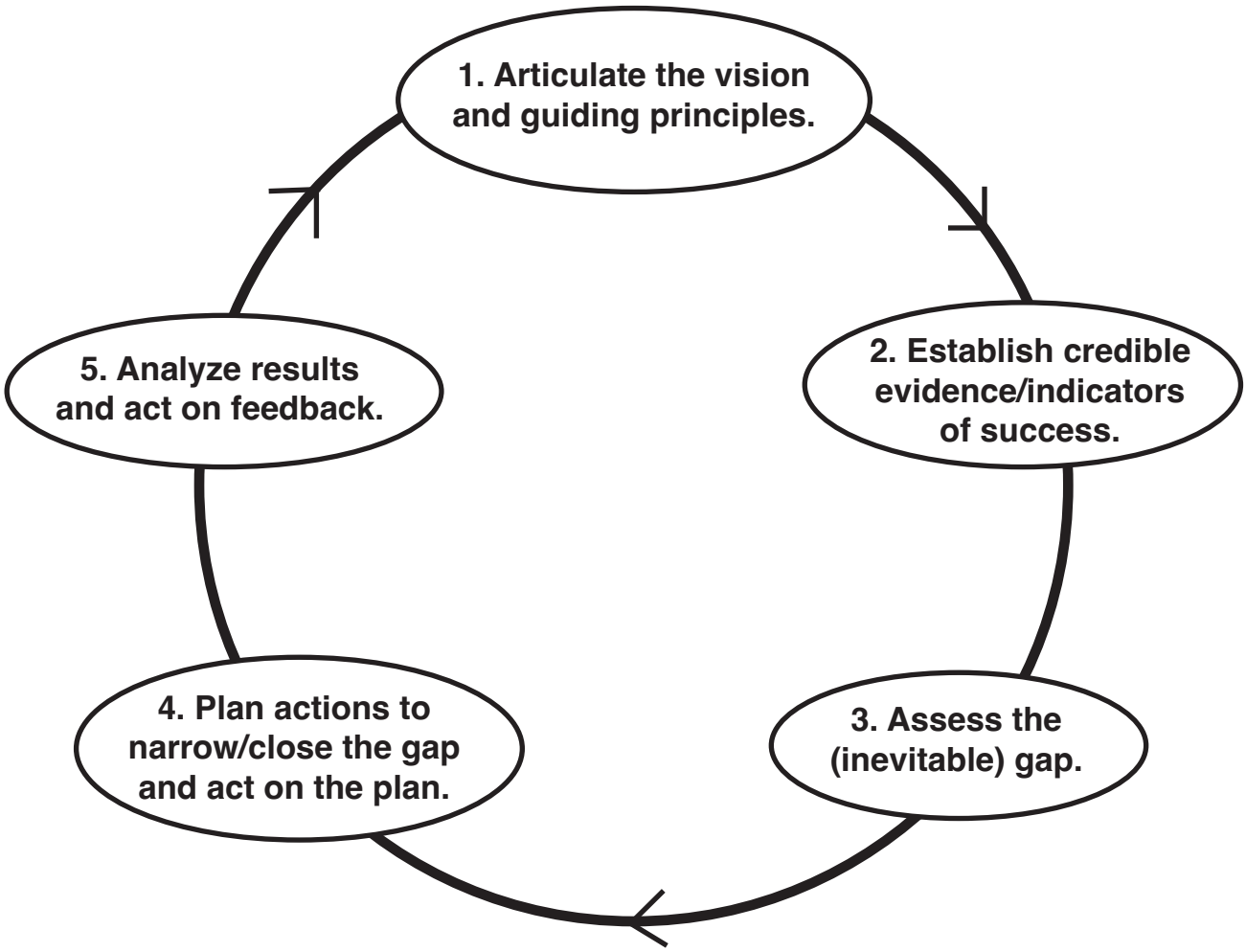
- What *patterns* of weakness are noted?
- What *specific* areas are most in need of improvement?

- problem solving and mathematical reasoning are generally weak
- students do not effectively explain their reasoning and their use of strategies
- appropriate mathematical language is not always used
-

What *specific* improvement actions will we take?

- ☐ Increase our use of "non routine" problems that require mathematical reasoning.
- ☐ Explicitly teach (and regularly review) specific problem solving strategies.
- ☐ Develop a poster of problem solving strategies and post in each math classroom.
- ☐ Increase use of "think alouds" (by teacher & students) to model mathematical reasoning.
- ☐ Develop a "word wall" of key mathematical terms and use the terms regularly.
- ☐ Revise our problem solving rubric to emphasize explanation & use of mathematical language.

Key "Moves" in the Change Cycle



Note: *While there is a general logic to the change process, it is not rigidly sequential. Educational change is typically recursive, similar to the writing process. For example, educators will frequently return to modify their actions as they begin to collect data on results.*

Eight Strategic Principles for Leading Change

1. Frame educational change as an "answer" to a need.
- Any major educational change—a new initiative, policy, structure, and/or program—is best seen as a natural and appropriate response to a recognized need or an aspirational vision.
- If [*any new initiative*] is an answer, what are the questions?
- Be careful not to jump to "solutions" (e.g., Maker Space, Personalized Learning) before the vision is well understood and "owned" by staff and community.

2. Articulate the shared vision and guiding principles.
- What is our mission? What do we seek to accomplish in the long run in terms of student learning?
- What principles, values, and beliefs underlie our vision and mission?

3. Establish credible evidence/indicators of success.
- What would we see if we achieved our mission? What specific indicators will show that our vision is becoming realized?
- What evidence will we need to collect? How will we judge our progress along the way?

4. Assess the (inevitable) gap.
- Where are we now (our current reality) compared to where we want to be (our vision)?
- What gaps should have priority, given the vision and the reality?

5. Plan actions to narrow and close the gaps.
- What specific actions (and their sequence) will be required to launch this initiative?

6. Think BIG, start small, worksmart, and go for early wins?
- Avoid overwhelming everyone with overly-ambitious actions (too much, too fast).
- Begin with prototypes (small hacks), assess results and quickly adjust.
- Go for "early wins" to build confidence and gain momentum.
- No need to reinvent wheels; access already well-developed resources.
- Celebrate short-term successes.

7. At the start, work with people who are willing and able.
- Identify and work with people and groups that are most enthusiastic about the initiative.
- Seek to win over the skeptics, while marginalizing the resistors and saboteurs.

8. Communicate early and often.
- Do not assume that others can "get inside your head." Develop a plan to regularly communicate the goals, processes, schedules, and accomplishments.
- Have a system (e.g., website, FAQ set) by which people can raise questions and provide feedback.
- Anticipate concerns and objections. Prepare for the predictable, "Yes, buts…?

Assessing Staff: Ready? Willing? Able?

Directions: Place estimates of percentage of staff who fall into the 9 categories below. Then, consider the different actions/strategies that may be needed for each group.

	Do they get it?	***Are they willing?***	***Are they able?***
Yes			
Not Yet			
Not Likely			

What patterns are evident?  *What are the implications?*

Possible Actions:

Assessing Conditions for School Transformation: Force Field Analysis

	CURRICULUM	ASSESSMENT	INSTRUCTION	STRUCTURES	RESOURCES	OTHER...
+ Assist						
– Resist						

"Yes, but..." – Responding to Predictable Concerns

Advocates for developing an *Understanding by Design*-based Curriculum and Assessment system often encounter predictable concerns ("yes, buts...") from staff and colleagues. The following exercise is designed to help you prepare thoughtful responses to possible objections.

Part 1 - Select one of the following concerns (or add one of your own) and generate ideas for responding to that concern. Record your ideas in the box below.

Part 2 - Meet with others who have selected the same concern and share responses.

Yes, but...

1. We are expected to teach to state standards and we already have too much content to cover to add any more.
2. We are being held accountable for student performance on standardized tests that use multiple-choice items, not performance assessments.
3. Our students are not capable of acomplishing many of these performance tasks.
4. We don't have the time to develop this kind of curriculum.
5. This approach will take away a teacher's freedom/creativity.
6. This too shall pass!
7. Other: _____

Your response: _____

Analyzing Current Practices Against Best Learning Designs

3 = consistently 2 = sometimes 1 = rarely/never

	3	2	1
Expectations *To what extent does my/our designs...*			
• provide clear learning goals and performance expectations (i.e., no mystery for learners)?	❑	❑	❑
• cast learning goals in terms of genuine/meaningful performance?	❑	❑	❑
• frame the work around genuine questions & meaningful challenges?	❑	❑	❑
• show models/exemplars of expected performance?	❑	❑	❑
Instruction *To what extent does my/our teaching...*			
• provide targeted instruction and relevant resources to "equip" students for expected performance?	❑	❑	❑
• use the textbook as one resource among many (i.e., the textbook is a resource, *not* the syllabus)?	❑	❑	❑
• help "uncover" important ideas/processes by exploring essential questions?	❑	❑	❑
Learning Activities *To what extent does my/our learning activities...*			
• address individual differences (e.g., learning styles, skill levels, interests) through a variety of activities/ methods (vs. "one size fits all")?	❑	❑	❑
• provide variety in work, methods and students have some choice (e.g., opportunities for both group and individual work)?	❑	❑	❑
• include inquiry/experiential opportunities to help students "make meaning" for themselves?	❑	❑	❑
• incorporate cycles of *model-try-feedback-refine* learning experiences?	❑	❑	❑
Assessment *To what extent does my/our assessments...*	❑	❑	❑
• provide appropriate measures of *all* of the learning goals?	❑	❑	❑
• ask students to demonstrate their understanding through "real world" applications?	❑	❑	❑
• provide on-going, timely, and descriptive feedback to learners?	❑	❑	❑
• include opportunities for trial and error, reflection and revision?	❑	❑	❑
• allow self-assessment by the learners?	❑	❑	❑
Sequence & Coherence *To what extent does my/our designs...*			
• include pre-assessments to check for prior knowledge, skill level, and misconceptions?	❑	❑	❑
• begin with a "hook" (e.g., immerse the learner in a genuine problem/issue/challenge)?	❑	❑	❑
• move back and forth from whole to part, with increasing complexity?	❑	❑	❑
• scaffold learning in "do-able" increments?	❑	❑	❑
• revisit important ideas/questions and allow learners to rethink and revise earlier ideas/work?	❑	❑	❑
• remain flexible (e.g., to respond to student needs; allow revisions to achieve goals)?	❑	❑	❑

An Example of a Macro Curriculum Development Pathway

	Stage 1 – Transfer Goals, Overarching Essential Questions and Understandings	**Stage 2** – Cornerstone Performance Assessment Tasks and Rubrics	**Stage 3** – Instructional/Learning Plans and Resources	Professional Learning Communities
	E/LA, Math, Science			
Year 1	Develop drafts; seek feedback from all related staff members	Create a map of current performance tasks and projects being used.	PD on Teaching for Understanding strategies	Teams meet to review curriculum drafts
Year 2	Check vertical alignment; adjust as needed	Develop draft tasks; seek feedback from all related staff members	PD on Teaching for Understanding strategies	Teams meet to review student work from tasks & make improvement plans
Year 3		Expand the task map; check vertical and horizontal alignment; look for/make interdisciplinary	Develop pre- and formative assessments (e.g., a scrimmage for the game).	Teams meet to review student work from tasks & make improvement plans
Social Studies, World Languages, Visual/Performing Arts				
Year 2	Develop drafts; seek feedback from all related staff members	Create a map of current performance tasks and projects being used.	PD on Teaching for Understanding strategies	Teams meet to review curriculum drafts

Example *(continued)*

Year 3	Check vertical alignment; adjust as needed	Develop draft tasks; seek feedback from all related staff members	PD on Teaching for Understanding strategies	Teams meet to review student work from tasks & make improvement plans
Year 4		Expand the task map; check vertical and horizontal alignment; look for/make interdisciplinary connections	Develop pre- and formative assessments (e.g., a scrimmage for the game).	Teams meet to review student work from tasks & make improvement plans
Health and P.E., CTE, Library/Media, etc.				
Year 3	Develop drafts; seek feedback from all related staff members	Create a map of current performance tasks and projects being used.	PD on Teaching for Understanding strategies	Teams meet to review curriculum drafts
Year 4	Check vertical alignment; adjust as needed	Develop draft tasks; seek feedback from all related staff members	PD on Teaching for Understanding strategies	Teams meet to review student work from tasks & make improvement plans
Year 5		Expand the task map; check vertical and horizontal alignment; look for/make interdisciplinary connections	Develop pre- and formative assessments related to the performance tasks (e.g., a scrimmage for the game).	Teams meet to review student work from tasks & make improvement plans

Synthesizing Activity

Directions:

INDIVIDUALLY... *Review your handouts and notes. Identify 2-3 useful and/or interesting ideas gained as a result of attending this session.*

WITH YOUR GROUP... *Share your interesting/useful ideas with group members and listen to theirs. Add to your list in the space below.*