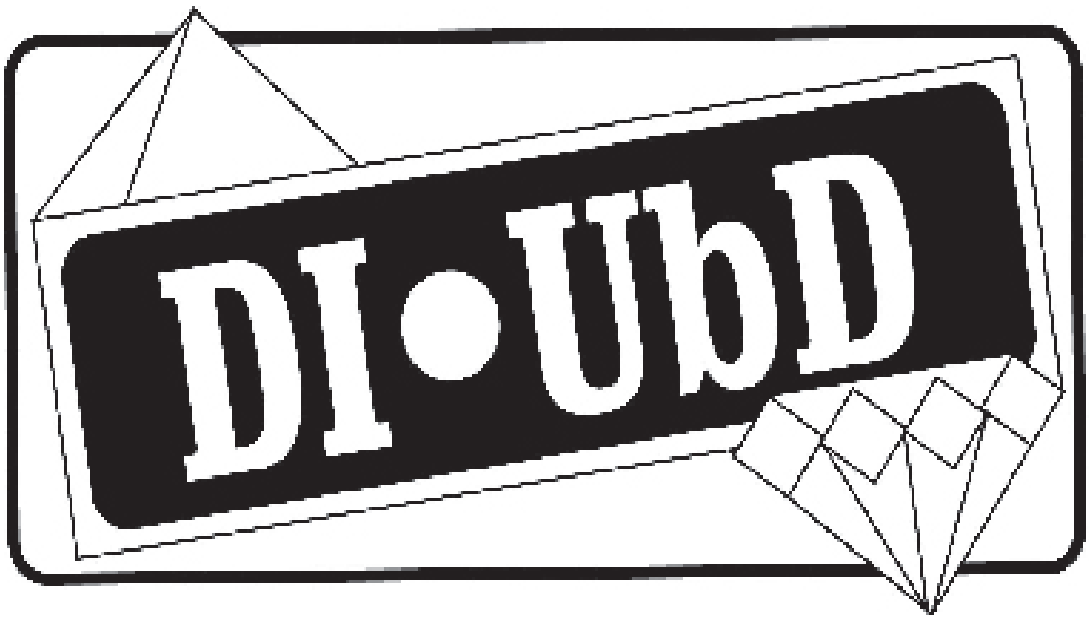
Connecting Content and Kids:

Integrating

Understanding by Design

and

Differentiated Instruction



presented by

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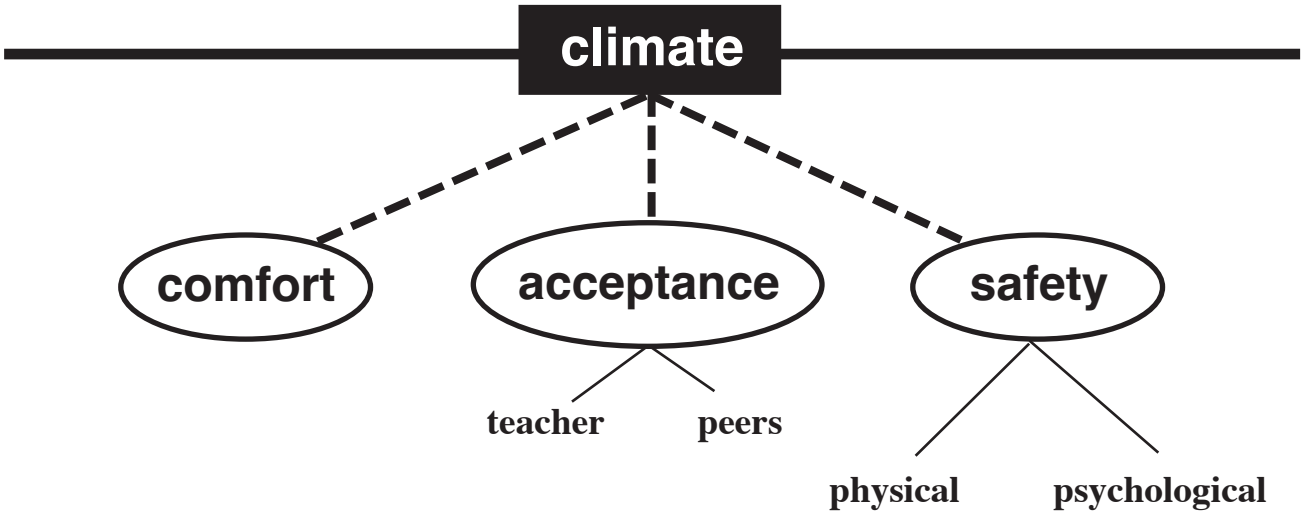
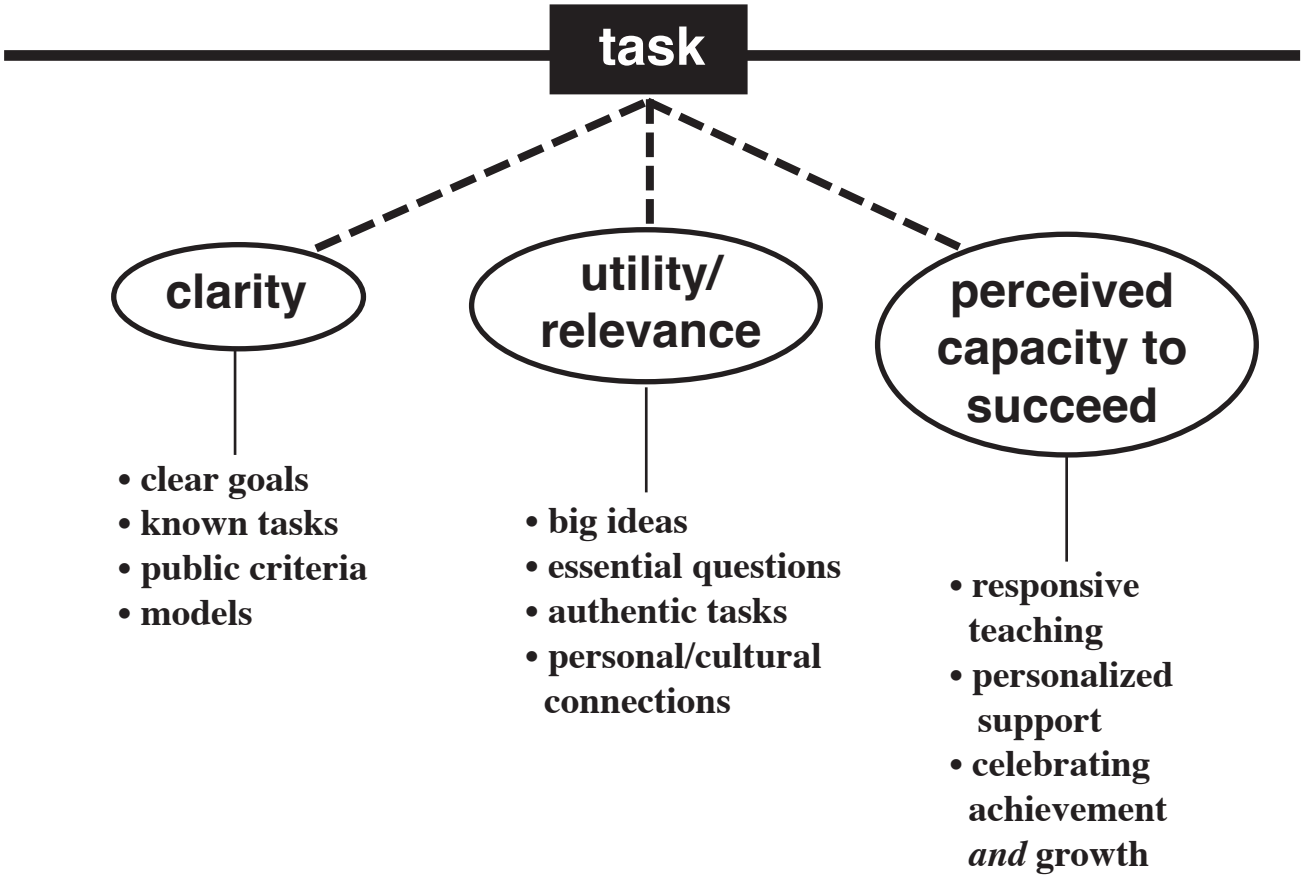
A Research-Based UbD and DI Connection

Research has identified the following variables that impact a learner's willingness to put forth effort. Both Understanding by Design and Differentiated Instruction address these variables in ways that support students and their learning.





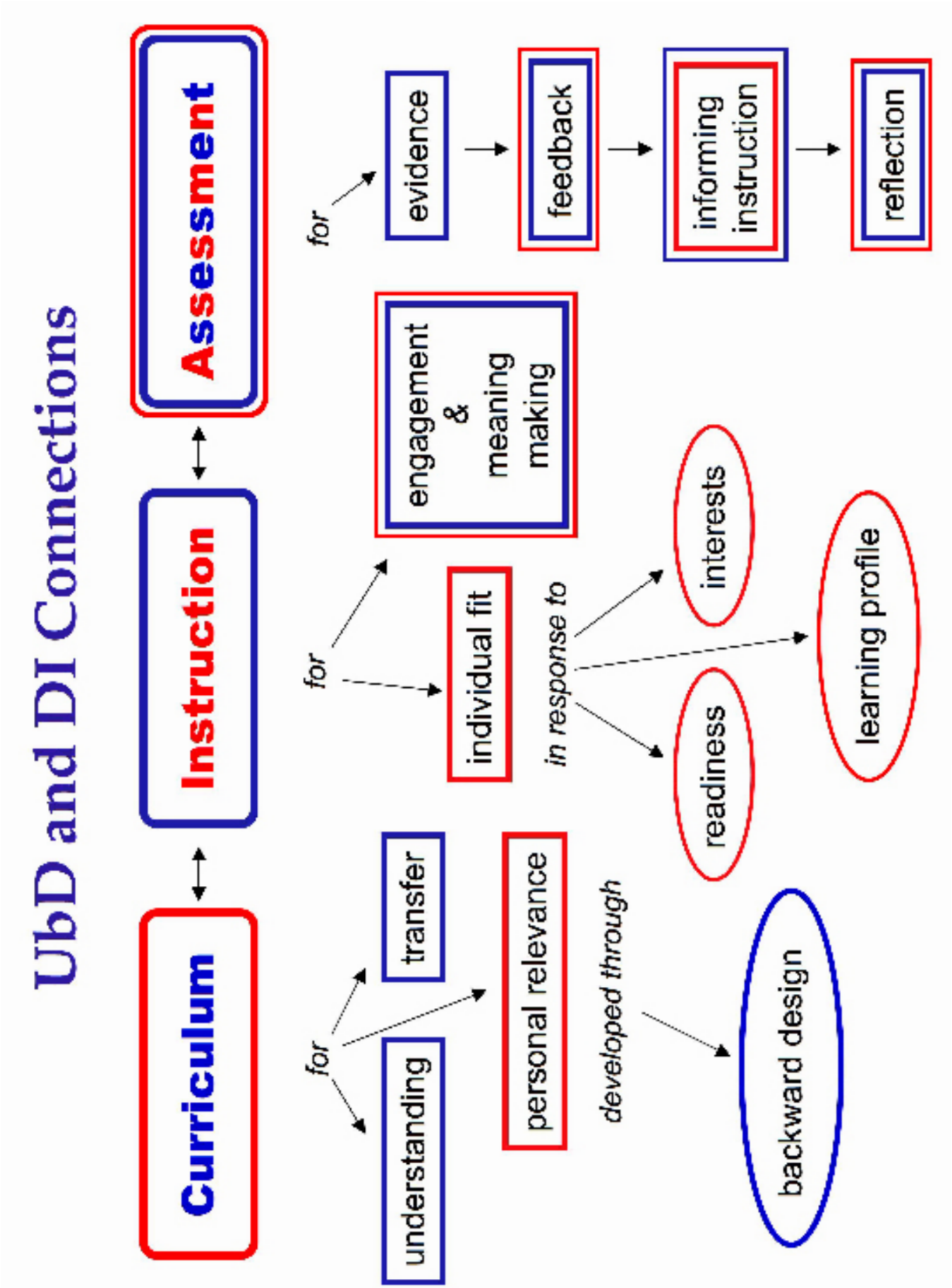
Key Understandings about...

-- Understanding by Design --

1. A primary goal of education is the development and deepening of student understanding to enable transfer of knowledge and skills.
2. Effective curriculum development reflects a three-stage design process called "backward design." This process helps to avoid the twin problems of "textbook coverage" and "activity-oriented" teaching.
3. Content needs to be "unpacked" to identify the big ideas worth understanding and the essential questions worth uncovering.
4. Evidence of student understanding is revealed when students apply (transfer) knowledge and skills within authentic contexts.
5. Six facets of understanding – the capacity to explain, interpret, apply, shift perspective, empathize, and self-assess – serve as indicators that students understand.
6. Understanding cannot be simply transmitted by "telling". It must be actively "constructed" in the mind of the learner.
7. Regular reviews of curriculum and assessment designs, based on design standards, provide feedback for improving curricular effectiveness.

-- Differentiated Instruction --

1. Learners differ in terms of their readiness (background knowledge, skills and experiences), learning profile (culture, gender, and preferred style) and interests. Learning is enhanced when these differences are acknowledged and addressed.
2. Effective differentiation is rooted in a solid curriculum.
3. The classroom environment builds a context for learning and influences the results. When students feel affirmation, affiliation, a sense of contribution, growing autonomy, and a sense of accomplishment, their learning potential is enhanced.
4. To learn well, each student needs success at increasing levels of challenge, and scaffolded learning experiences to ensure consistent growth.
5. Diagnostic (pre-) assessments are essential to reveal differences in students' readiness, learning profiles, and interests. Pre-assessment information guides differentiation.
6. Respectful tasks engage learners in working with essential content in ways that stimulate and challenge them.
7. Responsive teaching addresses learners' differences through effective classroom routines, and use of varied and appropriate teaching/learning strategies.


UbD and DI Connections
Curriculum
Instruction
Assessment
for
understanding
transfer
personal relevance
developed through
backward design
for
individual fit
in response to
readiness
interests
learning profile
engagement & meaning making
for
evidence
feedback
informing instruction
reflection

Differentiated Instruction – Big Ideas and Implications

Big Ideas	Understandings	Essential Questions	Implications
Readiness **Interests** **Learner Profile**	* Learners differ in terms of their readiness (background knowledge, skill levels, and experiences), learning profile (culture, gender, preferred style/intelligence), and interests/talents. Learning is enhanced when these differences are acknowledged and addressed.	• *How will we determine a learner's readiness, interests and profile?* • *How will we accommodate differences in learners' readiness, interests and profile?*	√ Use diagnostic (pre-) assessments to check for students' readiness, interests and profile. √ Use the information from pre-assessments to plan differentiated instruction.
Content **Process** **Product**	* Effective differentiation is anchored by a curriculum grounded in "big ideas," essential knowledge and skills with varied routes to accessing the content. * Learning is enhanced when instruction helps students make sense of content by accommodating differences in readiness, interest, and learning profile. * Students can demonstrate their learning through varied products and performances. Valid assessment evidence can be collected without standardization.	• *What should <u>all</u> students know, understand and be able to do?* • *How will we frame content in ways that respond to differences in learner's readiness, interest, and learning profile.* • *What activities and mental processes will help students make sense of content?* • *How will students "best" display their knowledge, skills and understandings?*	√ Address learners' diverse needs, interests, and profiles through a variety of strategies, such as tiered lessons, flexible groupings, and scaffolded assignments. √ Provide varied learning options and/or allow students appropriate choices regarding how they work (*process*) as well as the ways that they demonstrate their learning (*products and performances*).
Learning Environment	* The potential for learning is enhanced when students feel affirmation, affiliation, a sense of contribution, growing autonomy, and a sense of accomplishment.	• *In what ways can the classroom environment enhance learning for all learners?*	√ Connect with each student, build a community of learners, and establish "ground rules." Support and reinforce *all* learners for effort, progress and achievement.

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.

A Summary of Key Research Findings Supporting

Differentiated Instruction

• Learning profile refers to preferred modes of learning or ways in which a student will best process what he/she needs to learn. Learning profile is shaped by a person's gender, culture, learning style, and intelligence preference. It is important for classrooms to provide a range of materials, processes, and procedures for learning so that students with different learning profiles find them comfortable and effective places to learn.

• Intelligence manifests itself in a variety of spheres. While these manifestations are fluid rather than fixed, there is benefit to addressing a learner's intelligence preferences in instruction.

• A person's culture shapes his/her perspectives, points of view, frames of reference, modes of communication, sense of identity, and cognitive style. While there is great variance within any culture and it is not appropriate to generalize to a culture, classrooms that favor cultural patterns of one group and are inhospitable to those of other groups are likely to have negative impacts on the learning of students from the non-favored groups.

• A person's gender can influence the way that person sees and interacts with the world around them—including the classroom. While it is not appropriate to generalize to a particular gender, there are likely some female-preferred learning patterns and some male-preferred learning patterns

• Learners must work at an appropriate degree of challenge or degree of difficulty with what they seek to learn. When tasks are too difficult for students, they become frustrated and do not learn effectively or efficiently. When tasks are too easy for students, they become bored and do not learn, in spite of the fact that they might earn high grades. Learning occurs through a progression of appropriately scaffolded tasks at degrees of difficulty just beyond the reach of a particular student.

• Students learn more effectively when teachers diagnose a student's skill level and prescribe appropriate tasks.

• When an individual's interest is tapped, learning is more likely to be rewarding and the student more likely to become an autonomous learner. Student interest is key to on-going student motivation to pursue tasks at increasing levels of complexity.

Integrating UbD and DI when Planning a Unit

The following chart depicts a step-by-step sequence for designing a UbDI unit. The actual design process is more iterative (i.e., back and forth) in nature.

Continue developing a learning environment that promotes success for each learner.

Continue actively learning about the strengths and needs of each learner.

- Early in the year, pre-assess for learner proficiency with precursor knowledge and skills (e.g. reading, writing, computation, spelling, vocabulary) as well as for interest and learning preferences.
- Determine desired results of a unit (established goals, essential understandings, what students will know and be able to do, essential questions).
- Determine acceptable evidence that students are proficient with desired results (including performance tasks and other evidence in varied formats and modes).
- Develop a learning plan, including direct instruction and learning activities to ensure that students develop proficiency with content goals.
- Pre-assess to determine existing, student knowledge, understanding, and skill with unit goals and precursor knowledge, understanding, and skill
- Differentiate and implement initial learning plans in response to pre-assessment evidence to address readiness, interest, and learning preference needs, including attention to student groupings, use of time and materials, variance in whole class and small group instruction, varied task complexity, etc.
- Use formative or on-going assessment, including performance tasks and student reflection, to gather evidence about student progress and needs.
- Continue to differentiate initial learning plan as needed based on formative assessment data.
- Implement summative assessment plans with appropriate options to determine student knowledge, understanding, and skill based on unit goals.
- Report to students and parents regarding product, process, and progress.

Getting to Know Your Students

Consider the following methods for gathering information early in the school year to help you learn about your students' experiences, learning profiles, strengths, needs, and interests.

❏ Have students write a letter* to you (and their other teachers) describing themselves as learners. Sample prompts:

- *What subjects (or aspects of a particular subject) do you enjoy most? Why?*
- *What subjects (or aspects of a particular subject) do you enjoy least? Why?*
- *In what areas of school do you excel? .... find most difficult?*
- *How do you learn best?*
- *What do you want your teacher(s) to know that will help them help you learn best?*

❏ Have students write a brief biography* of their life and times. Ask them to tell their most vivid memory and include information relevant to their history as a student.
Alternative: Have students make a "life map" timeline of key events in their past *and* a future map; i.e., where they plan or hope to be in 5 and 10 years.

❏ Ask parents write a letter to you describing their child? Sample prompts:

- *What are your child's interests and hobbies?*
- *In what areas of school does your child excel? .... find most difficult?*
- *How does your child learn best (e.g., listening, observing, doing, etc.)?*
- *What do you want me to know that will help me help your child learn best?*

❏ Ask students to conduct a Peer Interview using questions such as those listed above. Then, have each student introduce their partner to the class.

❏ Ask students to complete a Peer Nomination form. Sample prompts:

- *Who would you ask to help you if you get stuck on class work or homework?*
- *With whom would you prefer to work with in a group?*
- *Who would not wish to have in your group?*
- *Who are the most serious students in this class?*
- *Who are the most creative students in this class?*
- *Who could best take charge of the class if the teacher had to leave the room?*

❏ Review students' cumulative records. Look for patterns of academic achievement, areas of particular strengths and weakness, work habits, behavior, etc. Also, note relevant transcript details (e.g., frequent transfers) and comments by former teachers.

❏ Use pre-assessments to check for proficiency levels in relevant skills. Make sure that students understand the purpose of this assessment and that the results will not be graded or used in calculating a summative mark.

**Note: Students incapable of extended writing may be allowed to use a tape recorder or MP3 device.*

Interest Inventory for Primary Students

sample

Dear Families,
In anticipation of the new school year, we would like to welcome you to our classroom. We are looking forward to getting to know your child and working with you to make this a wonderful kindergarten year. Our classroom is sensitive to the strengths and needs of each child. Because you are the person who knows your child the best, we would like to invite you to share your thoughts about your child. Anything you can think of will be helpful. Please read and discuss the questions with your child, he or she may answer the questions if you will write in the answers. This reflection will help us to better match our teaching styles and the curriculum to your child and his or her individual needs. Thank you!

Student's Name: _____Date of Birth: _____

1. What do you enjoy most about your child?

2. When your child is upset, what are some strategies that you find helpful?

3. Has your child experienced any traumatic events in his or her lifetime?

4. Did your child attend a 4 year old program of any kind? How many hours per week? What was the focus of the program?

5. Does your child nap? If so, for about how long?

All About Me

Do you have any brothers or sisters?
Names and ages: _____

Who else lives at home with you?

Do you have any pets? What kind and name?

What is your favorite animal and why?

What is your favorite food?

What is your favorite TV show?

What do you usually do after school?

Do you like to play sports?

What sports do you play?

Interest Inventory for Primary Students

continued

Do you like to play board or video games? Which games?

Do you like to listen to music?

Do you like to sing?

What are your favorite foods?

What do you like to do with your family?

Reading Inventory

Do you like to look at books?

Do you read books by yourself or with someone?

How often do you read at home?

In general, how do you feel about reading?

How do you decide what books to read?

What kinds of books do you like to read?

Do you check out books from the library?

What is/are your favorite book(s)?

Do you have a favorite author? Who?

Additional Sources for Student Interest Surveys

<www.saskschools.ca/~ischool/adapthandbook/learner/interest.html>

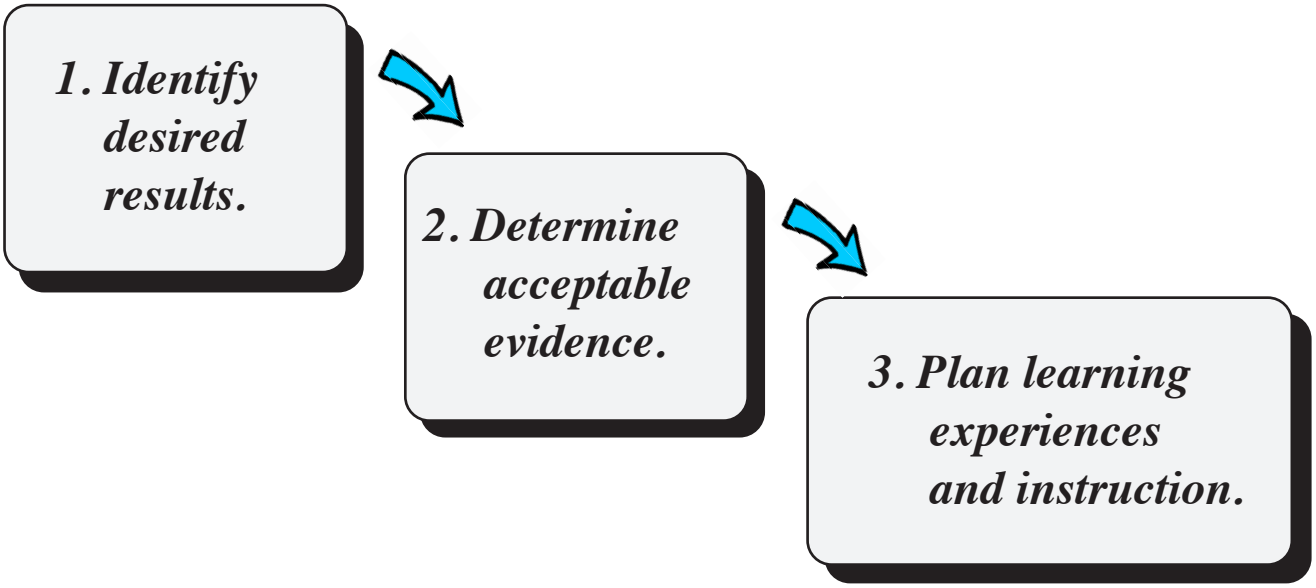
<http://printables.scholastic.com/printables/detail/?id=35571>

Interest inventories geared to Career and School-to-Work

<www.aea10.k12.ia.us/curr/stw/DirIntInv.html>

<www.careercc.com/career_assessment.shtml>

UbD: Stages of "Backward" Design



The backward design approach consists of three general stages:

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., content standards, curriculum objectives, etc.)? What "enduring" understandings are desired? What provocative questions are worth pursuing to guide student inquiry into these big ideas? What specific knowledge and skills are targeted in the goals 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 content 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 finalize a plan for the learning activities. What will need to be taught and coached, and how should it best be taught, in light of the performance goals? What sequence of activity best suits the desired results? In planning the learning activities, we consider the WHERETO elements (described later) as guidelines. Those guidelines can be summed up in a question: how will we make learning both engaging *and* effective, given the goals and needed evidence?

Stage 1 – Desired Results

Established Goal(s):

Understanding(s):
Students will understand that…

Essential Question(s):

Students will know…

Students will be able to…

Stage 2 – Assessment Evidence

Performance Task(s):

Other Evidence:

Stage 3 – Learning Plan

Learning Activities:

Stage 1 – Desired Results

Established Goal(s):

- *What relevant goals (e.g., Content Standards, Course or Program Objectives, Learning Outcomes etc.) will this design address?*

Understanding(s):

- *What are the "big ideas"?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*

Essential Question(s):

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*

Students will know...

Students will be able to...

- *What key knowledge and skills will students acquire as a result of this unit?*
- *What should they eventually be able to do as a result of such knowledge and skill?*

Stage 2 – Assessment Evidence

Performance Task(s):

- *Through what authentic performance task(s) will students demonstrate the desired understandings?*
- *By what criteria will "performances of understanding" be judged?*

Other Evidence:

- *Through what other evidence (e.g. quizzes, tests, academic prompts, observations, homework, journals, etc.) will students demonstrate achievement of the desired results?*

Stage 3 – Learning Plan

Learning Experiences:

- *What learning experiences and instruction will enable students to achieve the desired results? How will the unit design:*
  - *– help students* **acquire** *new information and basic skills?*
  - *– actively engage students in* **making meaning** *of the content?*
  - *– prepare student to be able to* **transfer** *their learning?*
  - *– help students reflect upon and self-assess their learning?*

Incorporating Differentiation and Backward Design

Unit Topic: Novel Study - *The Catcher in the Rye* **Designer(s):** D. Grant
Subject(s): English/Language Arts **Grade(s):** 9th-10th

Stage 1 – Desired Results

Established Goal(s):

- Students will read and interpret works of literature.
- Students will analyze authors' styles.
- Students will write for a variety of purposes and audiences.

Understanding(s):

Students will understand that…

- Novelists often provide insights about human experience and inner life through fictional means.
- Authors use a variety of stylistic devices to hook and hold their readers.
- Holden Caulfield represents common adolescent experience but masks deep-seated personal problems about growing up and relationships with others.

Essential Question(s):

- What is the relationship between fiction and truth?
- What insights do we gain into American history and contemporary culture through its literary characters?
- How does J.D. Salinger 'hook' you as a reader? How effective were his stylistic devices?
- What's wrong with Holden?

Students will know…

- the plot, setting and main characters of the novel
- stylistic devices used by J.D. Salinger in *The Catcher in the Rye*

Students will be able to…

- use interpretive reading strategies to analyze literature
- develop a well-reasoned hypothesis through a close reading of a text
- write to explain
- apply writing conventions effectively

Ideas for Differentiation

While the established goals will remain the same for virtually all students (exception: some IEPs), it's important at the outset of planning to consider the range of students likely to be in the class in terms of their backgrounds, readiness needs, interests, and learning profiles.

Think about ways in which you might link the essential understands and questions to the lives and experiences of students, and how exploration of the understandings and questions could help build community in the classroom.

What precursor knowledge and skills are you expecting students to have in preparation for this set of knowledge and skill? Begin thinking about ways you can support students in developing "missing" competences and what you can do to extend the knowledge & skill of students who already show mastery.

Incorporating Differentiation and Backward Design

Unit Topic: Novel Study - *The Catcher in the Rye* **Designer(s):** D. Grant
Subject(s): English/Language Arts **Grade(s):** 9th-10th

Stage 2 – Assessment Evidence

Performance Task(s):

WHAT'S WRONG WITH HOLDEN?
You serve as a case worker at the psychiatric hospital where Holden Caulfield is telling his story. After a close reading and discussion of Holden's account of the events of the preceding December, you will write a letter to Holden's parents to describe Holden's behavior and explain what (if anything) is wrong with him. Cite examples from the text to support your analysis.

Content Criteria:

- insightful interpretation of literary character
- citation of relevant text to support the character analysis

Product/Performance Criteria:

- clear and coherent writing
- accurate and effective use of writing conventions

Other Evidence:

Quizzes: two quizzes on the plot, settings and main characters
Writing Prompt: Describe a "modern day" teenager using J.D. Salinger's writing style.
Reading Response Journal: Students to respond in their journals to two questions at the end of each reading assignment.

a) What is the most important thing you learn about Holden in this section of the novel?
b) What is the most important unanswered question about Holden at this point in the novel?

Ideas for Differentiation

Are there students who will need support with reading/searching the text? With writing? Consider using peer critique groups, mini-workshops, small group instruction, targeted vocabulary handouts, role play prior to writing, etc.

Would it be helpful to some students to see models of papers that do and don't meet these criteria? Would it be helpful for advanced students to see advanced models. Do rubrics provide something for highly able students to aim for?

Would it be helpful for struggling students to have an option for later quizzes to demonstrate ultimate mastery of content? Might it be useful to tier the writing prompt? Are there some students who would benefit from scaffolded writing early on in the reading response process?

Incorporating Differentiation and Backward Design

Unit Topic: Novel Study - *The Catcher in the Rye* **Designer(s):** D. Grant
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Stage 3 – Learning Plan

Consider the W.H.E.R.E.T.O. elements:

Day One: Begin by telling students that Holden is telling his story from a "rest home" or psychiatric hospital in California. Set the tone of a puzzle to be solved -- a character and a situation that will be revealed gradually.
Present and discuss the culminating the performance task, "What's wrong with Holden?"

Ask the students to respond in the journal at the end of each reading assignment and before the next class to two questions: a) what is the most important thing you learn about Holden in this section of the novel? and b) what is the most important unanswered question about Holden at this point in the novel? Student responses to these questions will begin and end daily class discussions.

The novel is divided her into six reading assignments. Sample discussion questions are provided (in italics).

#1: Chapters 1-4 (pp. 1-35): What observations do you have about Holden's use of language?
#2: Chapters 5-9 (pp. 35-66): What observations do you have about Holden's fight with Stradlater?
#3: Chapters 10-14 (pp. 66-104): On p. 87, Holden says, "The Navy guy and I we were glad to've met each other. Which always kills me. I'm always saying, 'Glad to've met you to somebody, I'm not at all glad I met.' If you want to stay alive, you have to say that stuff, though." Based on your own life and experiences, do you think this last observation is true? Be specific.
#4: Chapters 15-18 (pp. 105-141): Look at the conversation between Holden and Sally on pp. 130-134. What do you think is most important about it in regards to understanding Holden?
#5: Chapters 19-23 (pp.141-180): What do you think is the most revealing moment in the long scene between Holden and Phoebe, in D.B.'s bedroom?
#6: Chapters 24-26 (pp. 180-214): How do you interpret Mr. Antolini's behavior and Holden's reaction to it, at the time and later? What scene early in the book does this remind you of?

Ideas for Differentiation

Be sure to front-load vocabulary here (spotlight/clarify key academic vocabulary students will need for success). Ensure that students have an accurate context for dealing with the concept of mental illness – views may be shaped by culture/experience.

For struggling students, consider amplifying discussion questions with illustrations that point students to key text. For all students, consider making links between Holden's experiences and those in their own lives.

Some students might benefit from pre-writing discussion groups to jump-start the process and/or from post-writing sharing groups to see how other students are thinking and writing. If students write in class, the teacher might meet with small groups to clarify, support, extend, monitor.

Incorporating Differentiation and Backward Design

Unit Topic: Novel Study - *The Catcher in the Rye* **Designer(s):** D. Grant
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Stage 3 – Learning Plan

Consider the W.H.E.R.E.T.O. elements:

Day Two: [Each day, students meet in their cooperative groups to discuss the reading and the associated question. Then, lead a full class discussion.]
e.g., Holden is at his funniest in these early chapters describing Pencey Prep, but even here students will notice how he uses language and humor to distance and protect himself. In discussing student answers to the journal questions, remind students as they go along in their reading to note: 1. Any details about Holden's family; 2. What things Holden says "depress him."

Day Three: Give Quiz #1. Conduct a class discussion in response to the quiz questions and journal writing related to their reading.

Day Four: Present students with excerpts from several different authors' descriptions of characters. Have students work in cooperative groups to compare these authors w/ the way in which Salinger describes. Guide students in identifying specific literary techniques used by Salinger.

Day Five: Present and discuss writing assignment (OE #2). Review the writing process and allow pre-writing time for brainstorming and initial organization of ideas. Present and discuss scoring rubric. Continue drafting for homework.

Day Six: Give Quiz #2. Discuss quiz and journal responses to reading. Have students meet in peer review groups to exchange and give feedback on draft writing based on the rubric. Allow revision time. Students complete the writing assignment for homework.

Day Seven: Discuss the ending of the book. In preparation for the final performance task, have students work in groups to discuss Holden from the perspective of different characters – one from a member of Holden's family, one from one of his teachers, and two from his friends/peers. Lead full class discussion. Then, ask students to identify the characteristics of an effectiveresponse to their forthcoming task, What's Wrong With Holden? Guide them in generating the key rubric traits. Students complete task over the weekend.

Day Eight: Collect the letters to Holden's parents. Discuss students' interpretations of "what's wrong with Holden?" Have students complete, and then collect, their final journal entries.

Ideas for Differentiation

Use flexible grouping over time so students sometimes meet with students of similar readiness to work on particular skills, sometimes with mixed readiness to support growth, sometimes with interest-based groups, or groups using on a particular modality to explore ideas (e.g art, drama, music).

Day 3--do any students need scaffolding for the quiz? Use varied approaches to calling on students to ensure maximum participation in discussion.

Day 4—use excerpts from various cultures, at varied reading levels.

Day 5—meet briefly with advanced writers to extend their sense of possibility.

Day 6--use peer review groups w/ guidelines targeted at particular skills needs.

Day 7—pre-arrange students to role play the different character perspectives.

Incorporating Differentiation and Backward Design

Unit Topic: Telling Time **Designer(s):** K. Davis
Subject(s): Mathematics **Grade(s):** 1

Stage 1 – Desired Results

Established Goal(s):

Standard 1.11 The student will tell time to the half hour, using an analog or digital clock.

Understanding(s):
Students will understand that...

- Measuring the passage of time helps us plan and organize activities.
- Humans measure time in a variety of ways.

Essential Question(s):

- How would life be different if we couldn't tell time?
- How do we know what time it is?
- How do people measure time?

Students will know...

- time-related vocabulary terms.
- different kinds of devices for measuring time

Students will be able to...

- tell time

Ideas for Differentiation

Think about the likely backgrounds of the students--their cultures, experiences in and out of school. Might you have some students who: are uncomfortable in school, lack friends, are strong leaders, do not speak English fluently, have difficulty listening, know a great deal, etc?

What experiences might the students have had that involve telling time? What important events in their lives might be associated with time? What books/stories might they know that involve time? What common experiences related to time can you build to give them shared context and experiences related to time?

What is likely to be the most any student would know about telling time? The least? What knowledge related to time are you a ssuming they will have? What skills related to telling time are you assuming they will have? (What gaps might you need to fill? What knowledge & skill could you extend in a meaningful way?

Incorporating Differentiation and Backward Design

Unit Topic: Telling Time **Designer(s):** K. Davis
Subject(s): Mathematics **Grade(s):** 1

Stage 2 – Assessment Evidence

Performance Task(s):

Imagine that you are in charge of the cafeteria and must help the cafeteria staff know when to begin preparing lunch for the primary lunch shift. You know that it takes 2 hours and 15 minutes to prepare lunch. To help the staff be ready to serve lunch on time, create two analog clocks to hang on the wall in the kitchen. One clock will show what time to start preparing lunch. The other clock will show when the kids will arrive to eat. When you have completed the clocks, write a note* to explain to the school principal what time the kitchen staff will begin preparing lunch in order to have it ready for the primary lunch shift.

Content Criteria:

- accurate time placement shown on each clock
- explanation clearly shows understanding of time frames
- appropriate use of time-related vocabulary

Product/Performance Criteria:

- ideas are clearly conveyed in writing

Other Evidence:

- worksheets on the "clock"
- quiz on "measuring devices"
- teacher observations of students at work throughout the unit
- oral questioning on telling time (on-going)

Ideas for Differentiation

*As an alternative to writing students can provide an oral explanation. Students having difficulty with time might use a scaffolded version of the task with guides to help with figuring out the times, questions to answer in the explanation, key words to assist w/ language, etc. Advanced students might solve a problem with several time increments the staff will need to attend to as they prepare, serve, & clean up.

Criteria won't change. However, students with motor skills problems might tell a teacher or peer how to draw the clock & insert time. Students learning English might have a list of words to use. Students with reading difficulties might dictate their explanation. Advanced students might have complex questions to answer for the staff.

These might be completed earlier by advanced students & later by students who are struggling with the skills and ideas. Directions could be given orally rather than in writing—or in the student's first language—or spoken/written in the student's first language, then translated into English.

Incorporating Differentiation and Backward Design

Unit Topic: Telling Time **Designer(s):** K. Davis
Subject(s): Mathematics **Grade(s):** 1

Stage 3 – Learning Plan

Consider the W.H.E.R.E.T.O. elements:

Selected activities:

- Begin with a K-W-L on the question: "How do we measure time?"
- Build on student answers by showing various time measuring devices (e.g., sundial, watch, grandfather clock, egg timer).
- Present and discuss the essential question, "what might happen if we didn't have a way of telling time?"
- Clock Repairman - Have students pretend that they need to fix a broken clock by cutting & pasting the numbers back onto a paper cutout.
- T.V. Guide - Have students list the times of their favorite t.v. shows (for 1 day or 1 week) in sequential order. Then, chart how much time would be needed to watch the selected shows.
- Have students works in cooperative groups to plan the amount of time it would take for various activities (e.g., walk to the cafeteria, watch a movie, eat breakfast, etc.)
- Present a time-planning task similar to the culminating performance task. Guide students in completing the task.
- Provide direct instruction as needed on time telling skills.
- Ask students to think about, and share, ways that they plan their time.

Ideas for Differentiation

Pre-assess students for background knowledge, understanding, & skill. Provide advanced activities for students who do not need basic instruction (e.g. fixing the broken clock). Provide small group instructional time or center time for students who are lacking background knowledge & skill.

Advanced students might keep records of TV shows by category (cartoons, sports…) & compare TV time to time playing, going to sports, reading, etc.) They might write a story about their classmates on a day when there was no way to tell time (instead of taking part in the discussion), then share the story with the class as a follow-up.

Pre-teach important vocabulary to students with emergent language. Organize students in the cooperative groups by things they like to do (interests) & do time charts for the parts of those activities (e.g. steps in washing a dog, steps in cooking dinner with a grown-up). Have students work in varied strength groups to draw, act out and write about time sequences.

Understandings

(examples)

Arithmetic (numeration)

- Numbers are concepts that enable people to represent quantities, sequences, and rates.
- Different number systems can represent the same quantities (e.g., bases).

Art

- Innovative artists break with established traditions and techniques to better express what they see and feel.
- Available tools, techniques and resources influence artistic expression.
- Great art addresses universal themes of human existence.

Business/Marketing

- No business can successfully satisfy all consumers with the same product, so it must identify its target market.
- Patterns of consumption inform production and marketing decisions.

Dance

- Dance is a language of shape, space, timing and energy.
- Movement can communicate ideas and feelings.

Economics

- In a free-market economy, price is a function of supply and demand.
- Relative scarcity may lead to trade and economic interdependence or to conflict.

Foreign Language

- Studying other languages and cultures offers insights into our own.
- Meaning is conveyed through phrasing, intonation, and syntax. (Just because you can translate all the words doesn't mean you'll understand the speaker.)

Geography

- The topography, climate, and natural resources of a region influence the culture, economy, and life-style of its inhabitants.
- All maps distort the earth's representation of area, shape, distance, and/or direction.

Government

- Democratic governments must balance the rights of individuals with the common good.
- A written constitution sets forth the terms and limits of a government's power.
- Different political systems vary in their tolerance & encouragement of innovation.

Understandings

(more examples)

History

- History involves interpretation; historians can and do disagree.
- Historical interpretation is influenced by one's perspective (e.g., freedom fighters vs. terrorists).

Media/Technology

- Technological progress presents new possibilities and problems.
- Just because it is on the Internet or in a book, doesn't make it true.

Literature

- Novelists often provide insights about human experience through fiction.
- An effective story engages the reader by setting up questions – tensions, mystery, dilemmas, or uncertainty - about what will happen next.
- Everybody is entitled to an opinion about what a text means, but some interpretations are more supportable by the text than others.

Mathematics

- Sometimes the "correct" mathematical answer is not the best solution to "real-world" problems.
- Heuristics are strategies that can aid problem solving (e.g., breaking a complex problem into chunks, creating a visual representation, working backward from the desired result, guess and check)
- Statistical analysis and data display often reveal patterns that enable us to make predictions.

Music

- The silence is as important as the notes.
- Popular music has shifted from emphasizing melody and lyrics to emphasizing multi-layered rhythms.

Physical Education/Athletics

- Creating "space" away from the ball/puck spreads the defense and increases scoring opportunities (e.g., in basketball, soccer, football, hockey, lacrosse).
- Proper follow through increases accuracy when throwing (e.g., baseball, foul shot) and swinging (e.g., golf, tennis).

Reading/Language Arts

- Effective readers use specific strategies to help them better understand the text (e.g., using context clues, questioning the author, predicting, summarizing, etc.)
- Different types of texts (e.g., narrative, mystery, biography, persuasive, etc.) have different structures.

Essential Questions

(examples)

Arithmetic (numeration)
- What is a number? Why do we have numbers? What if we didn't have numbers?
- Can everything be quantified?

Arts (visual and performing)
- Where do artists get their ideas?
- How does art reflect, as well as shape, culture?

Culinary Arts
- When is it o.k. to deviate from the recipe?
- What makes a "safe" kitchen?

Dance
- How and what can we communicate through the "language" of dance?
- In what ways can motion evoke emotion?

Economics
- What determines value?
- Can macro-economics inform micro-economics (and vice-versa)?

Foreign Language
- What distinguishes a fluent foreigner from a native speaker?
- What can we learn about our own language and culture from studying another?

Geography
- What makes places unique and different?
- How does where we live influence how we live?

Government
- Who should decide?
- How should we balance the rights of individuals with the common good?

Health
- What is "healthful" living?
- How can a diet be healthy for one person and not another?

Essential Questions

(more examples)

History
- Whose "story" is it? Is history the story told by the "winners?"
- What can we learn from the past?

Literature
- What makes a "great" book?
- Can fiction reveal "truth"? Should a story teach you something?

Mathematics
- When is the "correct" answer not the best solution?
- What are the limits of mathematical representation/modeling?

Music
- How are sounds and silence organized in various musical forms?
- If practice makes perfect, what makes "perfect" practice?

Physical Education/Athletics
- Who is a "winner?"
- Is pain necessary for progress in athletics? ("No pain, no gain" – agree?)

Reading/Language Arts
- What makes a great story?
- How do you read "between the lines?"
- Why do we punctuate? What if we didn't have punctuation marks?

Science
- To what extent are science and common sense related?
- How are "form" and "function" related in biology?

Technology
- In what ways can technology enhance expression/communication?
  In what ways might technology hinder it?
- What are the pros and cons of technological progress?

Writing
- Why write?
- How do effective writers hook and hold their readers?
- What is a "complete" thought?

Concept Attainment – Essential Questions

Part 1 - Examine the following examples and non-examples to determine the common characteristics of Essential Questions. List these in the box below.

Essential Questions	Not Essential Questions
1. How are "form" and "function" related in biology?	7. How many legs does a spider have? How does an elephant use its trunk?
2. How do effective writers hook and hold their readers?	8. What is "foreshadowing"? Can you find an example of "foreshadowing'" in the story?
3. Who "wins" and who "loses" when technologies change?	9. What is the original meaning of the term, technology (from its Greek root, "techne")?
4. Should it be an axiom if it is not obvious?	10. By what axioms are we able to prove the Pythagorean theorem?
5. What distinguishes fluent language learners from native speakers?	11. What are some French colloquialisms?
6. How would life be different if we couldn't measure time?	12. How many minutes are in an hour? How many hours are in a day?

List common characteristics of the Essential Questions:

Part 2 - Use your list of characteristics as criteria to determine which of the following are Essential Questions. Check "yes" or "no" after each example.

	YES	*NO*
13. What is the relationship between popularity and greatness in literature?	___	___
14. When was the Magna Carta signed?	___	___
15. Crustaceans – what's up with that?	___	___
16. Which modern national leader will have the most disappointing legacy?	___	___
17. What's the pattern?	___	___
18. To what extent are common sense and science related?	___	___

Refine your list of key characteristics of Essential Questions:

"Unpacking" Content Standards

Established Goals: G

New Jersey LANGUAGE ARTS Standard 3.3 –

All students will write in clear, concise, organized language that varies in content and form for different audiences and purposes.

Stated or implied "big ideas" in the NOUNS and ADJECTIVES:

- content and form +
- audience and purpose +
- organized =

"form follows function"

Stated or implied "real-world performances" in the VERBS:

writing...
- different content and form
- for different audiences and purposes

Understanding(s):

Students will understand that...

- Audience and purpose (e.g., inform, entertain, persuade, provoke) influence literary techniques (e.g., organization, style, and word choice).
- Different genres have unique organizational patterns.

Essential Question(s)::

- What am I trying to achieve through my writing?
- For whom am I writing?
- How do great writers hook and hold their readers in different genres (e.g., mystery, essay, poem, historical fiction, etc.)?

Performance Task Ideas:

- Have students write for the same purpose (e.g., to inform or persuade) to different audiences, and explain the influence of audience on their style, word choice, etc.
- Have students write on the same content for two different genre (e.g., essay, poem, letter to the editor, etc.), and explain each genre's influence on organization, style, word choice, etc.

Tips for Using Essential Questions

1. Organize programs, courses, units of study, and lessons around the questions. Make the "content" answers to questions.

2. Select or design assessment tasks (up front) that are explicitly linked to the questions. The task(s) and performance standards should clarify what acceptable pursuit of, and answers to, the questions actually look like.

3. Use a reasonable number of questions per unit (2-5). Make less be more. Prioritize 'content' for students to make the work clearly focus on *a few key* questions.

4. Frame the questions in "kid language" as needed to make them more accessible. Edit the questions to make them as engaging and provocative as possible for the age-group.

5. Ensure that every child understands the questions and sees their value. Conduct a survey or informal check, as necessary, to ensure this.

6. Derive and design specific concrete exploratory activities and inquiries for each question.

7. Sequence the questions so they "naturally" lead from one to another.

8. Post the essential questions in classroom(s), and encourage students to organize notebooks around them to make clear their importance for study and note-taking.

9. Help students to personalize the questions. Have them share examples, personal stories, and hunches. Encourage them to bring in clippings and artifacts to help make the questions come alive.

10. Allot sufficient time for "unpacking" the questions — examining sub-questions and probing implications — mindful of student age, experience, and other instructional obligations. Use question/concept maps to show relatedness of questions.

11. Share your questions with other faculty to make planning and teaching for cross-subject matter coherence more likely. Ideas to promote overarching questions school-wide — ask teachers to post their questions in the faculty room and/or in department meeting/planning areas. Type and circulate questions in the faculty bulletin. Present and discuss at faculty and P.T.S.A. meetings.

Other tips: _____

_____

Sources of Assessment Evidence: Self Assessment

Directions: Use the following scale to rate your "level of use" of each of the following assessment tools (at the classroom, school or district level). What do the survey results suggest? What patterns do you notice? Are you collecting appropriate evidence for *all* the desired results, or only those that are easiest to test and grade? Is an important learning goal "falling through the cracks" because it is not being assessed?

4 = Frequent Use

3 = Use Sometimes

2 = Occasional Use

1 = Do Not Use

_____ 1. selected-response format (e.g., multiple-choice, true-false) quizzes and tests

_____ 2. written/oral responses to academic prompts (short-answer format)

_____ 3. performance assessment tasks, yielding:

____ extended written products (e.g., essays, lab reports)

____ visual products (e.g., Power Point show, mural)

____ oral performances (e.g., oral report, foreign language dialogues)

____ demonstrations (e.g., skill performance in physical education)

_____ 4. long-term, "authentic" projects (e.g., senior exhibition)

_____ 5. portfolios - collections of student work over time

_____ 6. reflective journals or learning logs

_____ 7. informal, on-going observations of students

_____ 8. formal observations of students using observable indicators or criterion list

_____ 9. interviews with students

_____10. student self-assessments

_____11. peer reviews and peer response groups

_____ Other: _____

Performance Task Examples

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

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

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

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

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

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

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

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

Tour Director *– (World Languages - Level 2)*

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

Remember to include a variety of *locations, directions*, and forms of *transportation* on your "trips." Keep sentences simple and narrate in the target language.

Spot Remover *– (Science, middle school)*

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

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

Creating Performance Tasks: Task Frames in Social Studies

Task 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 to reach a decision or pose a solution to a problem.	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 Mathematics

Task 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.

Creating Performance Tasks: Task Frames in Science

Task 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 to reach a decision or pose a solution to a problem.	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?

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 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 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)

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 Cornerstone Assessments Tasks: Idea Starters 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/argumentation) 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: _____	

Creating Performance Tasks: Task Frames in Health/Physical Education

Task 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 CREATIVE THINKING

Task 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 and PROBLEM SOLVING

Task 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: _____	

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:** _____	

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 _____

Succcss 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 using G.R.A.S.P.S.

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 foreign visitors (who speak English).

Situation:

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

Product/Performance and Purpose:

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

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

Possible STUDENT ROLES and AUDIENCES

KEY: ROLES = R and AUDIENCES = A

____ actor
____ advertiser
____ anthropologist
____ artist/illustrator
____ astronaut
____ author
____ biographer
____ board member
____ boss
____ boy/girl scout
____ businessperson
____ candidate
____ carpenter
____ cartoon character
____ cartoonist
____ caterer
____ celebrity
____ chairperson
____ chef
____ choreographer
____ CEO
____ coach
____ community members
____ composer
____ clients/customer
____ construction worker
____ dancer
____ designer
____ detective
____ doctor
____ editor
____ elected official
____ embassy staff
____ engineer
____ ethnographer
____ expert (in _____)
____ eye witness
____ family member
____ farmer
____ filmmaker
____ firefighter
____ forest ranger
____ friend
____ geographer
____ 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
____ nurse
____ nutritionist
____ panelist
____ parent
____ park ranger
____ pen pal
____ photographer
____ pilot
____ playwright
____ poet
____ policeman/ woman
____ pollster
____ 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
____ t.v./movie character
____ tutor
____ viewer
____ visitor
____ web designer
____ zoo keeper
Other: _____

Differentiation via Products

Differences in students' learning styles, interests and talents can be accomodated by differentiating **the product(s)** and/or **performance(s)** that they provide as evidence of their understanding and/or proficiency. The following lists offer possibilities.

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

Allowing Student Choice in Products

The following Tic-Tac-Toe Chart offers a practical technique for allowing appropriate student choice regarding the product(s) and/or performance(s). The teacher may structure the options while allowing students to choose from the various columns.

Product Tic-Tac-Toe Chart

ESSAY	*PODCAST*	*POSTER*
PODCAST	*FREE CHOICE*	*COMIC STRIP*
LETTER	*ROLE PLAY*	*INFOGRAPHIC*

Differentiation via Student Interests

Primary Grades (pre-K – 2)

- animals/pets
- cartoons
- characters (in books, on t.v., etc.)
- community helpers
- dinosaurs
- five senses
- holidays
- planets/outer space
- plants
- seasons
- sharks
- weather/snow
- zoo

Other:

- _____

Intermediate Grades (3 – 5)

- archaeology
- books/literature
- computers - games
- disasters
- famous people
- friends
- games
- geography
- movies
- mysteries
- outer space
- sports
- television/t.v. shows
- video games

Other:

- _____

Middle School (6 – 8)

- amusement parks
- cell phones
- clothing/fashion
- computers – games, e-mail, IM
- disasters
- friends
- games
- jobs/earning money
- music/musical groups
- movies
- science fiction
- shopping
- sports
- television/t.v. shows
- video games

Other: _____

High School (9 – 12)

- automobiles
- careers
- cell phones
- clothing/fashion
- colleges
- computers – games, e-mail, IM
- dating/romance
- friends
- music/musical groups
- jobs/earning money
- shopping
- sports
- travel
- vacations
- video games

Other: _____

Differentiation Variables

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

Student Choice – To what extent will students have choices regarding the following?

task topic task activities process for completing task
product(s)/performance(s) audience(s)

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

all necessary information/ resources provided other: _____

Performance Mode – How will students work?

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

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

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

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

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

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

no support some support, as needed extensive support

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

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

Assessment Task Blueprint

What understandings/goals will be assessed through this task? G

What criteria are implied in the standard(s)/understanding(s) *regardless* of the task specifics? What qualities must student work demonstrate to signify that standards were met?

Through what authentic performance task will students demonstrate understanding?

Task Description: T

What student products/performances will provide evidence of desired understandings?

By what criteria will student products/performances be evaluated?

Understanding criteria:

Product quality criteria:

Performance Task Blueprint

What content standard(s)/understanding(s) will be assessed through this task?

Students will demonstrate an understanding of a balanced diet.
Students will plan nutritional meals/snacks for themselves and others.

What criteria are implied in the standard(s)/understanding(s) regardless of the task specifics?
What qualities must student products/performances demonstrate to reveal understanding/proficiency?

- understanding of a balanced diet
- nutritionally sound meal plan

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

Task Overview (GRASPS)

Since we have been learning about nutrition, you have been asked to help other students your age learn about healthful eating. Your task is to prepare an illustrated brochure to help them understand what a "balanced diet" is. Present two examples of nutritionally-balanced meals and two that are unhealthy. Describe and show three potential health problems that might arise as a result of poor eating choices.

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

- illustrated brochure

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

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

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

- neat and effective illustrations
- correct spelling/grammar

Blueprint for Differentiating Tasks

What content standard(s)/understanding(s) will be assessed through this task?

Students will demonstrate an understanding of a balanced diet.
Students will plan nutritional meals/snacks for themselves and others.

What criteria are implied in the standard(s)/understanding(s) regardless of the task specifics?
What qualities must student products/performances demonstrate to reveal understanding/proficiency?

- understanding of a balanced diet
- nutritionally sound meal plan

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

Task 1 Overview (GRASPS)

Your task is to prepare a picture book for first graders to help them understand what a "balanced diet" is. Show two examples of nutritionally-balanced meals and two that are not healthy. Include pictures to show the children what might happen to someone who only ate "junk" foods instead of a balanced diet.

Task 2 Overview (GRASPS)

Your task is to produce a pamphlet for the community health clinic. (Audience = adults and teenagers.) Your brochure should contain a written explanation of sound nutrition and include two sample daily meal plans showing how they meet the USDA recommendations. Include a chart showing a breakdown of the fat, protein, carbohydrates, vitamins, minerals, and calories for each meal plan.

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

- picture book

- written pamphlet
- chart of nutritional values

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

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

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

- book is neat and attractive
- foods are accurately colored

- correct spelling/grammar
- accurate nutritional chart

Performance List for Graphic Display of Data

(elementary level)

Key Criteria	Points Possible	Self	Other	Teacher
1. The graph contains a title that tells what the data shows.		_____	_____	_____
2. All parts of the graph (units of measurement, rows, etc.) are correctly labelled.		_____	_____	_____
3. All data is accurately represented on the graph.		_____	_____	_____
4. The graph is neat and easy to read.		_____	_____	_____
Total		_____	_____	_____

Performance lists offer a practical means of judging student performance based upon identified criteria. A performance list consists of a set of criterion elements or traits and a rating scale. The rating scale is quite flexible, ranging from 3 to 100 points.

Teachers can assign points to the various elements, in order to "weight" certain elements over others (e.g., accuracy counts more than neatness) based on the relative importance given the achievement target. The lists may be configured to easily convert to conventional grades. For example, a teachers could assign point values and weights that add up to 25, 50 or 100 points, enabling a straightforward conversion to a district or school grading scale (e.g., 90-100 = A, 80-89 = B, and so on). When the lists are shared with students in advance, they provide a clear performance target, signaling to students what elements should be present in their work.

Despite these benefits, performance lists do not provided detailed descriptions of *performance levels*. Thus, despite identified criteria, different teachers using the same performance list may rate the same student's work quite differently.

Performance List for Writing Fiction

Primary Level

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

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

Holistic Rubric for Graphic Display of Data

3	All data is accurately represented on the graph. All parts of the graph (units of measurement, rows, etc.) are correctly labelled. The graph contains a title that clearly tells what the data shows. The graph is very neat and easy to read.
2	All data is accurately represented on the graph OR the graph contains minor errors. All parts of the graph are correctly labelled OR the graph contains minor inaccuracies. The graph contains a title that suggests what the data shows. The graph is generally neat and readable.
1	The data is inaccurately represented, contains major errors, OR is missing. Only some parts of the graph are correctly labelled OR labels are missing. The the title does not reflect what the data shows OR the title is missing. The graph is sloppy and difficult to read.

A holistic rubric provides an overall impression of a student's work. Holistic rubrics yield a *single* score or rating for a product or performance. Holistic rubrics are well suited to judging simple products or performances, such as a student's response to an open-ended test prompt. They provide a quick snapshot of overall quality or achievement, and are thus often used in large-scale assessment contexts (national, state or district levels) to evaluate a large number of student responses. Holistic rubrics are also effective for judging the "impact" of a product or performance (e.g., to what extent was the essay persuasive? did the play entertain?).

Despite these advantages, holistic rubrics have limitations. They do not provide a detailed analysis of the strengths and weaknesses of a product or performance. Since a single score is generally inadequate for conveying to students what they have done well and what they need to work on to improve, they are less effective at providing specific feedback to students.

A second problem with holistic rubrics relates to the interpretation and use of their scores. For instance, two students can receive the same score for vastly different reasons. Does an overall rating of "3" on a 4-point holistic writing rubric mean that a student has demonstrated strong idea development ("4") and weak use of conventions ("2"), or vice-versa? Without more specific feedback than a score or rating, it is difficult for the student to know exactly what to do to improve.

Analytic Rubric for Graphic Display of Data

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

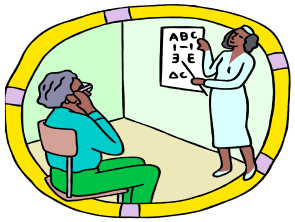
An analytic rubric divides a product or performance into distinct traits or dimensions and judges each separately. Since an analytic rubric rates each of the identified traits independently, a separate score is provided for each.

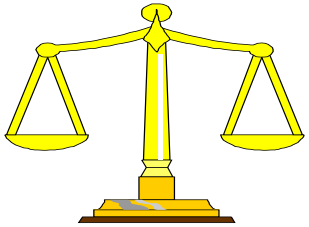
Analytic rubrics are better suited to judging complex performances (e.g., research process) involving several significant dimensions. As evaluation tools, they provide more specific information or feedback to students, parents and teachers about the strengths and weaknesses of a performance. Teachers can use the information provided by analytic evaluation to target instruction to particular areas of need. From an instructional perspective, analytic rubrics help students come to better understand the nature of quality work since they identify the important dimensions of a product or performance.

However, analytic rubrics are typically more time-consuming to learn and apply. Since there are several traits to be considered, analytic scoring may yield lower inter-rater reliability (degree of agreement among different judges) than holistic scoring. Thus, analytic scoring may be less desirable for use in large-scale assessment contexts, where speed and reliability are necessary.

Three Purposes for Classroom Assessments

Stage 3 – Assessment *for* Learning		Stage 2 – Assessment *of* Learning
Diagnostic (pre-)	**Formative**	**Evaluative**





assessment that *precedes* instruction to check students' prior knowledge and identify misconceptions, interests, and/or learning style preferences

Diagnostic assessments provide information to assist teacher planning and guide differentiated instruction.

Examples: pre-test, student survey, skills check, K-W-L

ongoing assessments that provide information to guide teaching and learning for improving learning and performance

Formative assessments include both formal and informal methods.

Examples: quiz, oral questioning, observation, draft work, "think aloud," dress rehearsal, portfolio review, misconception check

culminating assessments conducted at the end of a unit, course, or grade level to determine the degree of mastery or proficiency according to identified achievement targets

Summative assessments are evaluative in nature, generally resulting in a score or a grade.

Examples: test, performance task, final exam, culminating project or performance, work portfolio

Ideas for Diagnostic (Pre-) Assessment

The following pre-assessment techniques provide efficient diagnostic checks of student prior knowledge and misconceptions. This information guides any differentiated instruction/assessment that may be needed.

K-W-L

Prior to the introduction of a new topic or skill, ask students what they already **K**now (or think they know) about the topic or skill. These are recorded on a board or chart paper under the "K" column. (Sometimes, students make statements that are incorrect or reveal misconceptions.)

Secondly, ask them what they **W**ant to know (or what questions they have) about the topic/skill. These are recorded under the "W" column. (Their questions often reveal interests or "hooks" to the topic. In some cases, their questions reveal misconceptions that will need to be addressed.)

As the lesson or unit proceeds, **L**earnings are summarized and recorded in the "L" column as they occur. (This provides an opportunity to go back and correct any misconceptions that may have been initially recorded in the "K" column.)

Pre-Test *(non-graded)*

Give students a pre-test to check their prior knowledge of key facts and concepts. Use the results to plan instruction and selection of resources. (Make sure that students know that the results will not count toward final grades.

Skills Check *(non-graded)*

Have students demonstrate their proficiency with a targeted skill or process. It is helpful to have a proficiency checklist or developmental rubric to use in assessing the degree of skill competence. Students can then use the checklist or rubric for on-going self assessment.

Web/Concept Map

Ask students to create a web or concept map to show the elements or components of a topic or process. This technique is especially effective in revealing whether students have gaps in their knowledge and the extent to which they understand relationships among the elements.

Misconception Check

Present students with common errors or predictable misconceptions regarding a designated topic, concept, skill or process. See if they are able to identify the error or misconception and explain why it is erroneous or flawed.

The misconception check can also be presented in the form of a true-false quiz, where students must agree or disagree with statements or examples.

K-W-L-S Chart

An efficient and effective way to check for students' prior knowledge and interests is through the use of a K-W-L-S Chart. At the beginning of a unit or course, students are asked what they **K**now (or think they know) about the given topic. These items are recorded in the **K** column of the K-W-L-S Chart, posted on a board or flip chart. Then, they are asked to pose questions about the topic (i.e., what they **W**ant to know), and their questions are recorded in the **W** column. As the unit unfolds, the **L** column is used to summarize key things that the class has **L**earned about the topic. As the unit concudes, the class considers the implications of their learning (i.e., **S**o What?). The **S** column is used to list ways in which the new knowledge will be useful to them inside and outside of school.

Know	Want to Know	Learned	So What?

Formative Assessment – Whole Group

The following on-going assessment techniques can be used to obtain a quick "pulse check" of a whole class or group of students.

Hand Signals
Ask students to display a designated hand signal to indicate their understanding of a designated concept, principle, or process. For example,

1. I understand _____ and can explain it (e.g., thumbs up)
2. I do not yet understand _____ . (e.g., thumbs down)
3. I'm not completely sure about _____ . (e.g., wave hand)

White Boards
Have students record a response on a white board and hold it up. For example,

Prediction – What number should appear next in the sequence?
Agree/Disagree – Is this an example of in the sequence?

Student Response Systems
Use a cell phone app to have students record a response to a question or a prompt. The results can be tabulated on the teacher's computer to provide immediate feedback.

Misconception Check
Present students with common or predictable misconceptions about a designated concept, principle, or process. Ask them to agree or disagree. Student can respond using hand signals, white boards, SRSs, or on paper.

Anonymous Exit Card ("Ticket to Leave")
Periodically, distribute index cards and ask students to complete the cards at the conclusion of a class period, end of the week, etc. Examples of responses:

- What are the most important things you learned about ____?
- What do you understand about _____?
- What don't you understand yet? What questions do you have?

Scan the cards, looking for patterns (e.g., areas where many students have questions).

Observations
Carefully observe students as they work or respond to questions. Observe the work they produce. What areas of strength and weakness do you notice.

Formative Assessment – Individuals

The following on-going assessment techniques provide a quick check of the knowledge, skill levels, and degree of understanding of individual students. Of course, **oral questioning** and **observation** can be used to provide on-going assessment of individuals.

Exit Card ("Ticket to Leave")
Periodically, distribute index cards and ask students to complete the cards at the conclusion of a class period, end of the week, etc. Students must include their names.

Example #1: I.Q. Card
Side 1 – Based on our study of (unit topic), list a "big idea" that you understand in the form of a summary statement.
Side 2 – Identify something about (unit topic) that you do not yet fully understand (as a statement or a question).

Example #2: 3-2-1- summary
List 3 things that you learned about _____(topic or skill)_____.
List 2 examples or applications of _____.
Liat 1 question that you have about _____(topic or skill)_____.

Example #3: What's Working?
Side 1 – List the things that are helping you learn.
Side 2 – Identify things that have been difficult or are not working for you.

Weekly Letter
Have students write a letter to the teacher and parents summarizing what they have learned during the past week. Students are asked to reflect on their progress during the week and set a learning goal for the upcoming week.

Web/Concept Map
Ask students to create a web or concept map to show the elements or components of a topic or process. This technique reveals if students understand relationships among elements.

One-Minute Essay
Periodically, have students complete a brief "essay" summarizing what they think they understand about a given topic.

Question Box/Board
Establish a location (e.g., question box, bulletin board, e-mail address) where students may post questions about things that they do not understand. (This technique may be preferred by those students who are uncomfortable admitting publicly that they do not understand.)

Learner Feedback from "Exit Cards"

(example from middle school mathematics)

What works:	when you give a "real" example after teaching a concept
What doesn't:	when you give us 2 ways to solve the same problem - it's confusing!

What works:	when you give an example on the board and take the time to explain things.
What doesn't:	when you don't have time to explain, and when we can't ask anyone else questions if we are stuck on something

What works:	when you gives an example on the board, make helpful drawings and tell us how you are think ing when solving the problem
What doesn't:	making me do math in my head because I need to draw pictures or write out a problem to get it and solve it

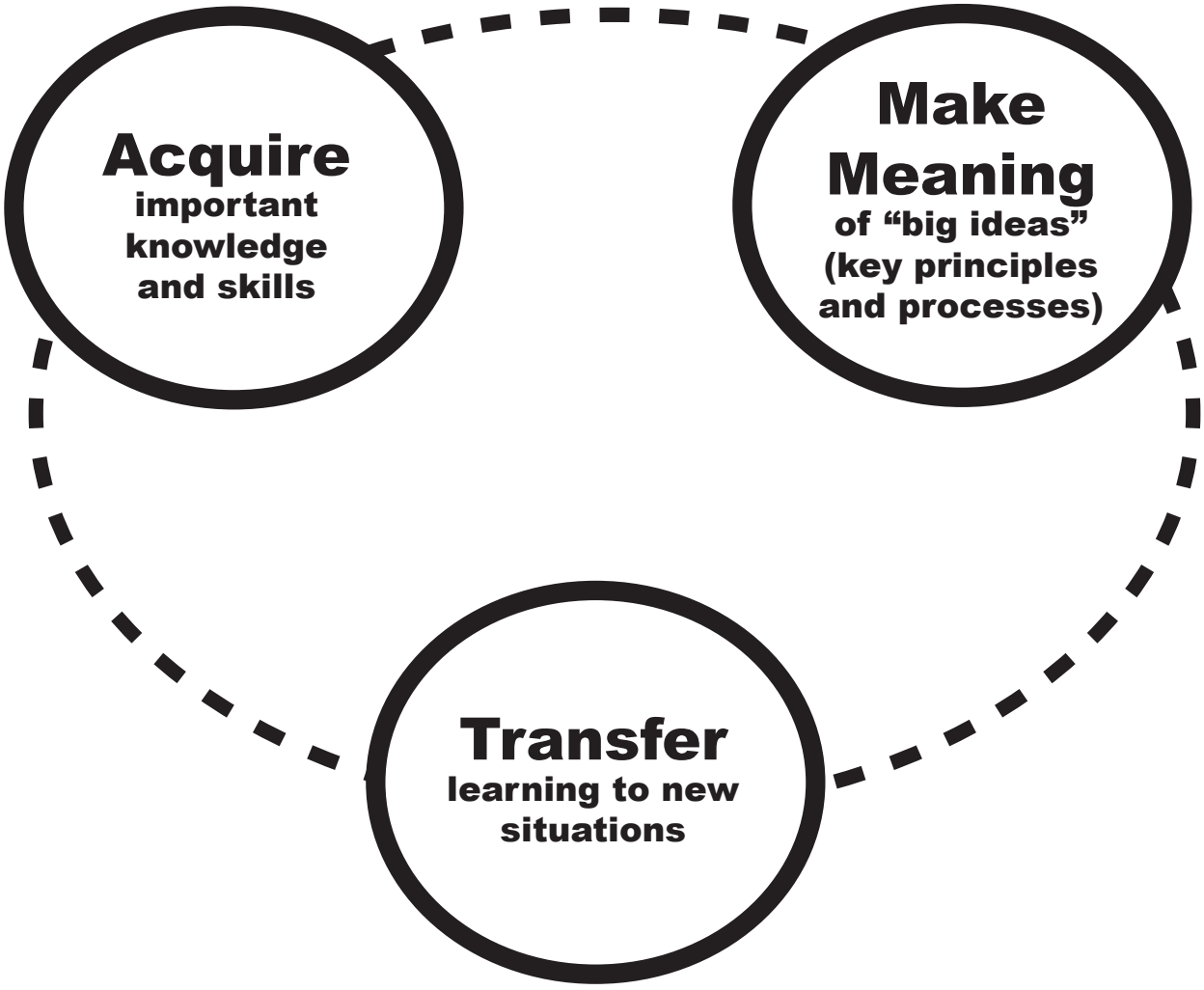
What works:	when we check our answers on problems in class and go over them
What doesn't:	when you get upset about our talking -- but it's often about math!

What works:	when you give good examples and answer our questions
What doesn't:	our textbook. Instructions are not always clear; too many of same kind of problem; answers in the back are not very helpful sometimes.

Three Interrelated Goals for Teaching

When planning instruction, we have found it useful to consider three distinct, yet interrelated, learning goals: 1) acquisition of new information and skill, 2) making meaning of that content (i.e., coming to understand), and 3) transfer of one's knowledge (i.e., applying one's learning to new situations).

These three categories link directly to elements identified in *Understanding by Design* and highlighted in the new version of the UbD planning Template. 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 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 then develop their instructional plans and lessons for helping learners acquire, make meaning and transfer their learning.



Adding Up the Facts

Use the following worksheet to look at a set of facts or data together. What inferences can you make or conclusions can you draw from "adding up the facts"?

Many pioneers, especially children, died from disease.

The pioneers had to grow, or hunt for, their food. They often went hungry.

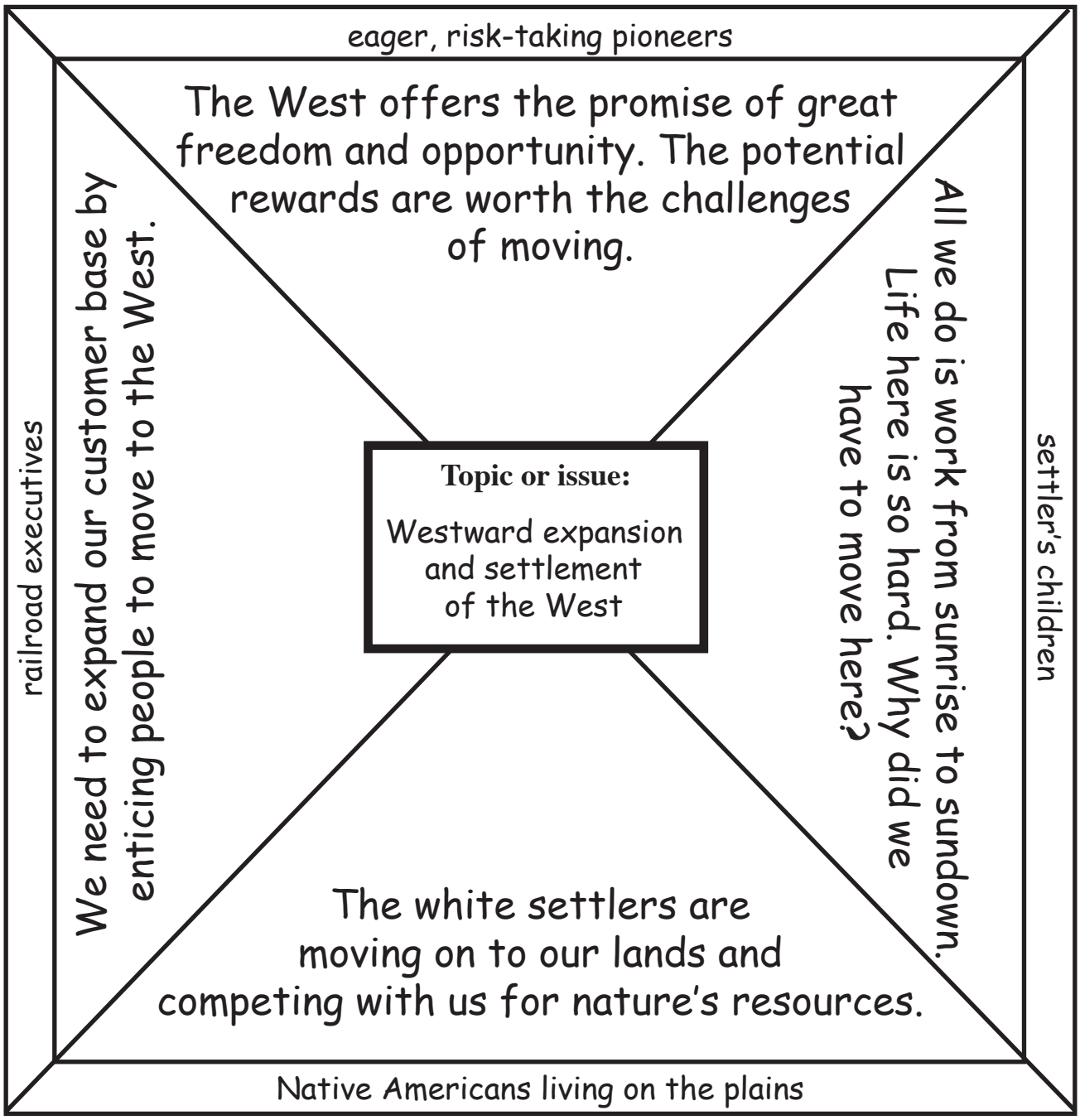
Much hard work was required to settle new land - clearing fields, constructing shelter, etc.

Settlers faced attacks by Native American tribes on whose lands they travelled or settled.

The pioneers faced many hardships in the settlement of the west.

Perspective Chart

Use the following chart to examine different perspectives on an issue or topic.



Story Map

A Story Map makes the basic elements of a story more tangible. This organizer helps students follow and summarize stories as they read. It also provides a structure to guide students as they create their own narratives.

Title _____

Setting _____

Characters _____ _____

_____ _____

Problem

Key Events

Event # 1 _____

Event # 2 _____

Event # 3 _____

Event # 4 _____

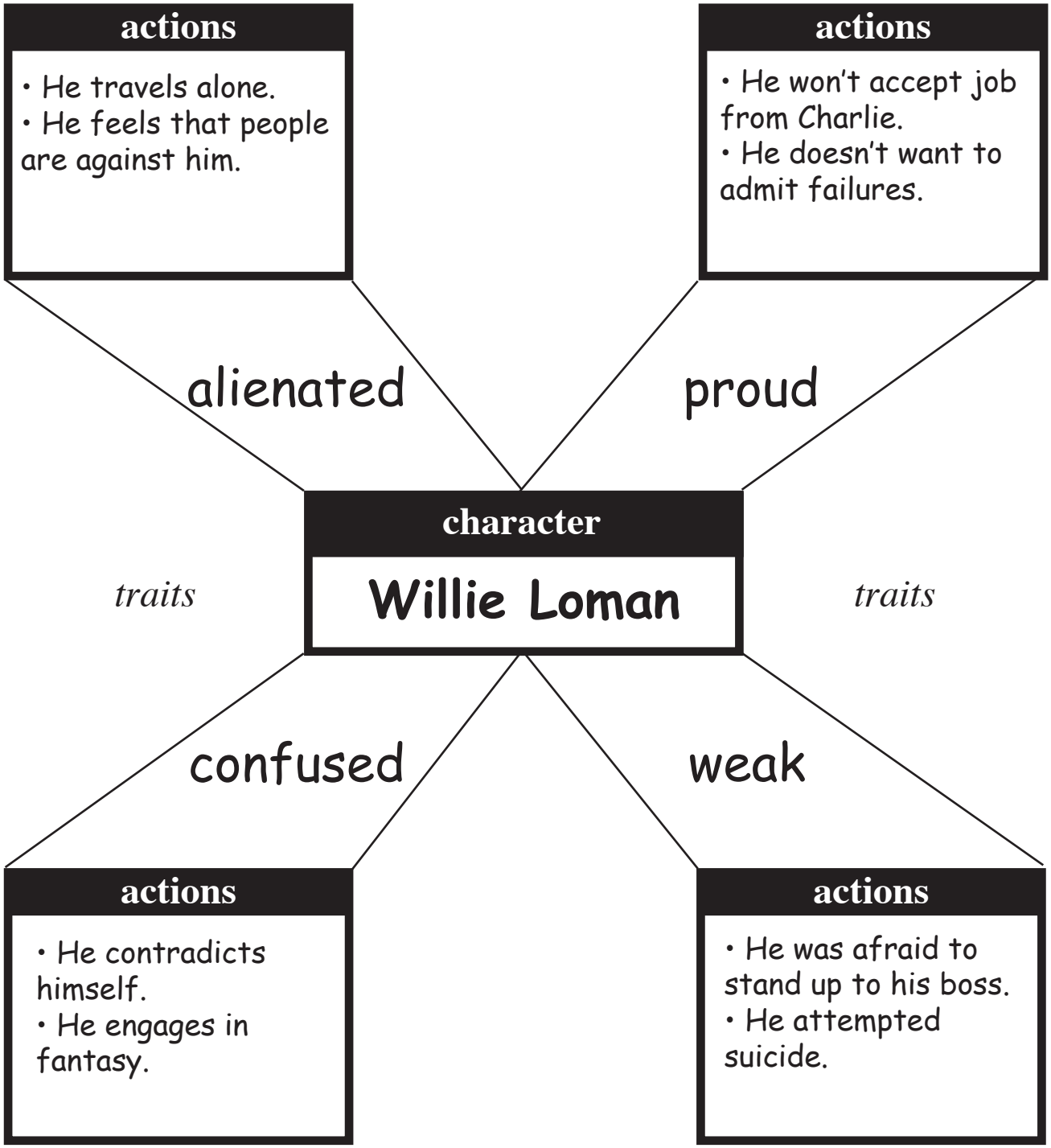
Event # 5 _____

Event # 6 _____

Resolution

Making Inferences about a Character

Use the following Character Trait map to help understand a character based on patterns of action or behavior.



"Big Idea" Table

Use the following organizer to help identify the "big idea(s)" based on specific facts and details.

"big idea"

"A Voyage to Lilliput", Book 1 of Gulliver's Travel's, satirizes political figures and situations in England during Jonathon Swifts' political career (1708-1715).

facts & examples			
Catholics vs. Protestants • There were senseless disputes over which end of an egg should be broken. • War has raged for "six and thirty moons."	**political persecution** • Gulliver fled to Blefescu after the Articles of Impeachment were filed against him. • Bolingbroke fled to France after threat of prison.	**Walpole's leadership** • The Flimnax leaders were chosen based on their skill in rope jumping. • Walpole gained control through bribery and corruption.	**English political process** • satirized through Lilliputian elections • Rope jumping and stick competitions – insignificant ceremonies which obscured the real issues.
source			
Gulliver's Travel's p. 60	Encyclopedia Brittanica Vol. 2, p. 1204	J. Swift: An Introductory Essay p. 134	J. Swift: An Introductory Essay p. 135

Graphic Organizers

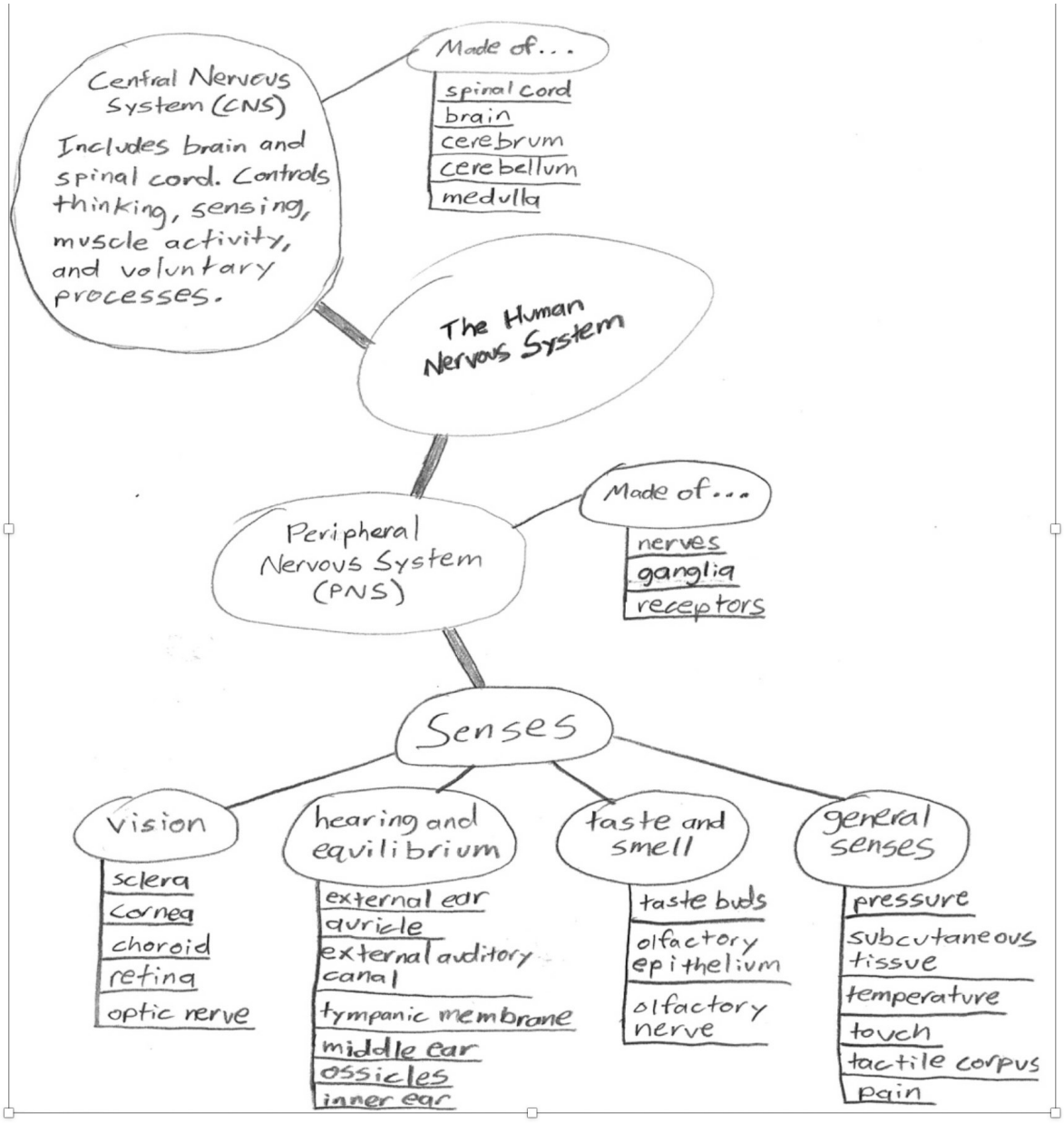
Here is an example of a pre-developed organizer, an Argument Table, used by college students to build and support an argument around an issue—*Should players under the age of 14 be allowed to play tackle football?* One position is presented below.

Argumentation Table

Claim	**Players under 14 years of age should not be allowed to play tackle football.**			
Reasoning	American football is one of the most popular sports for young athletes. In the United States, there are more than one million youth football players (ages 6 to 12 years) in Pop Warner leagues.	Tackle football exposes players to repeated blows to the head. The effects are cumulative and can lead to the development of chronic traumatic encephalopathy (CTE), a degenerative brain disease associated with depression, suicidal behavior, dementia and other symptoms.	Since the brains of younger players are still developing, they may be especially susceptible to the ill effects of repeated blows to the head suffered in practices and games.	Younger players can play "flag" football and learn the basics of the games while greatly reducing the chance of injuring their brains.
Evidence	Source: Sports & Fitness Industry Association	Research suggests that repetitive, sub-concussive hits contribute to the development of traumatic encephalopathy (CTE). Source: *Radiology* Journal	Players under the age of age of 12 showed, "increased odds for impairment in self-reported neuropsychiatric and executive function."	The American Academy of Pediatrics recommends the establishment of non-tackling football leagues.

Visual Mapping

Student-generated organizers – While established graphic organizers can have great value in supporting learning, students should be allowed, and encouraged, to create their own organizers for a variety of purposes, including note taking, reviewing and synthesizing information, symbolizing abstract concepts, and generating new ideas. By designing their own visual representations, learners are actively making meaning of new material. Here is an example of a students' web on the human nervous system.



Source: Tools for Classroom Instruction That Works, by H.F. Silver, C. Abla, A. L. Boutz, and M. J. Perini, 2018, Franklin Lakes, NJ: Silver Strong & Associates. © Thoughtful Education Press. Used with permission.

Comparison Diagram

Use the following diagram to help you compare two things according to identifed dimensions.

Dimensions for Comparison:	TUNDRA Unique Characteristics	Similar to Both	DESERT Unique Characteristics
CLIMATE	frigid temperatures	harsh, inhospitable	hot and dry
TOPOGRAPHY	perma frost	treeless plain	sand
VEGETATION		minimal (unable to survive)	
NATURAL RESOURCES		oil, natural gas	
POPULATION		few permanent residents, nomads	

Summarizing

4–2–1 Summary Chart

FOUR key ideas

When gold is discovered, people from around the world rush to California.

The population gets bigger and more diverse — but the native population drops.

New towns, businesses, roads, and schools are developed.

Mining for gold destroys the environment.

The TWO most important ideas

The population gets bigger and more diverse — but the native population drops.

The land is developed but also destroyed.

The ONE most important idea

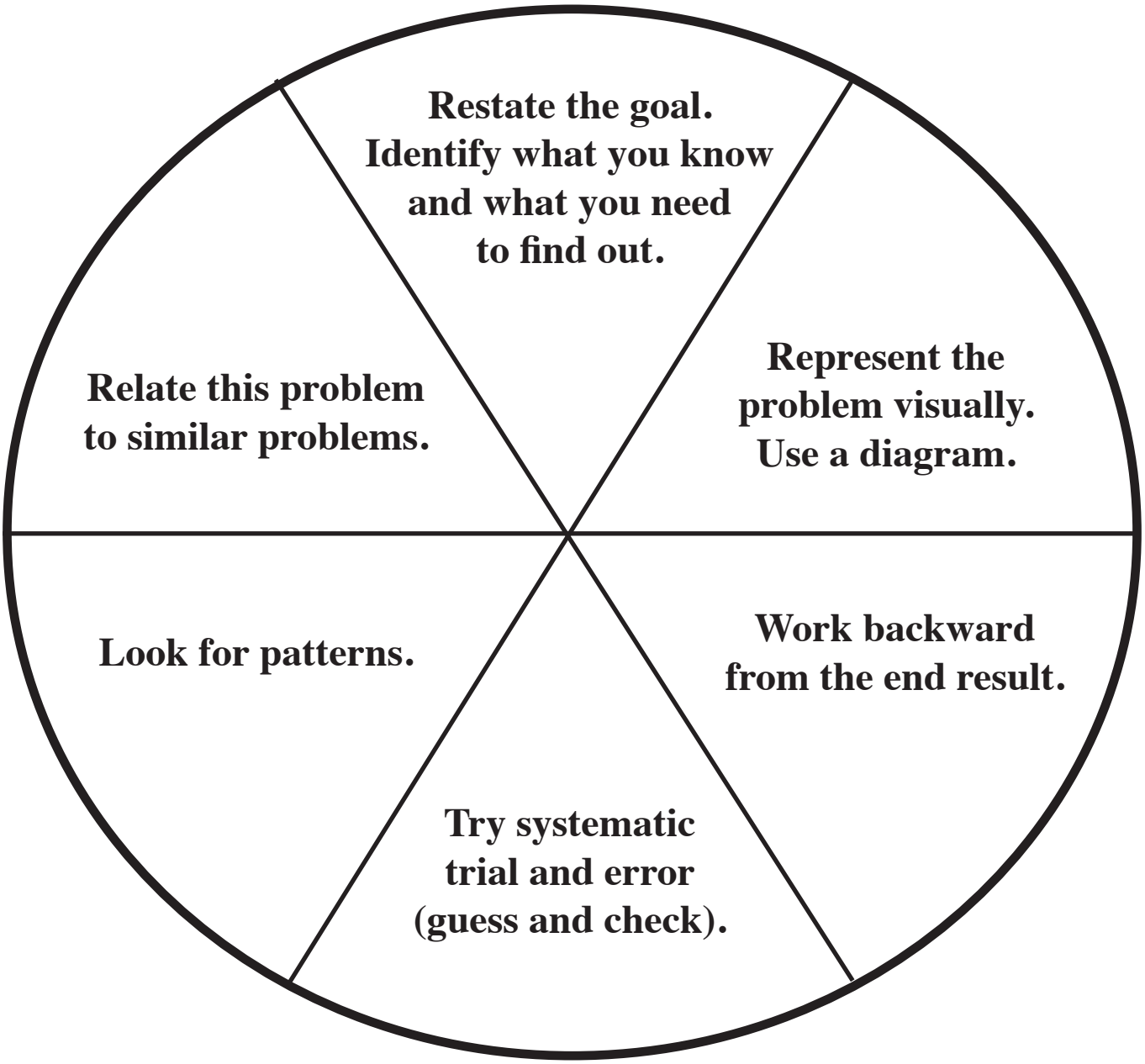
The Gold Rush changed the population and landscape of California.

Summary Paragraph: *What did I learn?*

The Gold Rush changed both the population and landscape of California. When gold was discovered at Sutter's Mill in 1848, people from the United States and around the world rushed to California. The overall population got larger and more diverse. But the native population dropped. Over 100,000 natives were killed or died from disease or starvation. The rush to California didn't just change the population. It changed the landscape, too. Towns, businesses, roads, and schools sprung up everywhere. And miners polluted and destroyed the environment. Overall, the Gold Rush changed California's land, people, and development in many different and lasting ways.

Problem-Solving Strategies Wheel

Effective problem solvers use the following strategies when they're stuck.



Encouraging Self-Assessment, Reflection and Goal Setting

- What do you really understand about _____?
- What questions/uncertainties do you still have about _____?
- What was most effective in _____?
- What was least effective in _____?
- How could you improve_____?
- What would you do differently next time?
- What are you most proud of?
- What are you most disappointed in?
- How difficult was _____ for you?
- What are your strengths in _____ ?
- What are your deficiencies in _____ ?
- How does your preferred learning style influence _____ ?
- What grade/score do you deserve? Why?
- How does what you've learned connect to other learnings?
- How has what you've learned changed your thinking?
- How does what you've learned relate to the present and future?

Analytic Rubric for Graphic Display of Data

Name: _____ Date: _____ _____

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

Goals/Actions:

Performance List for Cooperative Learning

Primary Level

	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?			

What will you try to do better the next time you work in a group?

Ways and Means of Differentiating Instruction

Pre-Assessment:

• *How will you diagnose students prior knowledge and skill levels?*

K-W-L chart	misconceptions check
pre-test	Frayer diagram
skills check	Other: _____

Differentiation Plan:

• *Based on pre- and ongoing assessments, what and how will you differentiate?*

Content

Use varied materials *(e.g., texts for different reading levels, audio-visuals)*.

Use varied teaching methods/strategies *(e.g., demonstration, visuals, models.)*

Target instruction to readiness levels *(e.g., small group skill teaching)*.

Provide scaffolded support *(e.g., graphic organizers, step-by-step process guide)*

Adjust instruction based on feedback from on-going assessments.

Other: _____

Process

Use flexible groupings *based on skill levels, interests, learning preferences*.

Use varied teaching methods/strategies *(e.g., tiering, complex instruction)*.

Create learning stations *(e.g., self-paced centers, computer-based tutorials)*.

Establish learning contracts *(e.g., self-directed practice, independent project)*.

Allow student self assessments and goal setting (based on established criteria).

Other: _____

Product

Provide tiered assignments/tasks using the G.R.A.S.P.S. elements.

Allow appropriate student choices of products.

Other: _____

Strategies for Differentiating Content

READINESS

___ Provide texts at varied reading levels and in students' primary languages.
___ Provide supplementary materials at varied reading levels & in student languages.
___ Provide audiotaped materials.
___ Use videos and demonstrations to supplement and support explanations & lectures.
___ Use texts with key portions highlighted.
___ Provide organizers to guide note-taking.
___ Provide key vocabulary lists for reference.
___ Use reading buddies or partners to work with text materials.
___ Use flexible groupings to address knowledge and skill gaps.

LEARNING PROFILE

___ Present information orally, visually, and in writing.
___ Allow "kinesthetic" learners options for "hands-on" work, role plays, etc.
___ Use applications, examples, and illustrations from various "intelligences."
___ Use materials, applications, examples, illustrations from both genders and a range of cultures/communities.
___ Use materials that connect content to student's cultures.
___ Use both "whole-to-part" and "part-to-whole" instruction.
___ Demonstrate ideas in addition to talking about them.
___ Use wait time to allow for student reflection.

INTERESTS

___ Provide interest centers to encourage further exploration of topics.
___ Provide a wide range of materials related to student interests and cultures.
___ Use student questions and student "experts" to guide lectures, materials' selection, and assignments.

Other: _____

Strategies for Differentiating Process & Product

READINESS

___ Use tiered activities (activities at different levels of difficulty, but focused on the same learning goals).

___ Provide detailed and highly structured task directions for learners who need it, while leaving the task more open for the more capable and independent students.

___ Provide resource materials at varied levels of readability and sophistication.

___ Provide teacher led mini-workshops on needed skills at varied levels of complexity based on student needs.

___ Provide tailored homework assignments based on readiness.

___ Provide materials in the primary language of second-language learners.

LEARNING PREFERENCES

___ Allow multiple options for how students express their learning (i.e., varied products and performances to allow learners to work to their strengths).

___ Balance competitive, collegial, and independent work arrangements.

___ Allow students to have choices regarding their preferred working mode. (e.g., visually, orally, kinesthetically, in writing, creative, practical, analytical).

INTERESTS

___ Establish interest-based work groups and discussion groups.

___ Use both like-interest and mixed-interest work groups.

___ Use the Jigsaw cooperative strategy to allow students to specialize in aspects of a topic they find interesting.

___ Allow students to propose interest-based projects and independent studies (related to the content being learned).

___ Develop activities that seek multiple perspectives on topics and issues.

Other: _____

Differentiating Instruction and Assessment

In some cases, you may need to modify an assignment or performance task to support certain students. The following lists provide general and subject-specific suggestions.

General

Notes

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

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

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

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

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

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

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

__ Provide large print materials for visually-impaired students.

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

Differentiating Instruction and Assessment

Notes

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

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

___ Provide periodic breaks.

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

___ Structure cooperative groups to maximize student success.

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

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

___ Ask specific questions to guide the students' reading.

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

___ Assign reading in advance to give students an opportunity to preview material. This will increase opportunities for students to be more actively involved during class activities.

___ Use a colored highlighter to mark important ideas, significant names, and terms.

Differentiating Instruction and Assessment

Reading

Notes

___ Select simplified reading material on the same topic.

___ Ask specific questions to guide the students' reading.

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

___ Assign reading in advance to give students an opportunity to preview material. This will increase opportunities for students to be more actively involved during class activities.

___ Use a colored highlighter to mark important ideas, significant names, and terms.

___ Prepare tape-recorded text segments to provide overviews and summaries.

___ Encourage students to formulate questions and make and validate predictions while reading.

___ Use mental or visual imagery to enhance the student's ability to recall information.

___ Teach students cues (e.g., headings, captions, differentiated print, introductory and summary paragraphs) for recognizing features of expository text structure.

___ Provide assistance in organizing information (e.g., use different colored file folders for different subjects).

___ Encourage students to rehearse important information read by retelling, paraphrasing, or summarizing.

___ Check for understanding after reading.

Differentiating Instruction and Assessment

Notes

___ Prepare recorded text segments to provide overviews and summaries.

___ Encourage students to formulate questions and make and validate predictions while reading.

___ Use mental or visual imagery to enhance the student's ability to recall information.

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___ Provide assistance in organizing information.

___ Encourage students to rehearse important information read by retelling, paraphrasing, or summarizing.

___ Check for understanding after reading.

Writing

___ Keep directions short and simple. Condense lengthy written directions by writing them in brief steps.

___ Give students the opportunity to talk about their ideas before writing.

___ Encourage students to select the method of writing (cursive or manuscript) that is most comfortable for them.

___ Brainstorm vocabulary that could be incorporated in written work.

___ Reduce the amount of written work. Have students dictate some responses orally.

Differentiating Instruction and Assessment

Notes

Writing

___ Keep directions short and simple. Condense lengthy written directions by writing them in brief steps.

___ Give students the opportunity to talk about their ideas before writing.

___ Encourage students to select the method of writing (cursive or manuscript) that is most comfortable for them.

___ Brainstorm vocabulary that could be incorporated in written work.

___ Reduce the amount of written work. Have students dictate some responses orally.

___ Permit students to include pictures, drawings, and diagrams as part of their written products.

___ Allow students to dictate into a cell phone recorder.

___ Allow students to list components/concepts, rather than write complete paragraphs.

___ Provide assistance with organizing ideas and information (e.g., graphic organizers, mapping software).

___ Use peer support for generating and brainstorming ideas during the prewriting and revision stages of writing.

___ Structure opportunities for students to verbalize (prewriting) on a one-to-one basis and in small groups.

___ Provide a proofreading checklist.

Differentiating Instruction and Assessment

Notes

Mathematics/Science

___ Use concrete objects and manipulatives to teach abstract concepts (e.g., weight, width, energy, shape, dimension, force).

___ Provide students with a list of steps necessary to complete an activity or the entire task.

___ Teach and model problem-solving strategies (e.g., pictorial representation, tallying, charting, simplifying).

___ Post a basic problem-solving sequence chart to post in the room. For example:

1. Read the problem.
2. Identify the key words.
3. Identify the operation.
4. Write the number sentence or equation.
5. Solve the problem.
6. Check your work.

__ Check students' understandings of key vocabulary and skills.

___ Have students restate the problem/task in their own words.

___ Assist students in breaking complex problems/tasks into specific steps or sub-parts.

___ Use color coding to help students distinguish math/science symbols and operations/processes.

___ Have students verbalize steps as they work in order to help them monitor their progress and identify errors.

Challenging High Ability Learners

In some cases, you may need to modify the curriculum activities or performance tasks to provide greater challenge for high ability or high achieving students. The following lists provide general suggestions for enriching learning activites and assessment tasks for the highly able.

Notes

___ Provide extension activities and assignments to students who have demonstrated mastery of the basic curriculum mateial.

___ Provide more sophisticated resources (e.g., texts, primary sources, websites) on the same topic.

___ Use Socratic questioning to push students' thinking (e.g., play Devil's advocate) when exploring essential questions and challenging tasks.

___ Present more open-ended and authentic tasks or problems with minimal cues or scaffolds. Encourage high-achievers to use creative, "out-of-the-box thinking" when tackling challenging tasks.

___ Use the GRASPS format to adjust student Role, Audience, Situation, and Products/Performances to provide greater challenge.

___ Encourage students to explore topics, issues and problems through the six facets of understanding.

___ Allow gifted learners to propose and conduct independent or small-group inquiry/research projects.

___ Allow student's appropriate choices regarding content, process and product/performance.

___ Provide self-paced, contract-based learning options for high achievers.

Some Questions to Consider When Planning a UbD Unit with Differentiation

by Dr. Carol Ann Tomlinson

Stage 1—Planning Desired Results for Flexibility

What are the nature and experiences of the students who will likely be in the class that will study this unit (culture, language, economics, background knowledge, range of readiness, interests, modes of learning, other factors that impact learning)?
What precursor knowledge & skills am I assuming students will have when the unit begins?
In what ways might I word essential questions and essential understandings to tap students' experiences and interests?
Which big ideas will likely have the most relevance for them?
How can I use the ideas to build community in the classroom?
How can I connect the essential content with students' lives and experiences?

Stage 2—Planning Assessment Evidence for Flexibility

How can I plan performance assessment options that will connect with a variety of student backgrounds, interests, and experiences?
Might some students lack contexts for assessments I am planning?
Will I need to build in options for oral directions, reading support, translation of student responses from a student's first language into English, support with writing, modes of expressing a response other than prose?
Will some students need a more complex version of the assessment in order to be appropriately challenged?

Stage 3—Planning Lessons for Flexibility

What will my pre-assessment(s) be? How will I pre-assess for readiness? ... interest? ... learning profile?
When will I give the pre-assessments? How will I use results?
How will I help students understand their various entry points into the unit?
How will I help them own and contribute to their success in the unit?
When will I teach prerequisite knowledge to students who lack it?
When do I need to build in time for: additional practice for students who need it?

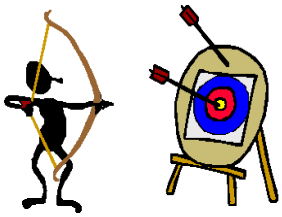
Some Questions to Consider When Planning a UbD Unit with Differentiation (continued)

by Dr. Carol Ann Tomlinson

In what varied ways might I present information to students to enhance the likelihood that each student benefits from my presentations? What range and types of resources can I use to ensure that all students have access to important information and to content that taps into their interests and strengths?
Which instructional strategies will I build in to student work to ensure that the work makes room for varied student strengths and needs?
How will I talk with students about the work they do in a way that builds a sense of community and collegiality?

Stage 3—Revising Lesson Plans (Once the Kids Show Up)
Given the desired results (essential knowledge, understanding, and skill) and these students that I'm getting to know better each day through interaction and formative assessment, how do I focus, revise, and personalize my plans to address students' varied readiness levels, interests, learning profiles, languages, and cultures?
Which students who need help with reading and writing? With prerequisite knowledge? With academic vocabulary?
Are there students who are more advanced than I had anticipated? How do I ensure their growth?
Do I need to extend or refine the resources I will use? My presentation modes?
Who will be in small group meetings with me this week? For what purposes?
When can I find time for individual conferences, goal setting, reflection?
How am I doing with implementing flexible grouping? Establishing classroom routines? Building community? Getting to know students better? Listening to them? Learning from them?
Who needs which assignments at what times in the unit?
Do I need to add tiers to tiered tasks? ... other options for exploring or expressing knowledge? ... additional scaffolding to support success?

Taking Action



Directions: *In light of this workshop, what should I (we)...*

start doing: _____

_____

_____

_____

stop doing: _____

_____

_____

_____

do less of: _____

_____

_____

_____

do more of: _____

_____

_____

_____