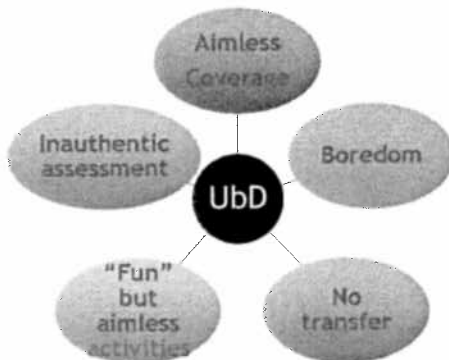


What is Understanding by Design?



Why UbD? Some common realities, deliberately targeted



3

UbD is a purposeful response to the Qs and design issues:

- A planning framework to –
 - Envision 'understanding' as a goal
 - Deliberately engage learners in thought-provoking work
 - Align goals, assessments, instruction
 - Align with Standards and predict results

4

'by design' – a thoughtful learning plan



5

What you do when NOT with students



A way of thinking

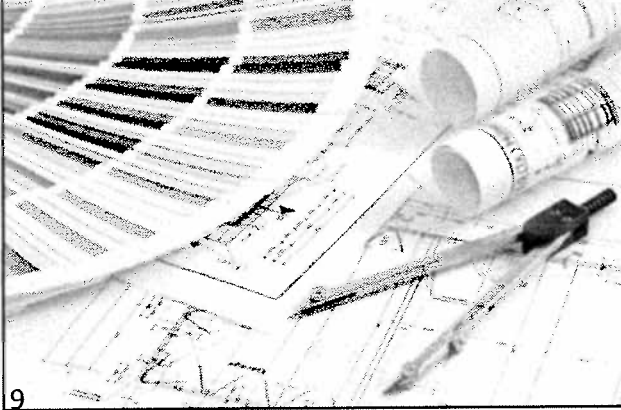


Not about filling in boxes



8

In sum: thinking like a designer



9

Reality: tensions

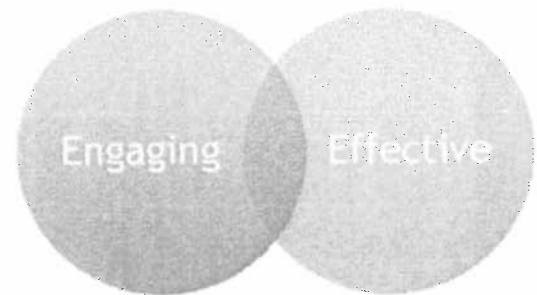
- Standards vs. diverse students
- Limited time, many complex goals
- Learning has to be in-depth to last, but there is so much content
- Typical methods of instruction are efficient but often boring
- 1 curriculum & pace vs. individual needs of learners

10

What is *good* design?



Backward Design - general



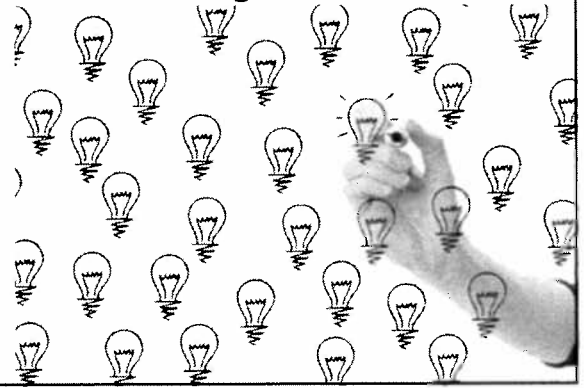
12

**To make student engagement
& learning more likely**



13

Understanding is our aim



14

**'Coverage' is aimless and often
unengaging**



15

the essence of UbD

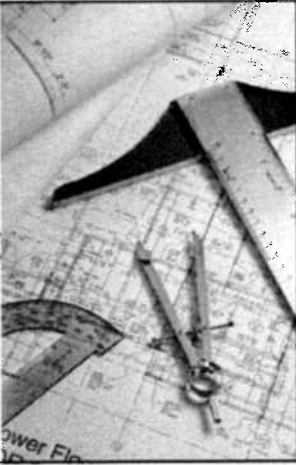
understanding –

not by
good
fortune...



16

Rather,
understanding
by design



17

Detailed description: This slide features the text 'Rather, understanding by design' on the left. On the right is a black and white photograph of architectural blueprints spread out on a table. Several drafting tools, including a large T-square, a pair of compasses, and a pencil, are resting on the drawings. The number '17' is in the bottom-left corner.

Goal: effective performance with
understanding...



18

Detailed description: This slide has the text 'Goal: effective performance with understanding...' at the top. Below it is a black and white photograph of a car with a sign on the roof that reads 'DRIVER EDUCATION STUDENT DRIVER' twice. A male instructor is in the driver's seat, and a female student is in the passenger seat. The number '18' is in the bottom-left corner.

Then this won't get us there



19

Detailed description: This slide contains the text 'Then this won't get us there' at the top. Below it is a black and white photograph of a car chassis that has been completely disassembled into its individual parts, which are scattered across a large surface. A person's hand is visible in the upper right corner, holding a small sign with illegible text. The number '19' is in the bottom-left corner.

Unfortunately, even many good
teachers lack powerful plans



20

Detailed description: This slide has the text 'Unfortunately, even many good teachers lack powerful plans' at the top. Below it is a diagram with a central black circle containing the text 'Typical plans'. Five lines radiate from this central circle to five circular images: a man's face, a hand with fingers spread, a hand holding a pencil, a hand holding a book, and a hand holding a pen. The number '20' is in the bottom-left corner.

3 big ideas of UbD

You are a designer

Focused on understanding

Using 'backward design'

21

3 big ideas of UbD

You are a designer and coach of engaging & effective learning, not a teacher of content

Effective learning focuses on and achieves understanding, not prompted recall

Backward Design: from engaging work and effective understanding, not 'coverage'

22

big idea #1

You are a designer

Focused on understanding

Using 'backward design'

23

Teacher: 1 piece of a total design of learning



24

'Teaching' as one element of design

▫ Think of how *little* 'teaching' is involved in –

- Centers
- Socratic seminar
- Jazz band
- Problem-based work
- Video games



25

Design: creative solutions to needs, in the face of limits

▫ "Good design is all about successfully managing tensions."

• Tim Brown, head of IDEO



26

Some elements in your control

27

<i>Time</i>	<ul style="list-style-type: none"> • What's the best use of precious class time? What should we do in class? Out of class? How can learning occur when I am not teaching or cannot reach each student at any given time?
<i>Resources</i>	<ul style="list-style-type: none"> • What would be the most user-friendly resources? How can I maximize self-sustained engaged and effective learning?
<i>Culture</i>	<ul style="list-style-type: none"> • How can I make the class safe for making mistakes, learning from mistakes, and admitting ignorance or failure in a matter of fact way?

big idea #2

You are a designer

Focused on understanding

Using 'backward design'

28

**What is real understanding?
How does it differ from 'knows stuff'**

<p>▫ If you really understand you can...</p>	<p>▫ If you know a lot, but don't really understand, you can only...</p>
<p>29</p>	

What is understanding? – the verbs

<p>▫ If you really understand you can...</p> <ul style="list-style-type: none"> • Apply • Predict • Connect • Explain • Teach • Interpret • Prove 	<p>▫ If you know a lot, but don't really understand, you can only...</p> <ul style="list-style-type: none"> • Argue • Create • Solve • Go beyond • Synthesize 	<ul style="list-style-type: none"> • Retell • State • Regurgitate • Recall • Plug in
<p>30</p>		

Useful to group the verbs

▫ If you really understand you can...

31

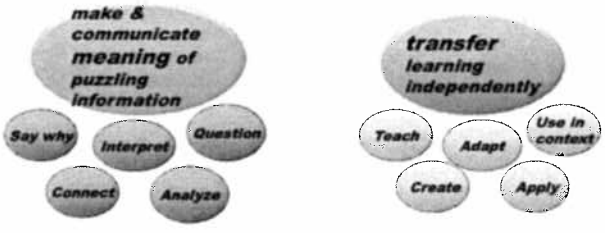
Group the answers

▫ If you really understand you can...

32

Group the answers

▫ If you really understand you can...



33

Generalize from the verbs...

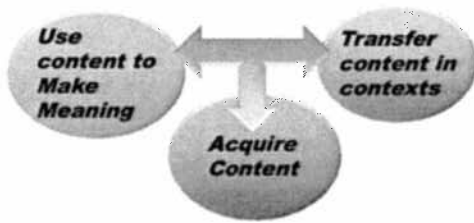
▫ If you really understand you can...



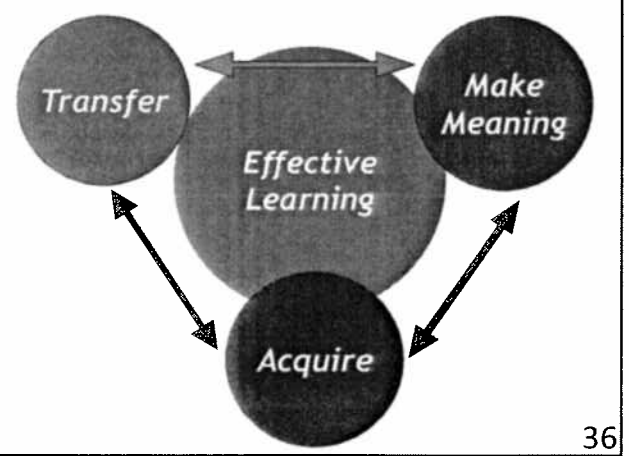
34

Key Implications

- Acquisition is a means, not the goal
- Thus, design backward from transfer & meaning – content use



35



36

Acquire

Acquisition goals

† Learn, with accurate and timely recall, important facts and discrete skills

† **Aim: automaticity of recall when needed in performance**

37

Meaning goals

Make Meaning

▫ Make connections & generalizations, using the facts and skills –
 • e.g. interpret, gist, main idea, thesis, empathize, critique, etc.

▫ *AIM: independent and defensible student inferences about situations, texts – 'helpful and insightful understandings'*

38

Transfer Goals

† Adapt your knowledge, skill, and understanding to specific and realistic situations and contexts

† **AIM: efficient, effective solutions for real-world challenges, audiences, purposes, settings**

Transfer

39

TMA Questions

† T: What do you want them to be able to do with content on their own in the future?
 † M: What kind of thinking do you want them to do and what kinds of understandings do you want them to grasp or validate?
 † A: What knowledge and skills are needed to achieve these longer-term goals?

40

TMA in Geography

- †T: Make a map (classroom, school, region, era)
- †M: Make sense of other people's maps, and explain what they reveal
- †A: Acquire skills of making and reading maps

41

TMA in French

- †T: solve a language-related communication problem, on the spot, in which an American cannot make himself understood to a Parisian (e.g. accent, speed, too many 'faux amis' words - sound like ours, different meanings - syntax, unusual tenses, etc.)
- †M: Correctly interpret such a communication situation - the verbals, non-verbals, and proper translation
- †A: Acquire skills of accurate conjugation and vocabulary (related to the misleading words)

42

TMA in Physics

- †T: Maximize the distance travelled by an object (e.g. CO₂ car, roller coaster or catapulted object) using the laws of physics
- †M: Correctly interpret the acting forces in any situation involving motion & force
- †A: Acquire concept & skills of analysis of motion

43

TMA in algebra

- †T: solve non-routine and unfamiliar problems in varying contexts, on one's own, in which there may or may not be a function or linear relationship.
- †M: Correctly interpret the meaning of data patterns or line of 'best fit' of data points
- †A: Acquire knowledge of functions & skills of plotting point pairs, accurately drawing the graph of a line from a linear equation, etc.

44

What's the best use of precious class time?

- What is the ideal ratio of Transfer, Meaning, Acquisition in terms of what is done *in* and *out* of class?
 - Compare core academics to sports, arts, and vocational subjects
 - Look at our student survey results

45

TMA Questions

- T: What do you want learners to be able to do with content, in the future, in varied contexts, strategically, on their own?
- M: What kind of inferences do you want them to make? What conclusions should they come to? What intellectual challenges require such thinking?
- A: What knowledge and skills do learners need to achieve these longer-term understanding goals?

46

You try: TMA to clarify *your* unit goals

47

Successful Transfer	Successful Meaning	Know the Content

3 big ideas of UbD

- You are a designer*
- Focused on understanding*
- Using 'backward design'*

48

Backward Design: the 3 Stages of effective and aligned design

Stage 1: Identify understanding goals:
understanding verbs + key content

Stage 2: Determine the most appropriate assessment evidence of STAGE 1 Goals

Stage 3: Determine the most appropriate learning activities to achieve STAGE 1 Goals

49

What we typically (incorrectly) do:

Identify discrete topics to be covered

Determine how you will teach the content

When grades are due, assess the learning of the content

50

1. Consider: What does a beginning driver need to KNOW and be able TO DO?



List important Knowledge and Skills for a driver.

51

2. Now, consider: What does a good, experienced driver UNDERSTAND that a beginner (or lousy) driver does not?



List important Understandings for a driver.

52

Finally, consider: *What is the ultimate (long-term) goal of an effective Driver's Education Program?*



Summarize the Goal in 1 or 2 sentences.

53



54



Acquisition of Knowledge & Skill

Students will know...

- K1 the driving laws of their state, province or country
- K2 rules of the road for legal, courteous and defensive driving
- K3 basic car features and functions

Students will be skilled at...

- S1 procedures of safe driving under varied traffic, road & weather conditions
- S2 signalling/communicating intentions
- S3 quick response to surprises
- S4 parallel parking

55

Meaning

UNDERSTANDINGS

Students will understand that...

- U1 Defensive driving assumes that other drivers are not attentive and that they might make sudden or ill-advised moves.
- U2 The time needed to stop or react is deceptively small, thus requiring constant anticipation & attention.
- U3 Effective drivers constantly adapt to the various traffic, road, & weather conditions.



Acquisition of Knowledge & Skill

Students will know...

- K1 the driving laws of their state, province or country
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- K3 basic car features and functions

Students will be skilled at...

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- S2 signalling/communicating intentions
- S3 quick response to surprises
- S4 parallel parking

56


Meaning	
UNDERSTANDINGS <i>Students will understand that...</i> U1 Defensive driving assumes that other drivers are not attentive and that they might make sudden or ill-advised moves. U2 The time needed to stop or react is deceptively small, thus requiring constant anticipation & attention. U3 Effective drivers constantly adapt to the various traffic, road, & weather conditions.	ESSENTIAL QUESTIONS <i>Students will keep considering...</i> Q1 What must I anticipate and do to minimize risk and accidents when I drive? Q2 What makes a courteous and defensive driver?
Acquisition of Knowledge & Skill	
<i>Students will know...</i> K1 the driving laws of their state, province or country K2 rules of the road for legal, courteous and defensive driving K3 basic car features and functions	<i>Students will be skilled at...</i> S1 procedures of safe driving under varied traffic, road & weather conditions S2 signalling/communicating intentions S3 quick response to surprises S4 parallel parking

Stage 1 – Desired Results	
Transfer	
<i>Students will be able to independently use their learning to...</i> T1 drive courteously and defensively without accidents or needless risk. T2 anticipate and adapt their knowledge of safe and defensive driving to various traffic, road and weather conditions.	
Meaning	
UNDERSTANDINGS <i>Students will understand that...</i> U1 Defensive driving assumes that other drivers are not attentive and that they might make sudden or ill-advised moves. U2 The time needed to stop or react is deceptively small, thus requiring constant anticipation & attention. U3 Effective drivers constantly adapt to the various traffic, road, & weather conditions.	ESSENTIAL QUESTIONS <i>Students will keep considering...</i> Q1 What must I anticipate and do to minimize risk and accidents when I drive? Q2 What makes a courteous and defensive driver?

Stage 1 – Desired Results	
Established Goals	Transfer
National Driver Development Standards D1 Demonstrate a working knowledge of rules, regulations and procedures of operating an automobile. D2 Use critical search skills to obtain current information and make it their own to correct for changes in speed and position adjustments. D3 Interact with other drivers within the Highway Transportation System by adjusting speed, space, and communication to avoid conflicts and reduce risk. D4 Demonstrate balanced vehicle movement through steering, braking, and accelerating in a precise and timely manner throughout a variety of sub-unit conditions. Source: American Driver & Traffic Safety Education	<i>Students will be able to independently use their learning to...</i> T1 drive courteously and defensively without accidents or needless risk. T2 anticipate and adapt their knowledge of safe and defensive driving to various traffic, road and weather conditions.
UNDERSTANDINGS	ESSENTIAL QUESTIONS
<i>Students will understand that...</i> U1 Defensive driving assumes that other drivers are not attentive and that they might make sudden or ill-advised moves. U2 The time needed to stop or react is deceptively small, thus requiring constant anticipation & attention. U3 Effective drivers constantly adapt to the various traffic, road, & weather conditions.	<i>Students will keep considering...</i> Q1 What must I anticipate and do to minimize risk and accidents when I drive? Q2 What makes a courteous and defensive driver?
Acquisition of Knowledge & Skill	
<i>Students will know...</i> K1 the driving laws of their state, province or country K2 rules of the road for legal, courteous and defensive driving K3 basic car features and functions.	<i>Students will be skilled at...</i> S1 procedures of safe driving under varied traffic, road & weather conditions S2 signalling/communicating intentions S3 quick response to surprises S4 parallel parking.

Stage 1 – Desired Results	
Established Goals	Transfer
What Content Standards, Program and/or Mission related goals will this unit address?	<i>Students will be able to independently use their learning to...</i> T1 drive courteously and defensively without accidents or needless risk. T2 anticipate and adapt their knowledge of safe and defensive driving to various traffic, road and weather conditions.
UNDERSTANDINGS	ESSENTIAL QUESTIONS
<i>Students will understand that...</i> U1 Defensive driving assumes that other drivers are not attentive and that they might make sudden or ill-advised moves. U2 The time needed to stop or react is deceptively small, thus requiring constant anticipation & attention. U3 Effective drivers constantly adapt to the various traffic, road, & weather conditions.	<i>Students will keep considering...</i> Q1 What must I anticipate and do to minimize risk and accidents when I drive? Q2 What makes a courteous and defensive driver?
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Three-Minute Pause



Meet in groups of 3 - 5 to...

- ✓ summarize key points.
- ✓ add your own thoughts.
- ✓ pose clarifying questions.

61

Stage 2 - Evidence

Cuing	Assessment Evidence
<p>↑</p> <p>What criteria will be used in each assessment to evaluate attainment of the Desired Results?</p> <p>Regardless of the format of the assessment, what qualities are most important?</p>	<p>PERFORMANCE TASKS:</p> <p>How will students demonstrate their understanding (meaning-making and transfer) through complex performance?</p> <p style="text-align: center; border: 1px solid gray; padding: 5px; margin: 10px auto; width: 80%;">Consider the six facets when developing assessments of understanding. Optional: Use the G.R.A.S.P.S. elements to frame an authentic context for the task(s).</p> <p>OTHER EVIDENCE:</p> <p>What other evidence will you collect to determine whether Stage 1 goals were achieved?</p>

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Stage 1 - Desired Results

Established Goals	Learning	
<p>National Driver Development Standards</p> <p>1. Demonstrate a working knowledge of rules, signs, laws and procedures of traffic and transportation.</p> <p>2. Apply search skills to obtain and analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>3. Apply critical thinking skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>4. Apply problem-solving skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>5. Apply decision-making skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>6. Apply communication skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>7. Apply social skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>8. Apply self-management skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>9. Apply leadership skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>10. Apply global skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p>	<p>Students will be able to independently use their learning to:</p> <p>1. Anticipate and adjust their knowledge of safe and defensive driving to various traffic, road and weather conditions.</p> <p>UNDERSTANDINGS</p> <p>1. Anticipate and adjust their knowledge of safe and defensive driving to various traffic, road and weather conditions.</p> <p>2. Apply search skills to obtain and analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>3. Apply critical thinking skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>4. Apply problem-solving skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>5. Apply decision-making skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>6. Apply communication skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>7. Apply social skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>8. Apply self-management skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>9. Apply leadership skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>10. Apply global skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p>	<p>ESSENTIAL QUESTIONS</p> <p>Students will keep considering:</p> <p>1. What must I anticipate and do to minimize risk and accidents when I drive?</p> <p>2. What makes a courteous and defensive driver?</p> <p>Acquisition of Knowledge & Skills</p> <p>Students will know:</p> <p>1. Procedures of safe driving their varied traffic, road & weather conditions</p> <p>2. Signaling/communicating intentions</p> <p>3. Quick response to surprises</p> <p>4. Parallel parking</p>

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Stage 3 - Learning Plan

Cuing	Learning Plan
<p>Pre-assessment of driving knowledge, skill, understandings, and attitudes using surveys and simulations.</p> <p>LEARNING EVENTS</p> <p><i>Note: This is a merely suggestive overview of a unit plan. A typical unit summarizes all learning events in more detail.</i></p> <p>1. Anticipate and adjust their knowledge of safe and defensive driving to various traffic, road and weather conditions.</p> <p>2. Apply search skills to obtain and analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>3. Apply critical thinking skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>4. Apply problem-solving skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>5. Apply decision-making skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>6. Apply communication skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>7. Apply social skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>8. Apply self-management skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>9. Apply leadership skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p> <p>10. Apply global skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.</p>	<p>Formative assessment and informal feedback by instructor as students drive to apply skills learned while driving on road.</p> <p>Look for each student to demonstrate and skill development.</p> <p>Students should be able to:</p> <ul style="list-style-type: none"> • Anticipate and adjust their knowledge of safe and defensive driving to various traffic, road and weather conditions. • Apply search skills to obtain and analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply critical thinking skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply problem-solving skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply decision-making skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply communication skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply social skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply self-management skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply leadership skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems. • Apply global skills to analyze information and use a variety of tools, devices, and resources to identify and solve problems.

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Stage 3 - Learning Plan	
<p>What's the goal for this type of event?</p>	<p>What pre-assessments will you use to check students' prior knowledge, skill levels and potential misconceptions?</p> <hr/> <p style="text-align: center;">LEARNING EVENTS</p> <p>Are all three types of goals (acquisition, meaning, and transfer) addressed in the learning plan?</p> <p>Does the learning plan reflect principles of learning and best practices?</p> <p>Is there tight alignment across all three stages?</p> <p><i>While detailed lesson plans are not expected here, you should include sufficient information so that another teacher who is familiar with the unit's content could understand and follow the basic learning plan. That means not just stating WHAT learners will do but WHY the event is proposed - its purpose.</i></p> <p><i>Optional: Use the column on the left to code your learning activities; e.g., their alignment with Stage 1 elements, T-M-A, or W.H.E.R.E.T.O.</i></p>
	<p>How will you monitor students' progress towards acquisition, meaning-making, and transfer during lesson events?</p> <p>What are potential rough spots and student misunderstandings?</p> <p>How will students get the feedback they need and opportunities to make use of it?</p>

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Part 2: Unpacking Standards

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Essential Questions on Standards

- +What do the Standards demand of us? What don't they demand of us (though people often say otherwise)?
- +Where are we obligated and where are we free to decide?
- +What do the Standards address? What don't they address, by design?
- +What is the optimal relationship between Standards and Curriculum?

67

Understandings about Standards

- +Most educators do not understand the answers to these questions. In fact, unhelpful misunderstandings abound, impeding standards-based work locally.
- +The great challenge is to design the best possible curriculum for engagement and effectiveness. That has NOTHING to do with how Standards are written and organized!

68

Think: Supreme Court

- +The job locally is to make a considered judgment about the practical meaning of the general 'law' – what it implies in specific situations.
- +Critical to show what it does and doesn't imply – cf. concept attainment (T-charts)⁶⁹

Tip #1: verbs

- +**You must look closely at all the key verbs in the document and determine their meaning for local curriculum, instruction, and (especially) assessment**

70

Tip #2: Noun phrases

- +**You must look closely at all the key noun phrases in the document and determine their meaning for local curriculum, instruction, and (especially) assessment.**

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Tip #3: key qualifiers

- +**The qualifying adverbs or adjectives in those phrases will typically be the key criteria , to be turned into rubrics**

72

An example from Common Core

1. **Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.**

73

An example from Common Core
(color coded)

1. **Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.**

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Your turn:

- Take the following standard and ‘unpack’ it – Verbs, nouns, qualifiers, goal type:

1. *Initiate and participate effectively in a range of collaborative discussions ... on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.*

- a. Come to discussions prepared, ... explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well reasoned exchange of ideas...

75

Tip #4: goal type

+ You must infer the *kinds of goals* they are – i.e. whether the goals require acquisition, meaning, or transfer, and design assessments and instruction accordingly

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Tip #5: indicators & anchors
 +Identify indicators (and eventually, rubrics) to better understand and show others what IS and IS NOT implied by the Standard (e.g. T-charts).
 +Identify 'anchor' tasks and samples of work to show what 'up to standard' means concretely

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How different designs tackle the challenges: Mastery Learning

<i>How did they tweak curriculum, environment, elements of learning to do it?</i>	<p style="text-align: center;">Effective</p> <ul style="list-style-type: none"> • Work at your own pace • By varying time, we get uniformly high achievement • Fair assessments • Transparent and incremental • Feedback as needed, given where you are • Students know what to do, where they are, how to get there
---	---

78

How different designs tackle the challenges: PBL & Case Method

<i>How did they tweak curriculum, environment, elements of learning to do it?</i>	<p style="text-align: center;">Effective</p> <ul style="list-style-type: none"> • Far more likely than 'coverage' to cause transfer of learning • Lots of helpful feedback and opportunities to use it in current and future problems • Coaching and just-in-time teaching in support of needs
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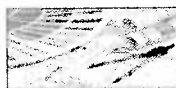
79

IDEAS: How different designs tackle the challenge – 'Clickers' in lectures

<i>Activities, Instruction</i>	<p style="text-align: center;">Engaging</p> <ul style="list-style-type: none"> • Brief lectures, often in response to student Qs • Interesting problems • Much sharing, arguing, probing • Far more useful and repeated feedback than typical • Testing of ideas; suspense with clickers and results posted 	<p style="text-align: center;">Effective</p> <ul style="list-style-type: none"> • Lots of feedback to adjust understanding, practice transfer • Countless opportunities to ask Qs and consider key issues, test ideas, explore misunderstandings, have safe space in large class • Teacher records all individual responses, can target individuals even in large class
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IDEAS: How different designs tackle the challenge – Socratic Seminar

	Engaging	Effective
Activities, Instruction	<ul style="list-style-type: none"> • Student-led inquiry & discussion - less passive listening; focus on meaning not information • Constant feedback and opportunities to "test" and reveal understanding safely • Incentives to participate, no aimless or overly-technical teaching 	<ul style="list-style-type: none"> • Constant (good) pressure to use higher-order thinking in offering and probing ideas/text • Seminars help students develop listening abilities; respect, make connections & transfer learning

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How my 'analogous case' of soccer does it:

	Engaging	Effective
Activities, Instruction	<ul style="list-style-type: none"> • Clear challenging goal, intrinsic motivation to play and master the game • Intense ongoing feedback; credible standard & criteria • Almost all learning by doing; teaching on an as-needed basis; clear whole/part back and forth; choice in positions 	<ul style="list-style-type: none"> • All drills and practices transparently support transfer to game • Utterly transparent and demystified • Practices, drills all designed backward from the demands of the game; practice is modified as needed, based on results

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