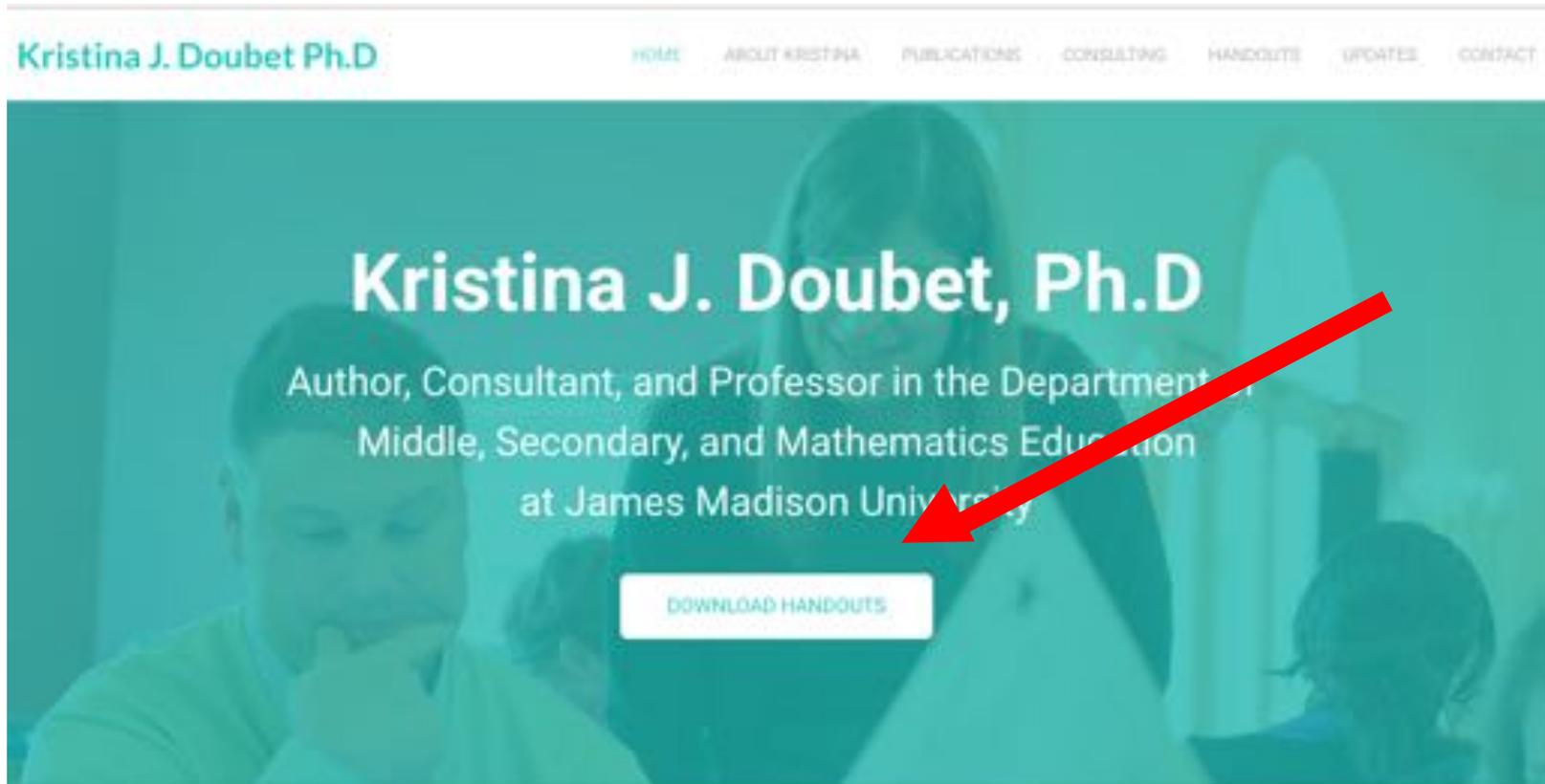


# DESIGNING HIGH-QUALITY UNITS AND ASSESSMENTS



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Click on “Download Handouts”

# Consider the following...

*What constitutes effective “design”?*



- Think individually about this question. Consider any kind of design you'd like. Jot down your thoughts.
- Share in pairs or trios first; then, make a master “table” list.
- Be ready to share what's on your list with the larger group.

# What constitutes effective “Design”?

- Serves the purpose for which it was designed
- Is appealing/enjoyable
- Is efficient
- Has multiple facets/entry points
- Takes advantage of resources/surroundings
- Meets the needs/tastes of target audience



# Performance Task Investigation

- Go to <https://padlet.com/DoubetKJ/PTs>
- Examine the examples on that site. Take your time. Go “wide” first.... Then choose a **few examples** to examine in more **depth**.
- Which tasks are designed effectively? Why? Which are best suited for your students? Why?
- What **promise** might your chosen tasks have for engaging students in meaningful learning? What **challenges**?



# Stages of UBD



**What transfer should students achieve?**

What is evidence that they can transfer?

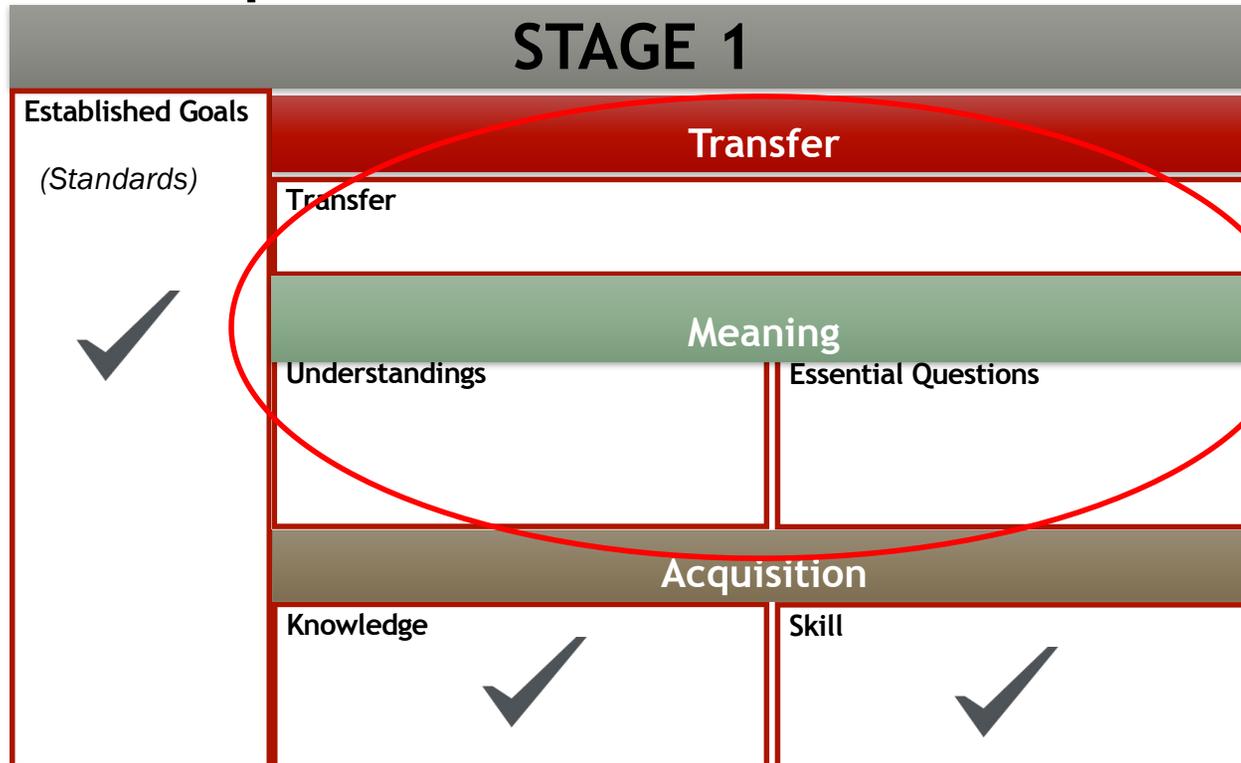
What learning will help lead them to the ability to transfer it?

Planning our destination in advance – in terms of transfer, meaning, acquisition, and production

## Stage 1: Learning Goals



# The Template: Desired Results



# How People Learn



- *Brain research tells us that teaching for “**coverage**”- or memorization - is like pumping water uphill: it takes enormous effort, and once the source is shut off, it reverses.*
- *In their book *Understanding by Design*, Grant Wiggins and Jay McTighe discuss the importance of focusing on **uncovering** rather than **covering** material to promote transfer and retention of learning*

# According to Wiggins and McTighe

## Coverage

- “I taught it but they didn’t learn it”
- Surface level/superficial
- Little depth
- Facts without connected thread of meaning
- Rationale – *“I do it because it’s what the social studies standards dictate, not because it will make meaningful sense to the students.”*

## Uncoverage

- Helping make an idea real or accessible
- Ideas and not just facts
- Finding something important amongst the facts
- Rationale – *“I organized my content so that students could investigate what history is all about; the recurring themes that make history so important to learn.”*

# Uncoverage Leads to TRANSFER



## Transfer of Learning is:



- What one does to express deep levels of understanding across a variety of settings. For example...
  - *...can students apply a problem solving strategy to a unique situation?*
  - *...can students write for an intended audience, regardless of the audience?*
  - *...can students design experiments to test a variety of hypotheses?*
  - *...can students evaluate the credibility of a secondary source across different time periods?*
- *We can't transfer if we are only "familiar" with content.*

## Answer the following math problem:

- There are 295 students in the school. School buses hold 25 students. How many school buses are needed to fit all the students?



Which of these students is ready for transfer?  
How do you know?



# What is Transfer?

## Transfer is Not...

- ✓ Simple recall
- ✓ Relying exclusively on mnemonics or rules
- ✓ Repeating knowledge in the same or similar context
- ✓ Repeating the same type of exercise over and over
- ✓ REPEATING learning

## Transfer IS...

- ✓ Higher order thinking
- ✓ Being able to articulate the WHY behind decisions and solutions
- ✓ Effectively applying and adapting prior learning to novel and increasingly complex situations
- ✓ Using understanding to evaluate or create something new
- ✓ TRANSFORMING learning

## What do you Think?

- ✓ Return to the task you examined earlier.
- ✓ Does it ask students to transfer? Explain. How do you know?
- ✓ Imagine how the task's creators achieved this? Where did they begin?



## Transfer Goals:

- What one does to express deep levels of understanding across a variety of settings. For example...
  - ...can students apply a problem solving strategy to a unique situation?
  - ...can students write for an intended audience, regardless of the audience?
  - ...can students design experiments to test a variety of hypotheses?
  - ...can students evaluate the credibility of a secondary source across different time periods?
- *We can't transfer if we are only "familiar" with content.*



## Sample Transfer Goals (by content):

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

### ■ Math:

- *Use equations and real data from \_\_\_\_\_ to determine \_\_\_\_\_.*
- *Model real world phenomena using \_\_\_\_\_.*
- *Justify a method of problem-solving.*

### ■ Science:

- *Design an experiment to test a hypothesis.*
- *Analyze [data point] to determine its location within [cycle], and to predict its next possible transformation within that [cycle].*
- *Hypothesize the effect of a \_\_\_\_\_ on a \_\_\_\_\_.*

### ■ Social Studies:

- *Analyze primary and secondary sources and interpret the interdependent relationship between the \_\_\_\_\_ and \_\_\_\_\_ at [this period in history].*
- *Construct a persuasive argument based on available historical evidence*
- *Evaluate how beliefs shape peoples' actions*

# Sample Transfer Goals (w/ specifics):

## ■ Math:

- Use linear equations and real data from experiments to determine the price point for maximum profits.
- Model real world phenomena using linear and quadratic functions.
- Justify a method of problem-solving.

## ■ Science:

- Design an experiment to test a hypothesis.
- Analyze any rock to determine its location within the rock cycle, and to predict its next possible transformation within the rock cycle.
- Hypothesize the effect of a limiting factor on a population.

## ■ Social Studies

- Analyze primary and secondary sources and interpret the interdependent relationship between the economy and social life at the start of the Great Depression.
- Evaluate how beliefs shape peoples' actions
- Construct a persuasive argument based on available historical evidence (ELA)

## Sample Transfer Goals (by content):

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

### ■ English Language Arts:

- *Depict the impact the text's \_\_\_\_\_ has on its \_\_\_\_\_.*
- *Evaluate the influence of \_\_\_\_\_ on the perception of controversial evidence.*
- *Create written work which utilizes \_\_\_\_\_ to enhance meaning and reflect author's purpose.*
- *Construct a persuasive argument based on \_\_\_\_\_ evidence.*
- *Effectively express or defend a perspective on \_\_\_\_\_ through writing.*
- *Effectively communicate with diverse audiences under unique circumstances exhibiting appropriate cultural norms.*

## Sample Transfer Goals (w/ specifics):

### ■ English Language Arts:

- *Depict the impact foil characters have on the narrative structure.*
- *Evaluate the influence of bias on the perception of controversial issues.*
- *Create written work which utilizes sound and style to enhance meaning and reflect author's purpose.*
- *Construct a persuasive argument based on [textual, historical, empirical] evidence.*
- *Effectively express or defend a perspective on real-world issues through writing.*
- *Effectively communicate with diverse audiences under unique circumstances exhibiting appropriate cultural norms*

**STEM:**

*Students will be able to independently use their learning to:*

<b>Math</b>	<b>Science</b>
<p><b>M1:</b> Make meaning of and take risks to persevere through complex mathematical problems utilizing strategic thinking and reasoning.</p> <p><b>M2:</b> Effectively communicate mathematical reasoning by developing viable arguments and constructively critiquing the reasoning of others.</p> <p><b>M3:</b> Fluently apply appropriate skills, processes, and tools in new and authentic situations.</p> <p><b>M4:</b> Make use of structure and/or repeated reasoning to quantify, compare, represent and model mathematics while attending to precision.</p>	<p><b>S1:</b> Select and evaluate reliable sources of information to address real world issues.</p> <p><b>S2:</b> Use critical thinking, inquiry and modeling to analyze ideas and phenomena to solve problems.</p> <p><b>S3:</b> Design and conduct an authentic scientific investigation in order to collect and analyze data.</p> <p><b>S4:</b> Communicate the results of an investigation using claim, evidence, and reasoning.</p>
<b>PE/Health</b>	<b>CTE</b>
<p><b>PEH1:</b> Employ behaviors that promote a healthy lifestyle.</p> <p><b>PEH2:</b> Model proper etiquette during a game/activity.</p> <p><b>PEH3:</b> Develop and modify strategies within parameters of traditional and nontraditional games.</p> <p><b>PEH4:</b> Demonstrate mature skill sets appropriate for games and sports.</p>	<p><b>CTE1:</b> Analyze and resolve conflicts to work cooperatively within a professional setting.</p> <p><b>CTE2:</b> Explore and determine a clear and viable career or educational pathway to meet desired professional goals.</p> <p><b>CTE3:</b> Understand and utilize current professional technology to enhance productivity.</p> <p><b>CTE4:</b> Develop and evaluate strategies to solve real world problems by using appropriate research and brainstorming methods to effectively assess and design solutions.</p> <p><b>CTE5:</b> Communicate effectively based on purpose, task, and audience using appropriate content specific vocabulary.</p>

## HUMANITIES

*Students will be able to independently use their learning to:*

### English/Language Arts

**ELA1:** Evaluate diverse perspectives constructively, critically, and respectfully.

**ELA2:** Read, comprehend, and analyze increasingly complex texts and media produced for various audiences and purposes.

**ELA3:** Engage in research and inquiry to analyze, integrate, and present information, to investigate claims, and to solve problems.

**ELA4:** Produce effective writing in which the development, organization, and style are appropriate for various audiences and purposes.

**ELA5:** Challenge, defend, and/or qualify ideas effectively for various audiences and purposes through writing and discussion.

### Social Studies

**SS1:** Formulate investigations using multiple sources of information to address a question, form an opinion, or to solve a problem.

**SS2:** Apply the relevance of historical lessons to a given situation, problem, or challenge.

**SS3:** Apply knowledge of political and social structures to actively participate as an informed global citizen.

**SS4:** Communicate and support ideas effectively to address a particular audience and purpose.

### Fine Arts

**FA1:** Analyze structure and context of various artistic works.

**FA2:** Apply criteria to evaluate and interpret a variety of artistic works.

**FA3:** Use societal, cultural, and historical contexts to develop appropriate interpretations of various artistic works.

**FA4:** Understand and apply content specific vocabulary and notation of each artistic discipline.

**FA5:** Utilize artistic skills to perform or create expressively with appropriate interpretation and technical accuracy, and in a manner appropriate to the audience and context that relates to personal experiences and emotions.

### Library Media

**LM1:** Inquire, think critically, and gain knowledge utilizing a variety of resources and tools.

**LM2:** Draw conclusions, make informed decisions, apply knowledge to new situations and create new knowledge utilizing a variety of resources and tools.

**LM3:** Share knowledge and participate ethically and productively as members of society.

**LM4:** Pursue personal and aesthetic growth through reading, listening and viewing materials in a variety of formats.

# Transfer Goals for Grades K-12: All Content Areas

~Northwest Hendricks  
School Corporation,  
Lizton, IN~

1. Fluently read, comprehend, and analyze complex, grade-level text and media for various purposes.
2. Write effectively to address various audiences and purposes.
3. Utilize strategic thinking and demonstrate reasoning skills to persevere through complex problem solving.
4. Develop and implement logical reasoning to effectively communicate viable arguments and constructively critique the reasoning of others.
5. Engage in the inquiry and research process to analyze, integrate, and present information for the purpose of investigating and solving problems.

## A Helpful Prompt

Students will be able to  
independently use their learning to

---

[phrase beginning with higher order thinking verb]

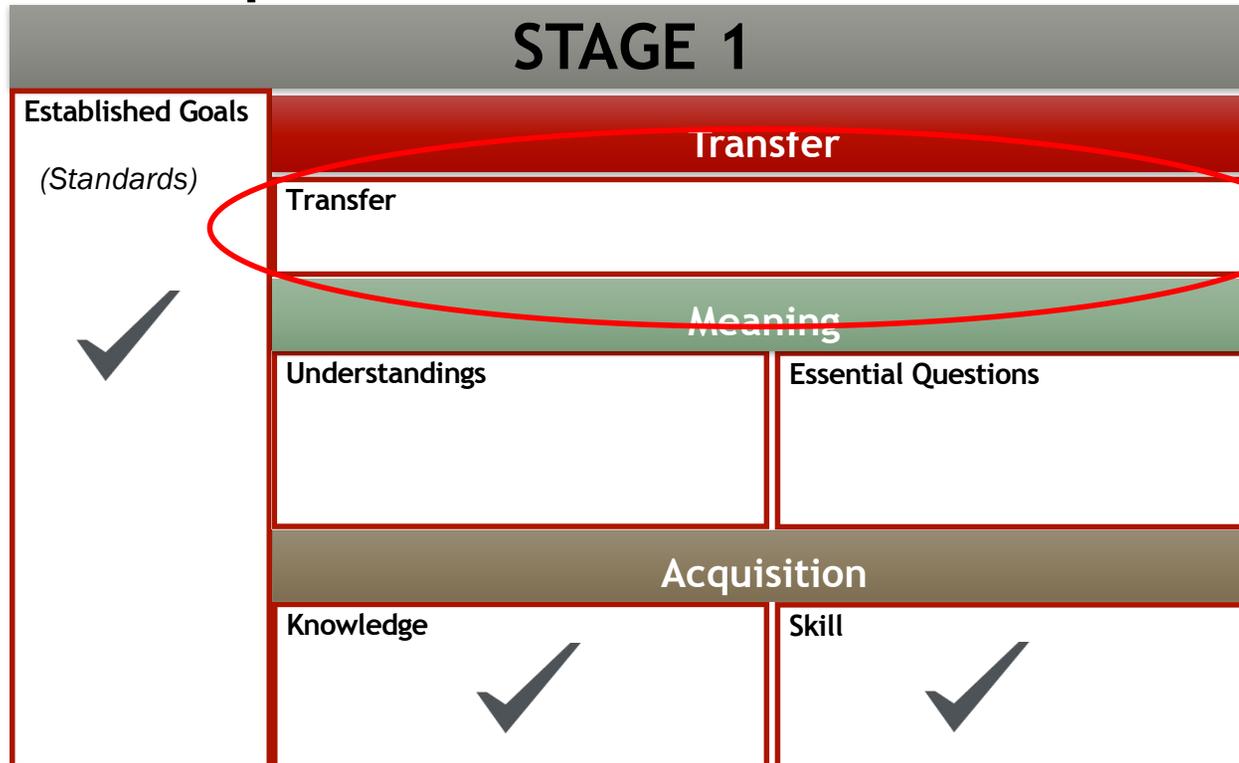
## Transfer Goals...

- **Select/Edit** (from the examples) or **Compose** a set of 3-5 transfer goals for students that are central to what you teach.
- You can take either a subject- specific or an interdisciplinary approach.
- Consult standards for inspiration/guidance

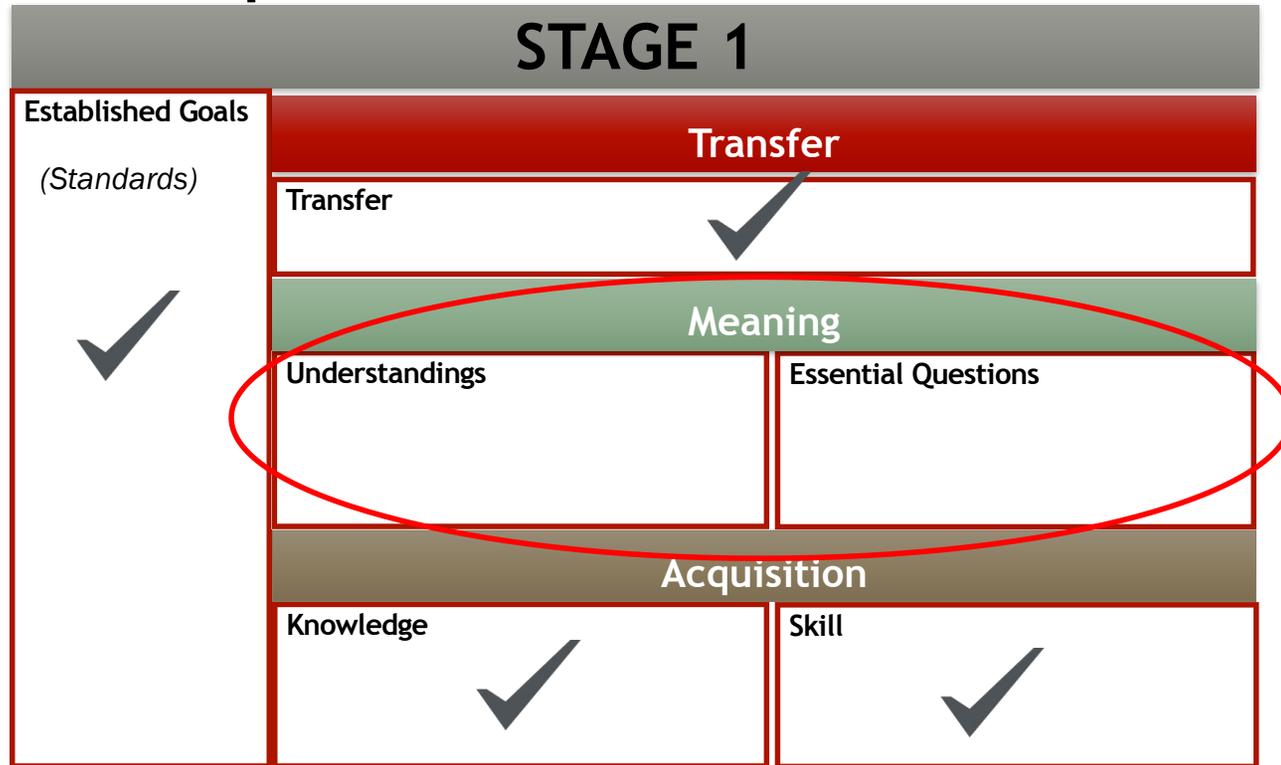


➤ *THINK Webb's DOK LEVELS 3 or 4*

# The Template: Desired Results



# The Template: Desired Results

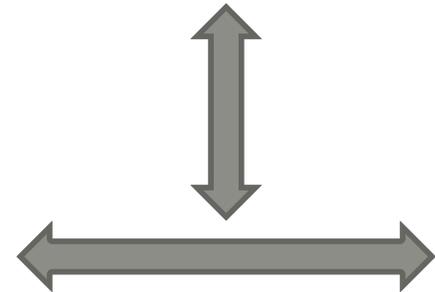


# Moving from Vertical to Horizontal Planning

*Choose a UNIT TOPIC to focus on for the rest of our time together (today and in September and November)*

## Unit criteria:

- ✓ Rich and multifaceted
- ✓ Conducive to a Performance Task as an assessment tool
- ✓ Interdisciplinary (IF desired/possible)
- ✓ Falls under one or more of the transfer goals you've articulated
- ✓ Encompasses Power and/or Critical Standards (identify those)



# Meaning and Acquisition Goals

- UNDERSTANDINGS/EQs
  - Principles/Concepts/  
Inquiry-based ?s
  - Big ideas that embody  
- and transcend - the  
discipline

- KNOWLEDGE
  - Facts
  - Vocabulary
  - Definitions

- SKILLS
  - Required skills
  - Higher-order skills
  - 21 Century Skills

*Which of the three  
is most  
emphasized?  
Least?*



## “Meaning” Goals: Students will Understand THAT...

- Systems are made of interdependent parts; change to one part affects all the other parts.
- Conflict can be both constructive and destructive.
- Language gives us power.
- Formulas allow us to use known information to discover unknown information.
- Rhythm organizes the time and energy of sound and silence.
- The optimal defense depends on the opponent’s decision about offense (and vice versa)



\_\_\_\_\_  
(Topic)  
\_\_\_\_\_ :

\_\_\_\_\_ A Study in  
\_\_\_\_\_

\_\_\_\_\_ (Concept/Big Idea)



<b>PROGRESS</b>	<b>PERSPECTIVE</b>	<b>CONNECTIONS</b>	<b>STRUCTURE &amp; FUNCTION</b>
<b>PATTERNS</b>	<b>RELATIONSHIPS</b>	<b>EFFICIENCY</b>	<b>SYSTEM</b>
<b>SURVIVAL</b>	<b>COMMUNITY</b>	<b>CYCLES</b>	<b>CONFLICT</b>
<b>INTERDEPEN- DENCE</b>	<b>PERSUASION</b>	<b>NEEDS &amp; WANTS</b>	<b>CHANGE</b>
<b>VOICE</b>	<b>POWER</b>	<b>BALANCE</b>	<b>IDENTITY</b>

## What do you think?

- ✓ What do you appreciate about this teacher's approach?
- ✓ What do you wonder about?
- ✓ How might you adapt this for older students?



<https://www.teachingchannel.org/video/teaching-complex-concepts>

## “Meaning Goals”: Essential Questions

- ✓ Important to real people in the real world
- ✓ Raise additional questions
- ✓ Worthy of discussion/provocative
- ✓ Suggestive of more than one “answer”

- What happens to the \_\_\_\_\_ system if one of its parts quits working?
- How is conflict both productive and destructive? For whom?
- How does the author both reflect and refract truth?
- What are the consequences for breaking rules? (e.g., assigning more outputs to one input in a function)

# Examples and Nonexamples from Various Content Areas

## Essential Questions

- How do the arts shape, as well as reflect, culture?
- Is there ever a 'just' conflict?
- Is there a 'best' way to problem solve?
- How does culture shape our interactions?
- How does literature reveal an author's purpose?
- How can systems be both independent & interdependent?

## Nonessential Questions

- What common artistic symbols were used by this culture?
- What key event sparked WWI?
- What method did you use to count the objects?
- How do we say hello to friends vs. coworkers in \_\_\_ (country)?
- Why did R.J. Palacio write *Wonder*?
- How does the Moon's orbit impact the Earth?

## Essential Questions...

1. *Are important to real people in the real world.*
2. *Raise additional questions.*
3. *Are worthy of discussion and exploration.*
4. *Are provocative and debatable.*
5. *Suggest more than one answer.*
6. *Aren't Googleable (that's a word!)*

- Based on the work of Wiggins & McTighe (2005)





There are two  
“starting points”  
for developing  
meaning goals.

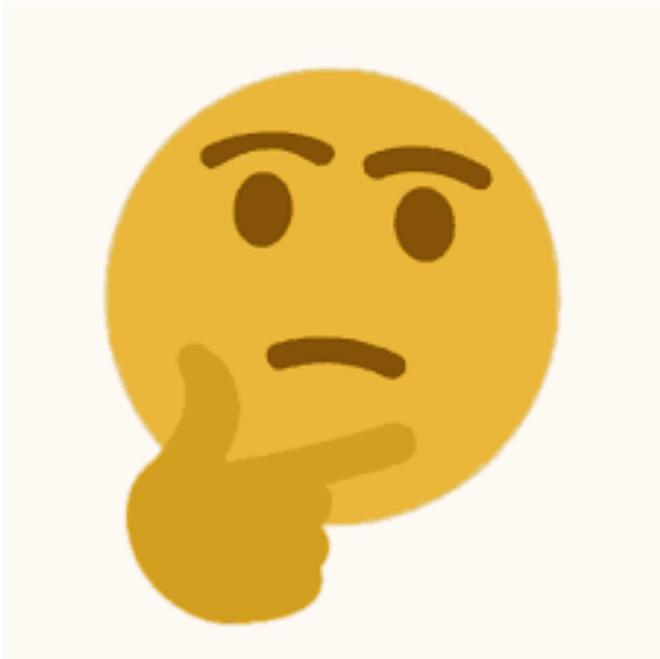
- Start with the **standards** to determine the essence of the “stuff” you’ll teach.
- Start with the **question**, “Why is this important?”



Start with the **standards** or the “stuff” (Google it!) to determine the essence of your lesson or unit topic.



If you already know your content well, start with the question, “Why is this important?”



WHAT DO YOU  
THINK ABOUT  
THESE  
APPROACHES?  
WHICH MAKES  
MORE SENSE TO  
YOU?

# Understandings and EQs Serve as...

... "adhesive" in the brain...



...so the facts  
have something  
to which to  
**stick!**

# Construct your Meaning Goals

- *You will construct both Understandings and Essential Questions. Begin with whichever makes the most sense to you.*
- *You can use a CONCEPT as a seed to get started, if you'd like.*

Use Stage 1 of  
your Template



U: Patterns [in animals bodies]  
help us make predictions...  
[about how they move & eat]

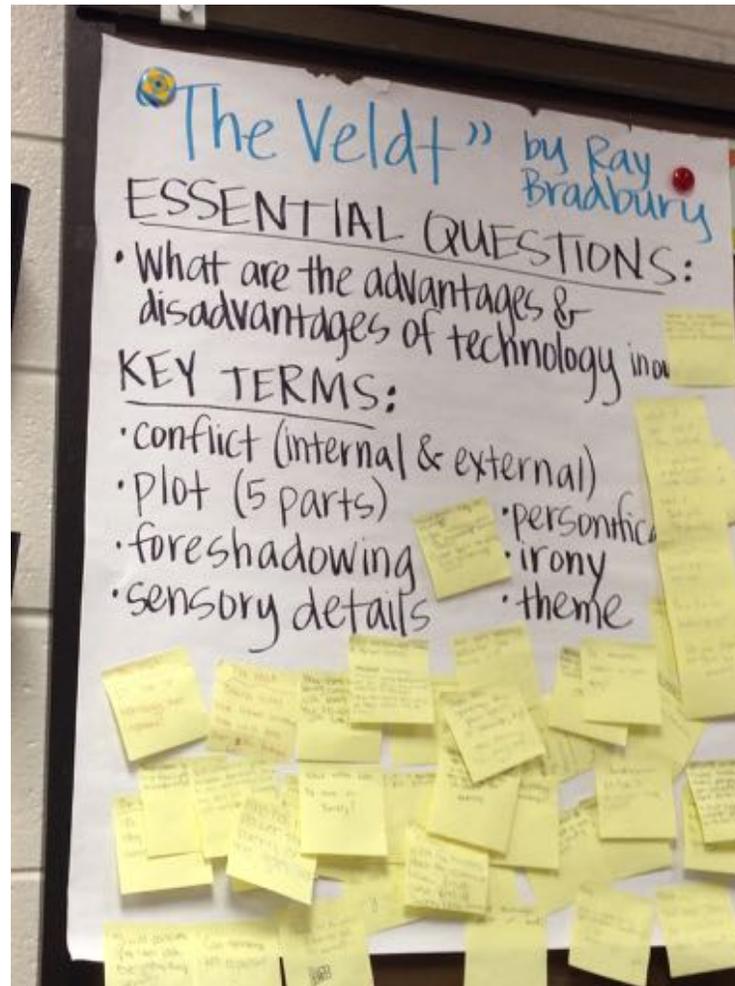
K: - Names of <sup>some</sup> dinosaurs  
- vocab: habitat, adaptation

D: - Identify key body parts  
- predict how din. would move/eat  
- defend prediction = w/ reasons/evidence

# Essential Questions Encompass Knowledge and Skills

Nichole Ehlers – 8<sup>th</sup>  
Grade THMS

Students post potential answers to the essential questions, citing key terms in their responses.



# Acquisition Goals (often unpacked from standards)



## Knowledge

- Consist of information that can be memorized, such as facts, terms, definitions, formulas, algorithms, categories, and processes.
- Focus on *essentials* (as opposed to trivia or things that are “fun” to know).
- Are aligned with standards.
- Are related to the skills in which students will engage.
- Should be written in complete sentences if used for common planning or for planning assessments (e.g., “*Dynamic characters grow and change throughout a story,*” NOT “the definition of *dynamic character*”).

## Skills

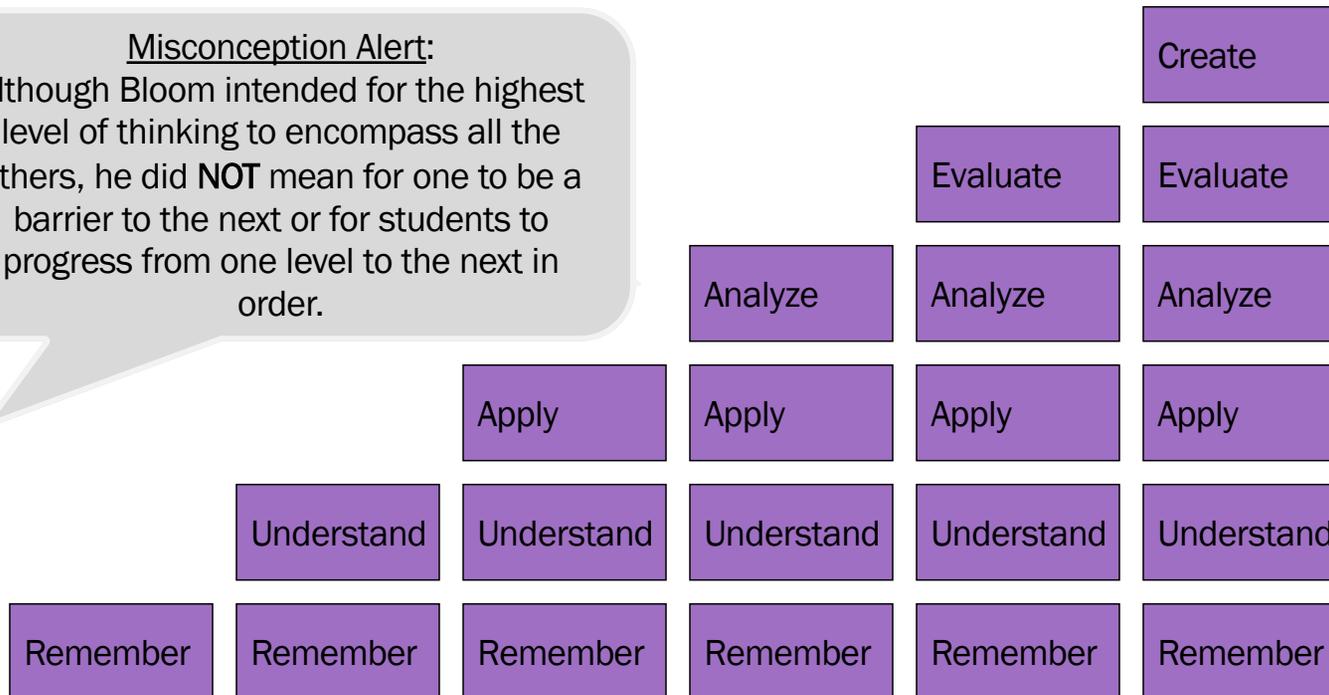
- Focus on student *thinking* (what students do with their heads, not their hands).
- Begin with a powerful verb (see Bloom’s taxonomy for suggestions). Incorporate higher-order thinking.
- Focus on a measurable verb.
- Avoid describing specific activities.
- Are aligned with but not limited by standards.
- Suggest what students will do to grapple with the essential questions and understanding goals and how they will apply the knowledge goals.

From Doubet & Hockett (2015). *Differentiation in the Middle and High School: Strategies to Engage All Learners*. Alexandria, VA: ASCD.

# Bloom Levels (2001)

Misconception Alert:

Although Bloom intended for the highest level of thinking to encompass all the others, he did **NOT** mean for one to be a barrier to the next or for students to progress from one level to the next in order.



## Questioning Framework Examples from Across Grade and Content Areas

Questions Based on Bloom's Taxonomy (Revised, Anderson and Krathwohl, 2001)			
Question Type	Nature of Question		Sample Questions or Prompts
<b>Remembering</b>	Recalling or recognizing information. Questions ask students to define, name, recall, repeat, or state.	The majority of "Remembering" questions begin with the words, "Who?" "What?" "When?" or "Where?"	<ul style="list-style-type: none"> <li>○ What is a "stanza" in poetry?</li> <li>○ When did America gain its independence?</li> <li>○ What are the properties of a triangle?</li> <li>○ Who invented the lightbulb?</li> </ul>
<b>Understanding*</b> *This is NOT UBD's transferable "understanding"	Comprehending or grasping prior learning. Questions ask students to describe, discuss, explain, paraphrase, or summarize.	<ul style="list-style-type: none"> <li>○ Explain the process of _____.</li> <li>○ Describe how to _____.</li> <li>○ Summarize _____.</li> <li>○ In your own words, tell _____.</li> </ul>	<ul style="list-style-type: none"> <li>○ Explain the conflict in the story you are reading.</li> <li>○ Summarize the events that led up to the beginning of the Revolutionary War.</li> <li>○ Describe the steps to follow when solving a long division problem.</li> <li>○ How does an elephant stay cool?</li> </ul>
<b>Applying</b>	Using information to solve a problem or complete a task. Questions ask students to demonstrate, illustrate, interpret, solve, or use.	<ul style="list-style-type: none"> <li>○ Demonstrate the process of _____.</li> <li>○ Illustrate how _____ works.</li> <li>○ Determine how _____ works.</li> <li>○ Use _____ to solve this problem _____.</li> </ul>	<ul style="list-style-type: none"> <li>○ How would you correct this flawed sentence?</li> <li>○ Illustrate how one check or balance works in the branches of the US government.</li> <li>○ What are the errors in this solution to the problem?</li> <li>○ How could the weaknesses in this experiment's design be improved?</li> </ul>
<b>Analyzing</b>	Breaking down material, examining organizational structure, finding patterns, or relating ideas. Questions ask students to categorize, compare, contrast, discriminate, or distinguish.	<ul style="list-style-type: none"> <li>○ _____ is an example of _____ because _____.</li> <li>○ What are the similarities and/or differences between _____ and _____?</li> <li>○ How does _____ affect _____?</li> <li>○ _____ is/is not an example of _____ because _____.</li> </ul>	<ul style="list-style-type: none"> <li>○ What internal conflict is the character in this story experiencing? How do you know?</li> <li>○ How are the buildings of Ancient Rome and Greece similar? Different?</li> <li>○ Is there another way that we could write the same equation to see if it would still work?</li> <li>○ Is _____ an arctic animal? Why or Why not?</li> </ul>
<b>Evaluating</b>	Appraising or critiquing based on specific standards or criteria. Questions ask students to appraise, defend, judge, justify, or support.	<ul style="list-style-type: none"> <li>○ How effective is _____? Why?</li> <li>○ Which is better/stronger/more defensible: _____ or _____? Why?</li> <li>○ Support the argument that _____ is _____ safe/helpful/beneficial for _____? Explain.</li> <li>○ Why might _____ agree/disagree with _____? Explain.</li> </ul>	<ul style="list-style-type: none"> <li>○ How effective is the writer's use of imagery (ability to use words to paint pictures in your head)? Explain.</li> <li>○ Why might some people have disagreed with the Boston Tea Party and how would they defend their opinion?</li> <li>○ How effective was [this former student] at solving this problem?</li> <li>○ Will planting trees really help the environment? Why or why not?</li> </ul>
<b>Creating</b>	Combining and integrating ideas and information into new schematics, products, plans, patterns, or structures. Questions ask students to construct, design, develop, formulate, or propose.	<ul style="list-style-type: none"> <li>○ Design a new way to _____.</li> <li>○ Develop a theory about _____.</li> <li>○ Propose a plan to _____.</li> <li>○ Imagine a situation in which _____.</li> <li>○ Formulate a new _____ using _____.</li> </ul>	<ul style="list-style-type: none"> <li>○ Formulate a new story featuring the same characters facing a different conflict.</li> <li>○ Propose a plan to help your classmates distinguish among the different regions.</li> <li>○ What is another way to solve this problem and how might it help people?</li> <li>○ Imagine a world in which everyone sorts their trash and recycling. Develop a plan that would make that happen in real life.</li> </ul>

Doubet & Hockett (2017). *Differentiation in the Elementary Grades: Strategies to Engage and Equip All Learners*. Alexandria, VA: ASCD.

# Extreme Learning Goal Makeover

- Look at one of the “Before” sets of learning goals (indicated by a )
- Decide what needs to change in order for it to adhere to the criteria pictured in the checklist on page 47 of the book.
- Look at the “After” version of that set learning goals (indicated by a ). Discuss how those revisions compare to yours
- Repeat the process with the other Before/After-s.
- Revise your own Stage 1 based on the task

## Learning Goals and UBD – A Bit of Guidance

Think about framing learning goals as follows:

\_\_\_\_\_ a study in \_\_\_\_\_  
Topic/Skill

\_\_\_\_\_ Concept/Big Idea (see slide 2)

### Essential Questions

- 1-2 provocative questions that will frame the unit, and foster inquiry, understanding, and transfer of learning

### Understandings

- 1-2 full-sentence Insights, principles, big ideas, “a-has” that you want students to walk away with, no matter what!
- It might be helpful to start with, “*Students will understand that...*”

### Knowledge

- Categories of facts, vocabulary/terms, concepts, how-to’s, information that is “memorize-able”.

### Skills

- Thinking skills, skills of the discipline, organizational skills. Remember to list only skills that will be assessed, not just any and all skills used in lesson activities. Skills start with a verb.

# Articulate your Acquisition Goals

Find the standards you  
aligned with your transfer goal

- *Identify the Knowledge and Skills from the standards that align with your transfer goals and could be incorporated into a performance task.*
- *Use the Checklist as a tool and the examples in the book as models*
- *Remember, you can move BEYOND the level of the standards.*

Use Stage 1 of  
your Template



Unit Plan				
Stage 1	3	2	1	Feedback and Guidance
1. Specifies the desired long-term transfer goals that involve genuine accomplishment.				
2. Identifies important, transferable ideas worth exploring and understanding.				
3. Identifies understandings stated as full-sentence generalizations: <i>Students will understand that...</i>				
4. Is framed by a few open-ended, thought-provoking, and focusing essential questions.				
5. Identifies relevant standards, mission, or program goals, to be addressed in all three stages.				
6. Identifies knowledge and skill needed to achieve understanding and address the established goals.				
7. Aligns all the elements so that Stage 1 is focused and coherent.				



**BREAK  
TIME!**

# Stages of UBD



**What transfer should students achieve?**

**What is evidence that they can transfer?**

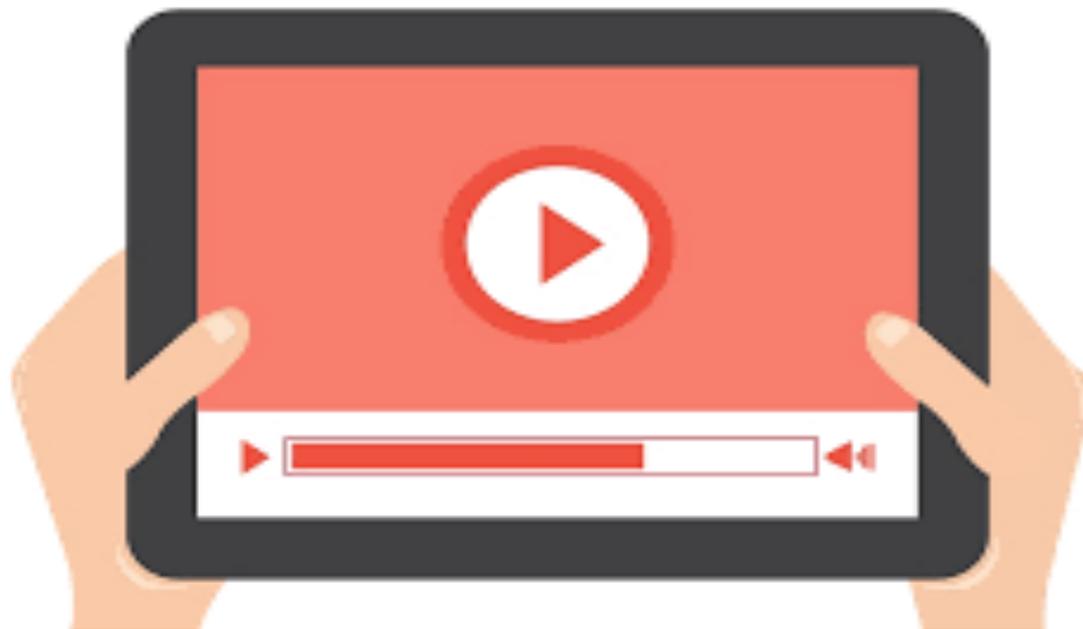
**What learning will help lead them to the ability to transfer it?**



**IT'S ALL ABOUT  
TRANSFORMATION!**

## Movie Time!

*What does Teaching for Transfer Look Like in a Middle School Classroom?*



# Julie's Transfer Goal

- Apply data and understanding of natural phenomenon to determine what impact a [new element] would have on an ecosystem [geographic, economic, cultural, etc.].



# Julie's Unit Goals



## Meaning Goals:

- Student will understand that... change to one part of an ecosystem impacts the rest of the system.
- EQ: What is the role of science in decision making? What is the role of other stakeholder lenses?

## KNOWLEDGE GOALS:

- Patterns and impacts of ocean currents
- Types of shorelines
- Survival needs of area wildlife
- Economic needs of people
- Impacts of disasters on environment, community, economy, etc.

## SKILL GOALS:

- Analyze data and draw conclusions
- Examine impact of a disaster on a particular site
- Adopt a stakeholder lens and analyze data/make decisions through that lens
- Use scientific evidence to argue persuasively for the preservation of a given site

## Teaching for Transfer – MS Science

- Evaluate the Impact of the introduction of a foreign substance on an ecosystem
- Analyze Data to make predictions regarding natural phenomena
- Evaluate Data-Analysis Findings to predict ecological impact
- Analyze Data through a stakeholder lens to determine social, economic, and/or cultural impact

Julie's lessons engage her students by giving them the opportunity to apply what they've learned about natural phenomena AND stakeholder perspectives to make a case for saving a particular part of an ecosystem.

**There is a time and a place for each.**



Planning  
authentic ways  
to make sure we  
know if - and  
how expertly -  
students have  
arrived

## Stage 2: Performance Tasks



# Performance Task - Definition

- “A performance task ask students to **apply** their learning to a **new and authentic situation** as means of assessing their understanding and **ability to transfer** their learning.”
- McTighe, J. & Wiggins, G. (2014). *Improve Curriculum, Assessment, and Instruction Using the Understanding by Design Framework*. Alexandria: ASCD.

## 7th Grade “Exxon Valdez” Task

- Goal: Apply scientific data to determine the impact a pollutant would have on an ecosystem; evaluate data in terms of stakeholder lenses.
- Role: A Given Stakeholder (Tourism board, fisherman, etc.)
- Audience: Local Government of Prince William Sound, Alaska
- Situation: The Exxon Valdez has crashed and the oil spill is spreading, and it will impact many sites throughout the community. Examine the data on currents, weather patterns, wildlife and human needs, etc. Then, taking all data into account, but through the lens of your stakeholder, make a decision about which site should be protected.
- Performance/Product: Use data and persuasive techniques to make a case for protecting a certain site in Prince William sound. You must submit a Cost-Benefit Analysis chart reflecting all stakeholders’ perspectives as well as a written proposal advocating for your site recommendation.

## Models – PTs and PBL

Now look back at your top choices from the Padlet examination. To which model were you more drawn? Why do you think that is?

### Performance-Tasks

- A “learning activity or assessment that asks students to construct a multi-faceted response, create a product, or produce a demonstration. In other words, to perform with their learning.”

### Project-Based Learning (PBL)

- A “pedagogical approach in which learning develops as students pursue answers to complex questions through [collaborative] work on extended learner-directed projects.”

## PTs and PBL: What's the Overlap?

- Performance assessments and projects have many common features; the lines between them can be blurry.
- Not necessarily dichotomous, “either or” choices.
- Better viewed in terms of a series of **design variables**, with each operating like a sliding control on a sound or lighting board. They vary according to...
  - ...*targeted outcomes*
  - ...*purpose of the task or project*
  - ...*available resources (including time, materials, equipment)*
  - ...*nature and needs of the students*
  - ...*feasibility of implementation*

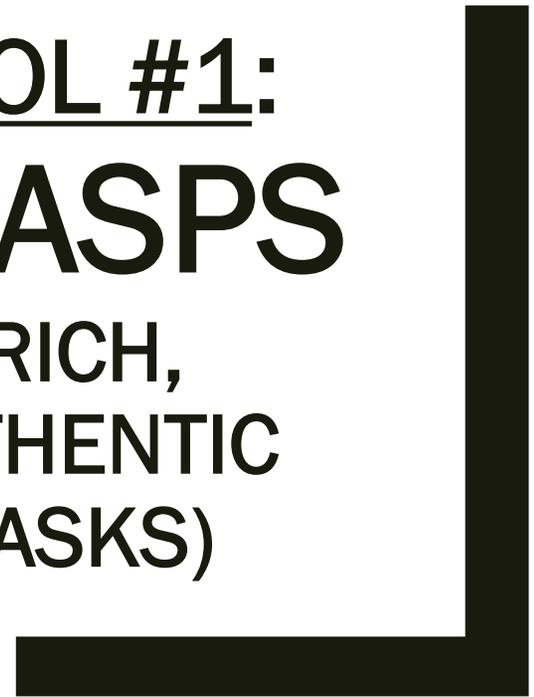
## Design Variables for Performance Tasks and Projects

1. Time Frame
2. Integration of Subjects
3. Cognitive Demand/Rigor
4. Level of Inquiry
5. Degree of Authenticity
6. Audience(s) for Student Product(s) /Performance(s)
7. Access to Resources
8. Direction (*Teacher - Student*)
9. Student Choice
10. Degree of Scaffolding
11. Performance Mode
12. Evaluation of Student Products/Performances

We will explore these in more detail next time.



TOOL #1:  
**GRASPS**  
(RICH,  
AUTHENTIC  
TASKS)



## TOOL #2: GRASPS

- G** ♦ What is the **g**oal in the scenario?
- R** ♦ What is your **r**ole?
- A** ♦ Who is the **a**udience?
- S** ♦ What is your **S**ituation (context)?
- P** ♦ What **p**roducts/**p**erformances will you prepare?
- S** ♦ By what **S**uccess criteria will your work be judged?



# Middle School Science Task

- Goal: Apply scientific data to determine the impact a pollutant would have on an ecosystem; evaluate data in terms of stakeholder lenses.
- Role: A Given Stakeholder (Tourism board, fisherman, etc.)
- Audience: Local Government of Prince William Sound, Alaska
- Situation: The Exxon Valdez has crashed and the oil spill is spreading, and it will impact many sites throughout the community. Examine the data on currents, weather patterns, wildlife and human needs, etc. Then, taking all data into account, but through the lens of your stakeholder, make a decision about which site should be protected.
- Performance/Product: Use data and persuasive techniques to make a case for protecting a certain site in Prince William sound. You must submit a Cost-Benefit Analysis chart reflecting all stakeholders' perspectives as well as a written proposal advocating for your site recommendation.

Ms. Julie Martinek

## HS ELA Task

- **Goal** – Use pathos, ethos, and logos, including “textual” support or evidence, to convince an audience
- **Role** – You are a Movie Critic
- **Audience** – Readers of your Weekly Column
- **Situation** – A new movie [or an old favorite] will be playing nationwide this weekend. Your job is to convince audiences to see it (or NOT to see it if you think it has been overrated). In order to appeal to every reader, you will employ pathos, ethos, and logos in your review, along with appropriate evidence from the film (that which will paint a clear picture without “giving away” the movie’s end).
- **Product** – Online blog post containing your movie review and encouraging your followers to either see or avoid the film.

TOOL #2:  
PBL'S  
DRIVING  
QUESTIONS



# Tool #3: PBL's Driving Questions

## Types of Projects/Questions

1. Solving a Real-World Problem
2. Meeting a Design Challenge
3. Exploring an Abstract Question
4. Conducting an Investigation
5. Taking a Position on an Issue

*These questions are open-ended, thought-provoking/engaging, raise additional questions and spark inquiry, require support and justification (not just an answer), and are worthy of debate or discussion.*

Buck Institute for Education, 2015



# 1. Respond to an Abstract or Philosophical Question (AKA – *Essential Questions*)

- How is geography destiny?
- What makes a law “just”?
- Who is a hero?
- How can art influence?
- How can conflict be both productive and destructive?
- How does perspective shape research?

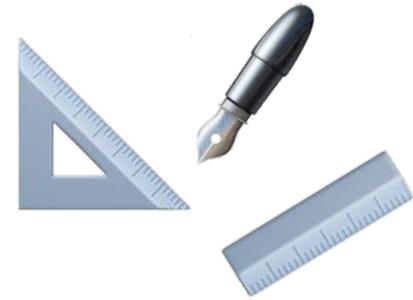


## 2. Solve a Real World Problem



- How can we help others develop empathy toward diverse peoples?
- What is the best approach to securing financial aid for college? For whom?
- How can we support residents who are pursuing US citizenship?
- How can we increase the number and selection of children's books in our local library?

### 3. Meet a Design Challenge



- How can we design a memorial to honor our community's veterans from the Iraq War and the US War in Afghanistan?
- How can we better control afternoon bus traffic?
- How can we best illustrate sound?
- How might we convince a famous author to visit our school?

## 4. Conduct an Investigation



- What is the optimal price for school yearbooks?
- What is the best pet for our class given the available resources?
- What factors impact erosion? How does erosion impact ecosystems?
- How has increased access to technology shaped our grasp of spelling and grammar rules?

## 5. Take and Defend a Position on an Issue

- Should the US government regulate bitcoin?
- Should we be required to recycle?
- Should some books be censored?
- Should public schools continue to teach cursive writing?



# Tool #3: PBL's Driving Questions

## Types of Projects/Questions

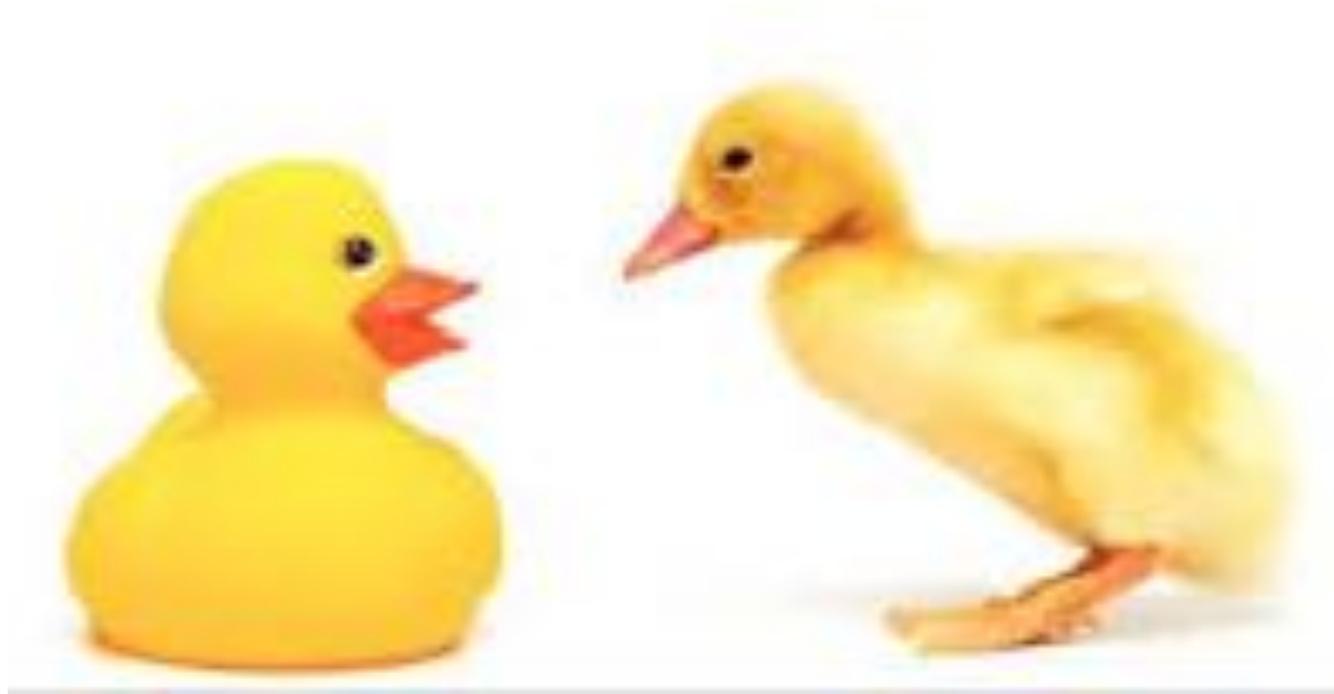
1. Solving a Real-World Problem
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Buck Institute for Education, 2015



# Ensuring Authenticity



## For Both Models - Authenticity Four Ways

1) <b>Context</b> (e.g., what kinds of problems do historians solve?)	2) The use of real world processes, <b>tasks, tools, and quality standards</b> (e.g., what level of precision is necessary when designing a scientific experiment?)
3) <b>Impact on others</b> (e.g. how might these findings help improve society?)	4) <b>Personal authenticity</b> (e.g. how does the media impact how my family perceives important issues?)

**1. Authentic context**

-Driving Question: Were certain historical events inevitable?

-Task: Students investigate whether U.S. involvement in World War II could have been avoided, and if so, how?

**2. The use of real world processes, tasks, tools, and quality standards**

-Driving Question: How can we evaluate the quality of art?

-Task: Students research a variety of pieces across time periods and genres. They develop universal criteria that could be used to evaluate art and explain their rationale.

**3. Impact on others**

Driving Question: How can our words and deeds impact others?

-Task: Students survey patients at a local children's hospital to determine their favorite books. They raise funds to purchase these works and visit (or Skype) with the patients to read and discuss the books.

**4. Personal authenticity**

-Driving Question: How can I design or improve a product or process?

-Task: Students pick an area of interest and propose a way of improving a product or process to address it. Present your design idea to a "shark tank" panel to convince them to invest in your idea.

## Authenticity Four Ways

1) <b><u>Context</u></b> (e.g., what kinds of problems do historians solve?)	2) The use of <b><u>real world processes, tasks, tools, and quality standards</u></b> (e.g., what level of precision is necessary when designing a scientific experiment?)
3) <b><u>Impact on others</u></b> (e.g. how might these findings help improve society?)	4) <b><u>Personal authenticity</u></b> (e.g. how does the media impact how my family perceives important issues?)

Using the next 6 examples in your handout, identify how authenticity is established in each task.

## Example 1: Active Citizen



- Driving Question: How can we convince others to support our position?
- Transfer Goal (#5): Construct arguments and draw conclusions based on evidence
- Possible Knowledge and Skills:
  - *Knowledge: various political roles and systems, elements of a persuasive argument*
  - *Skills: be able to analyze sources for key information, cite references*
- Task: You have the option of selecting among several teacher-identified political issues (or having one of your own approved). Once your issue has been selected, you will be provided with several sources with information about your issue (or conduct your own research). After analyzing the sources, prepare a position paper or presentation for a public policy maker (e.g., Congress person) or group (e.g., school board, legislative committee). Assume that the policy maker or group is opposed to your position. Your position statement should provide an overview of the issue, present your position, and rebut opposing positions to attempt to persuade the public policy maker or group to vote accordingly. Cite relevant evidence to support your argument. Your position can be communicated via a written report, blog, or as a presentation.

Source: Littleton Schools

## Example 2: Scientific Investigator

- Driving Question: How can we investigate the validity of a claim?
- Transfer Goal: Develop an investigation to test a claim
- Possible Knowledge and Skills to be acquired:
  - *Knowledge: aspects of an investigation, elements of a quality report/presentation, jobs of lab investigators*
  - *Skills: be able to develop a quality report or presentation*
- Task: The Pooper Scooper Kitty Litter Company claims that their litter is 40% more absorbent than other brands. You are a Consumer Advocates researcher who has been asked to evaluate their claim. Develop a plan for conducting the investigation to determine the accuracy of the kitty litter company's claim. Your plan should be specific enough so that the lab investigators could follow it to evaluate the claim. You should also prepare a presentation or report that will clearly communicate your findings to potential consumers.
- Source: McTighe, 2013



## Example 3: Drywalling a Home (Math)

- Driving Question: How can we determine the reasonableness of a particular cost?
- Transfer Goal: Defend a position using mathematical reasoning?
- Possible Knowledge and Skills
  - *Knowledge: Formulas for area and perimeter*
  - *Skills: be able to solve for area and perimeter, measure precisely*
- A homeowner has asked you to review a dry walling contractor's proposal to determine whether the homeowner is being overcharged. (Students are given room dimensions and cost figures for materials, labor, and a 20 percent profit.) Examine the proposal and write a letter to the homeowner providing your evaluation of the proposal. Be sure to show your calculations so that the homeowner will understand how you arrived at your conclusion.



Task Source: Wiggins & McTighe, 2004

## Example 4: The Global Challenge (Multidisciplinary)

- Driving Question: How can we help solve the world's problems?
- Transfer Goal: Based on research, propose and defend solutions to global issues
- Possible Knowledge and Skills:
  - *Skills: Be able to annotate key sources to support an argument, write for an intended audience*
  - *Knowledge: reputable sources for factual information, key components of an effective proposal*
- At the end of the school year, eighth grade students work in teams on a week-long project based the United Nations' 17 Sustainable Development Goals (SDGs). Each student chooses a global development challenge of interest (e.g., malnutrition, education, gender equality, the environment) and then joins four other students to research the challenge, define problems and propose solutions. They then develop a proposal for funding to present to a panel of adults in a simulated “Shark Tank” setting. Students are assessed on developed rubrics on Problem Solving, Communication, Collaboration and Result (i.e., did the panelists approve their funding request?)
- Source: Wise and McTighe, 2017 <http://markwise8.wixsite.com/globalchallenge>



## Example 5: Mythic Job Search (ELA)

- Driving Question: What makes someone a “hero?”
- Transfer Goal: Write persuasively and in a specific form for an intended audience
- Possible Knowledge and Skills
  - *Knowledge: Elements of a business letter, types of persuasive techniques, key characteristics of a hero*
  - *Skills: be able to analyze text for meaning*
- Your task is to select an epic hero from the literature we have read and write a letter to the hero in which you apply for a job as a crew member on his or her expeditions. In the letter, you must be specific about the position for which you are applying, your qualifications for the job, and why you feel you would be an asset to the crew. Be sure to make your letter persuasive by making it clear that you understand the particular struggles and adventures the hero and crew have already undertaken, and how you might be of value to them in handling such situations and difficulties. Write in business-letter form, and include a résumé.



Task Source: Wiggins & McTighe, 2004

## Example 6: Tiny House Project (Multidisciplinary)

Driving Question: How can a house operate “off the grid?”

- Transfer Goals: Design and construct a model home that is energy self-sufficient, develop a website
- Possible Knowledge and Skills:
  - *Skills: be able to research energy efficient and self-sufficient homes*
  - *Knowledge: Elements of effective web design, technologies that promote energy self-sufficiency*
- High school students work in teams to research, design and construct a model of a “tiny” house that is energy self-sufficient. Teams create a website to document their process as well as what they have done to make the house energy self-sufficient. The project culminates with a public showing of the model during a school-wide design competition.
- Source: High Tech High School



## What Would an Expert Do? *Some Possible Roles*

- Math: Mathematician, Architect, CSM, Engineer, Statistician, Accountant, Actuary, Financial Advisor, Astronaut, stockbroker, programmer, air-traffic controller, A.E.D., cook, mechanic, building contractor
- Science: Biologist, Botanist, Chemist, Environmental, genetic counselor, zoo keeper, doctor, paleontologist, forensic scientist, construction site manager, mechanic, engineer
- Social Studies: Archaeologist, Anthropologist, Historian, Museum Curator, Film Consultant, politician, lawyer, psychologist, geographer, cartographer, international relations consultant/diplomat, tour guide, fact-checker, author, economist
- English: Author, Editor, Publisher, lawyer, advertising, politician, book critic, movie critic, technical writer, public relations, journalist
- Spanish: English fields + Tour Guide, Interpreter, Ambassador
- P.E.: Coach, Referee, Commentator, Columnist
- Exploratory: Graphic Designer, Musician, Music/Art Critic, Admin. Asst., Engineer

# Public Product

The Buck Institute (2015) notes three major reasons for including public products as a key component to high-quality task design:

- First, public products add authenticity which can motivate and encourage students to ensure their work is polished and professional.
- Second, extending PBL beyond a teacher-student event adds a social dimension which, employed effectively, can positively impact the school culture and classroom community by involving others in what should be learned and what quality evidence of learning looks like.
- Last, making student work public helps to communicate why PBL is a valuable model for student learning.



## Rolling for Driving ?s

For this activity, each group will need **one** of these 3 things:

- And actual die
- A dice app on your phone
- A screen open to an online die (Google “Dice Roller”)



## Rolling for DQs (Adapted from the Buck Institute)

<u>Roll 1:</u> Framing Words	<u>Roll 2:</u> Person or Entity	<u>Roll 3:</u> Action or Challenge	<u>Roll 4:</u> Audience or Purpose
Wild Card	Wild Card	Wild Card	Wild Card
How can...	I/We	Build/Create/Make	Real World Problem
How do...	We as, [Roles/Occupations]	Design/Plan	For a Public Audience
Should...	Town/City/County	Solve	For a School
Could...	State/Nation	Write	For a Classroom
What...	Community/ Organization	Propose/Decide	For an Online Audience

# Rolling for DQs Directions



1. Roll the die four times. Each roll corresponds with a column on the previous slide.
2. Write down your associated prompts and then use that “frame” to brainstorm an idea for a driving question.
3. If you roll a 1, you can choose from any of the prompts in the row.
4. For example, if you rolled a 2, 6, 3, 2 you would write down the following frame: How can (framing words)...community/organization (person or entity)...solve (action or challenge)...for a public audience (audience or purpose).
5. A resulting Driving Question could be: (Framing Words) **How can** (Person or Entity) **the Ohio EPA and Montgomery Officials** (Challenge) **work together** (Audience or Purpose) **to ensure the city’ water is drinkable for residents?**

## Begin Drafting your Performance Task/PBL

- *You can use GRASPS framework (PT) or a Driving Question (PBL) to get started.*
- *Even if you are planning a PBL, the GRASPS format is a helpful tool for thinking through the structure.*

Use Stage 2 of  
your Template



There is a time and a place for each



# Ongoing Classroom Assessment

The process of taking regular and varied snapshots of students' learning before, during, and/or following instruction for the purpose of informing next-steps in planning

Doubet & Hockett © 2018



# Ongoing Classroom Assessment

*Fuel for effective teaching & learning*

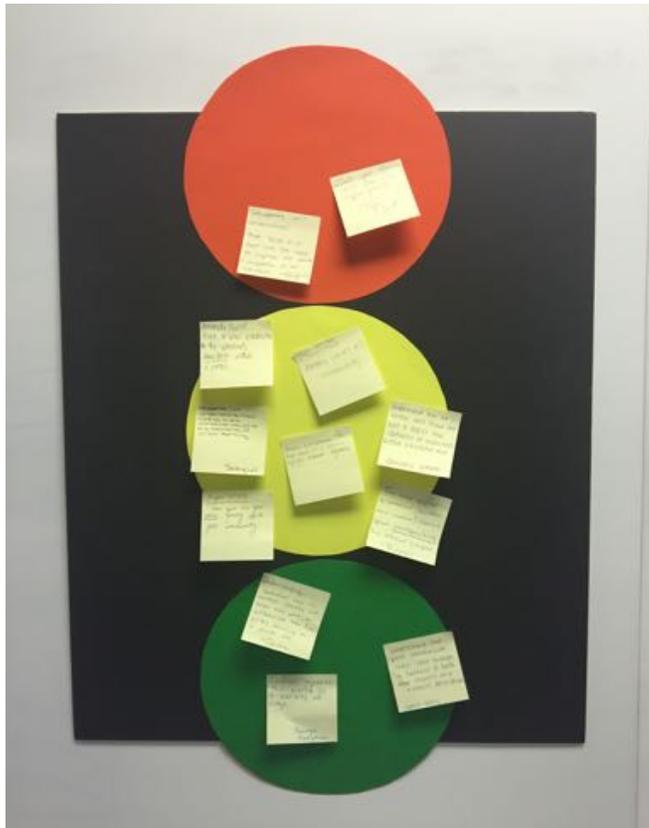


## End of Lesson/Assessment Routine



<https://www.teachingchannel.org/videos/daily-lesson-assessment>

## Another Option



- Pose one question or prompt and ask students to place their answers according to how certain they are of their response.

From Doubet & Hockett (in press)  
*Differentiation in the Elementary Grades: Strategies to Engage and Equip All Learners*. ASCD.

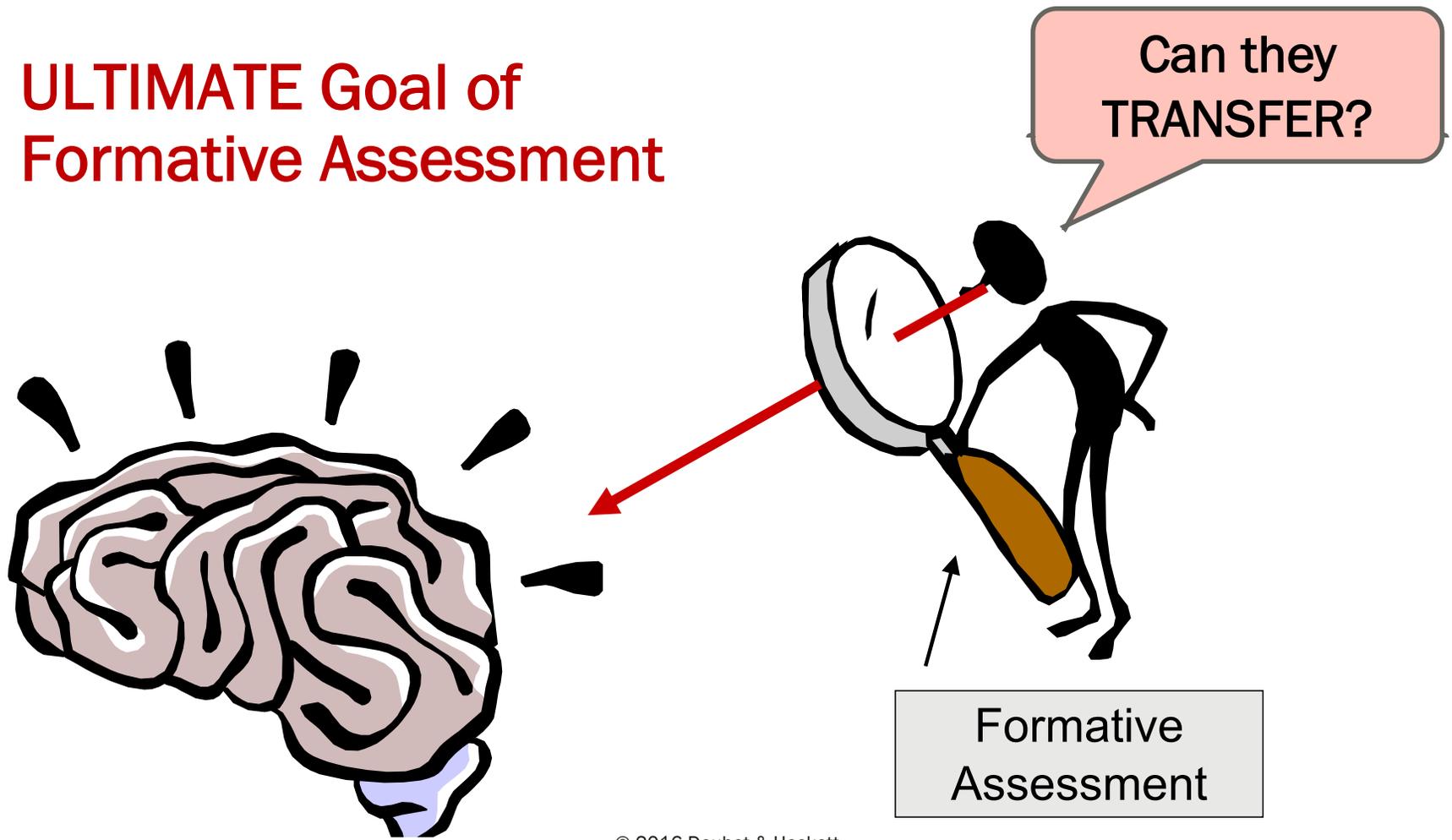
## Another Teacher's Approach

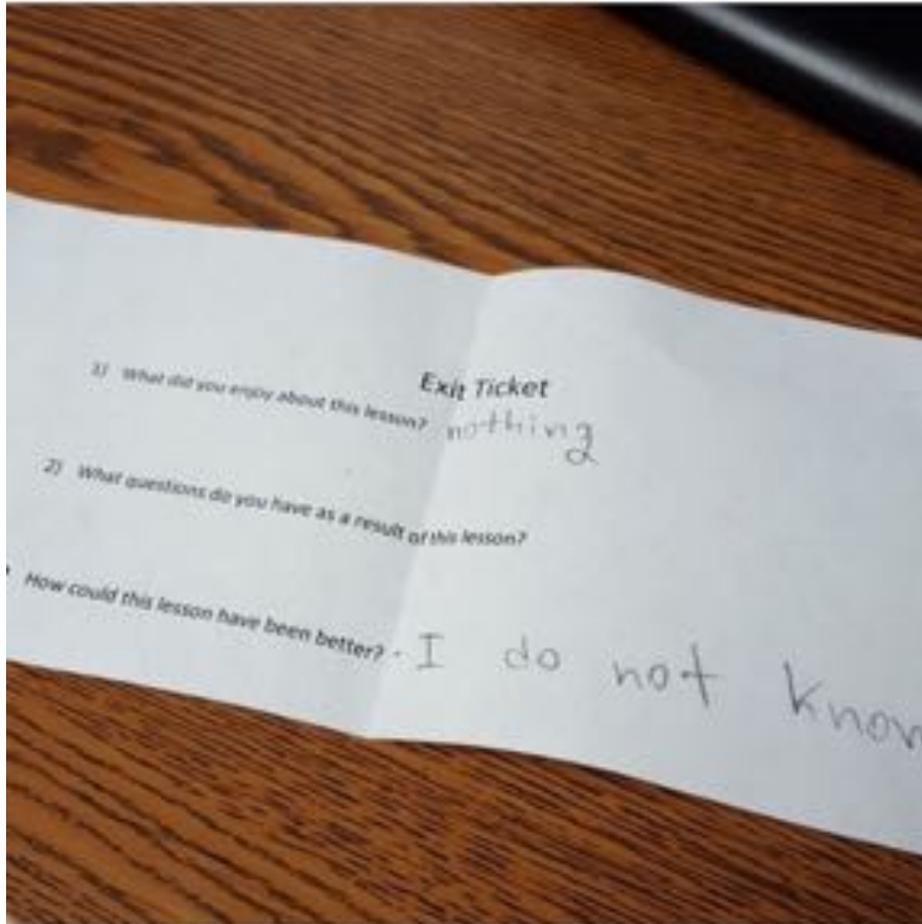
- ✓ What did you like about this approach?
- ✓ What might you borrow?
- ✓ What might you change?
- ✓ What other ideas did this clip give you?



<https://www.teachingchannel.org/videos/second-set-partners-sfusd>

# ULTIMATE Goal of Formative Assessment



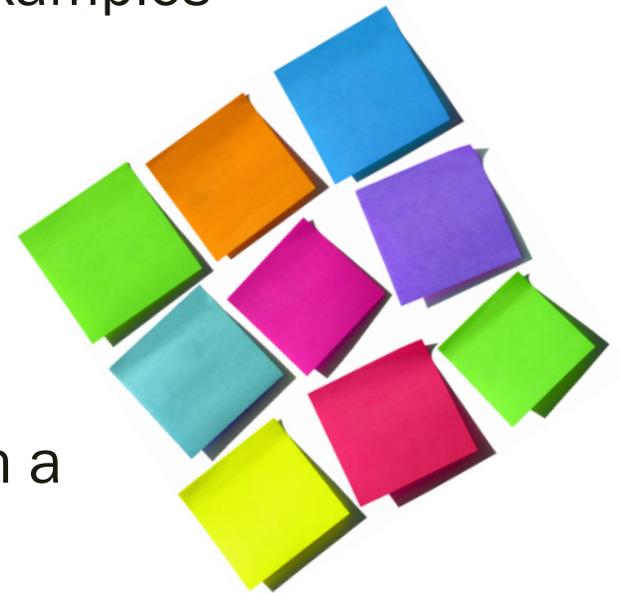


Using giving a formative assessment does not guarantee success....

Rather, it's about the questions we ask ON the formative assessments.

# Formative Assessment Sampler

- Examine the formative assessment examples in your packet.
- Choose and mark...
  - 1-2 examples you could use **as is**
  - 2-3 examples you could **adapt** and use in your work
- Be ready to share your selections with a colleague



## IMPORTANT THINGS

- Some important things about **[the three branches of government]** are \_\_\_\_\_ and \_\_\_\_\_.
- But the MOST important thing about **[the 3 branches of government]** is \_\_\_\_\_ because....

From Doubet, K.J. & Hockett, J.A. (20165). *Differentiation in middle and high school*. Alexandria, VA: ASCD.



“Your dog would be camouflaged during a snowstorm.”