



**Tennessee
Career & Technical
Education**

Depth of Knowledge = Rigor



Hot Topic: “What is Proficient? What does it look like?”

- Rubric Training Notebook
- Rubric Webpage and Rubric Webinar Series
- Anchor Papers
- 2010-2011 Benchmark Papers Project
- CTE Online!

The Big Picture



- Create five assignments for a course within a program of study
- Submit assignments to program area consultant for peer review
- Submit five approved assignments to Gay Burden by January 10, 2011
- Teach assignments
- Collect samples of student work to bring to June 7, 2011 meeting.

Two Important Topics to Consider



Tennessee Career and Technical Education (CTE) Division

Competency Attainment Rubric

	Advanced	Proficient	Basic	Below Basic
	4	3	2	1
Knowledge Attainment				
Technical Skills				
Problem Solving				
Career Awareness				
Communication/Literacy				

What are my instructional gaps?

Tennessee Career and Technical Education (CTE) Division

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Knowledge Attainment				
Technical Skills				
Problem Solving				
Career Awareness				
Communication/Literacy				

Do I need to include all five categories in every assignment?

The Bigger Picture: An On-Going Process

Instructional improvement occurs as teacher assignments are aligned with competencies with **PROFICIENT** in mind.

Competency profiles were developed prior to the Rubric process. Future competency revisions and development will align with **RUBRIC**.

STUDENT PERFORMANCE

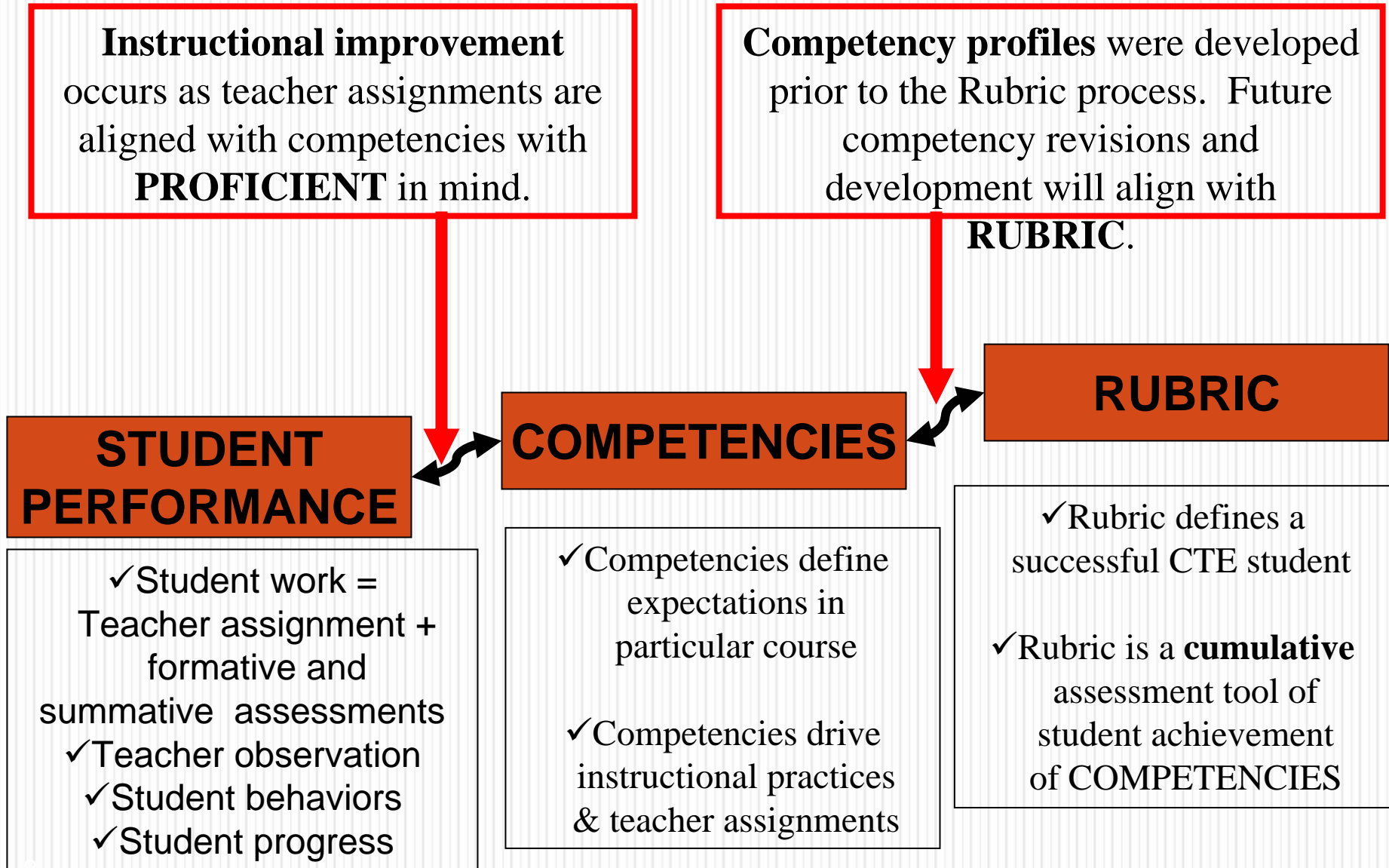
- ✓ Student work = Teacher assignment + formative and summative assessments
- ✓ Teacher observation
- ✓ Student behaviors
- ✓ Student progress

COMPETENCIES

- ✓ Competencies define expectations in particular course
- ✓ Competencies drive instructional practices & teacher assignments

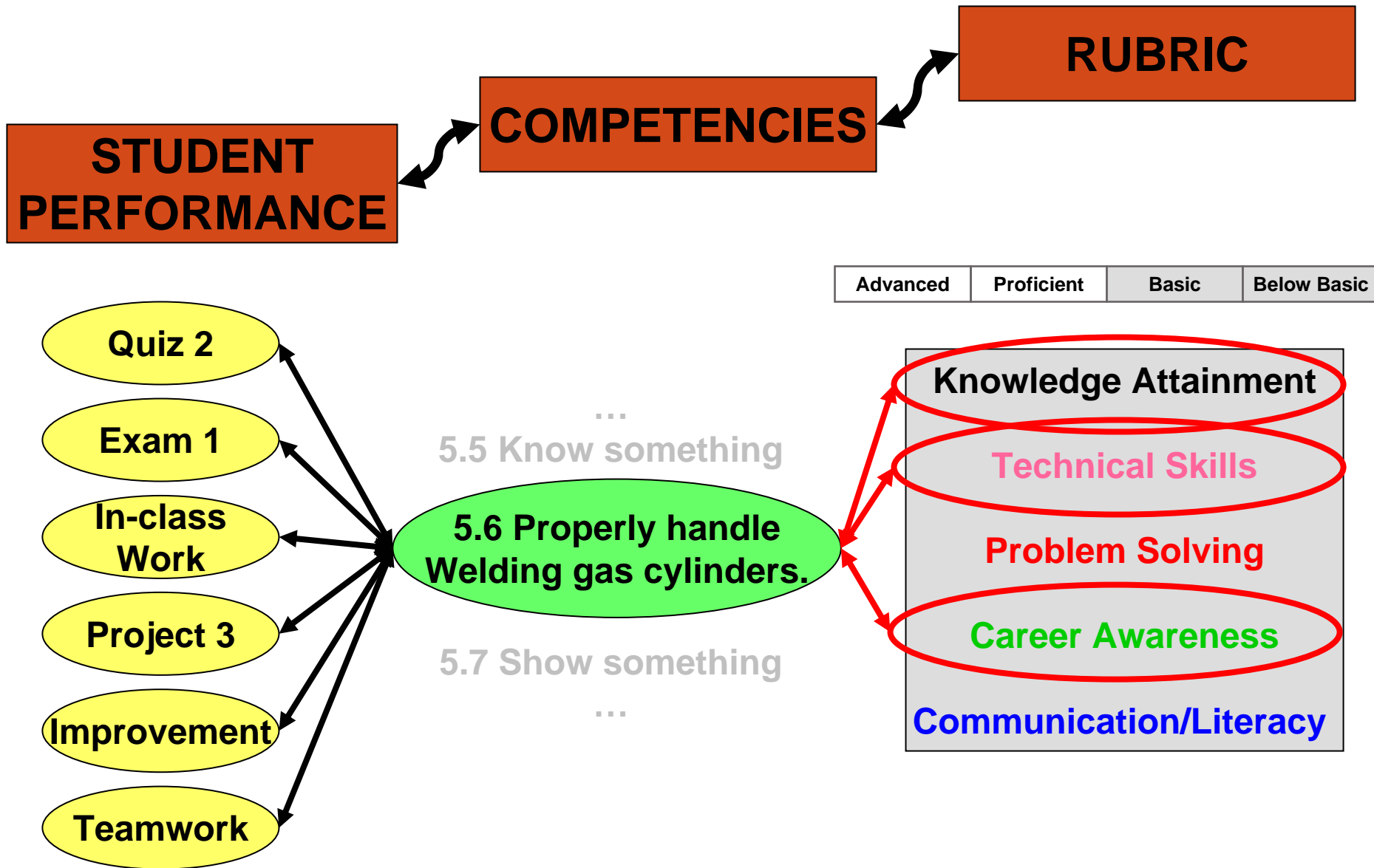
RUBRIC

- ✓ Rubric defines a successful CTE student
- ✓ Rubric is a **cumulative** assessment tool of student achievement of **COMPETENCIES**



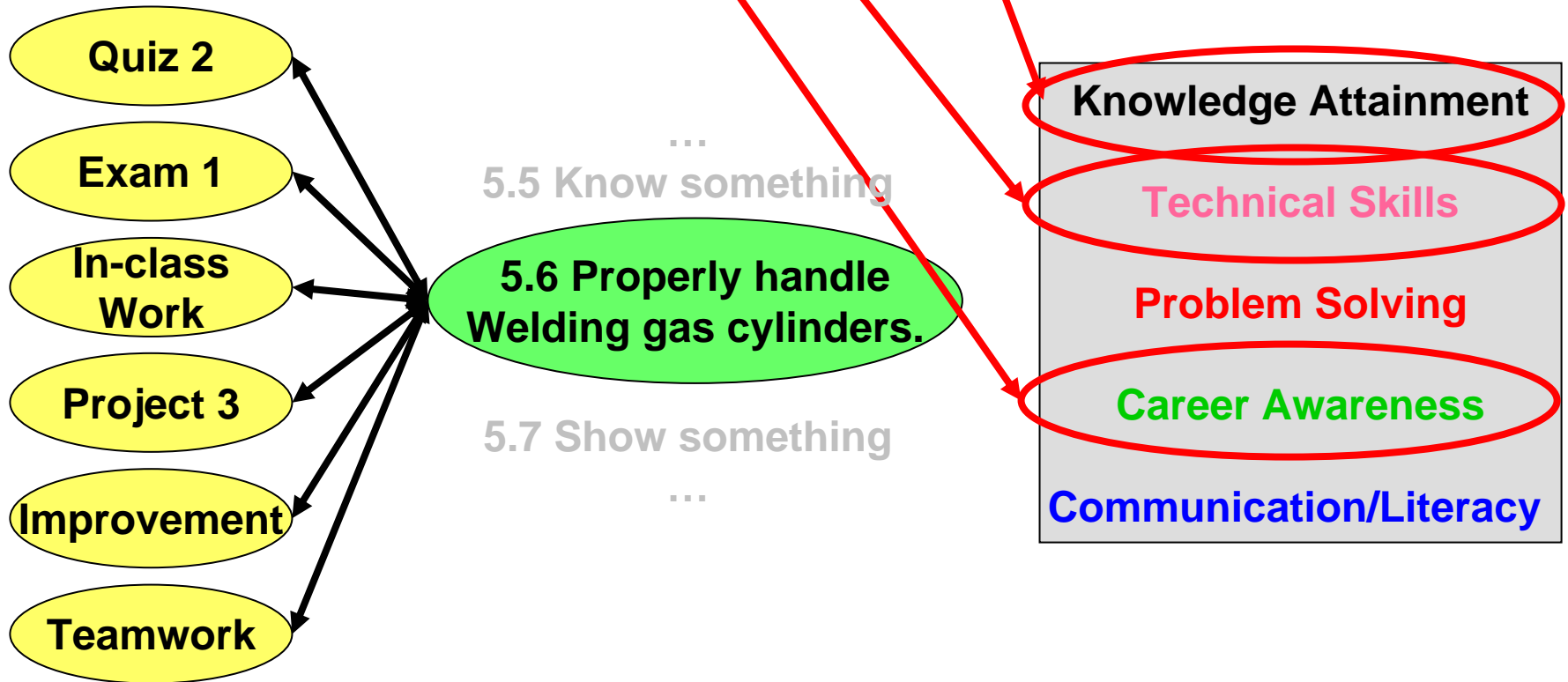


Another Look at The Big Picture





Determining Student Performance Level



Rubric Implementation Efforts and Teacher Training

Dr. Lloyd D. Brooks
Director of Assessment/Interim Chair
Professor of Management Information Systems
The University of Memphis

Dr. Norman Webb's Depth of Knowledge (DOK)

Lois Barnes, Director of State Services
Southern Region Education Board (SREB)

Depth of Knowledge (1997)

Level 1 Recall

Recall of a fact, information, or procedure.

Level 2 Skill/Concept

Use information or conceptual knowledge, two or more steps, etc.

Level 3 Strategic Thinking

Requires reasoning, developing plan or a sequence of steps, some complexity, more than one possible answer.

Level 4 Extended Thinking

Requires an investigation, time to think and process multiple conditions of the problem.

BLOOM'S TAXONOMY

KNOWLEDGE / REMEMBERING

"The recall of specifics and universals, involving little more than bringing to mind the appropriate material"

COMPREHENSION / UNDERSTANDING

"Ability to process knowledge on a low level such that the knowledge can be reproduced or communicated without a verbatim repetition."

APPLICATION / APPLYING

"Using information in another familiar situation."

ANALYSIS / ANALYSING

"Breaking information into parts to explore interrelationships and relationships."

SYNTHESIS and EVALUATION / EVALUATING and CREATING

"Putting together elements & parts to form a whole, then making value judgments about the method."

WEBB'S DOK

RECALL

Recall of a fact, information, or procedure (e.g., What are 3 critical skill cues for the overhand throw?)

SKILL/CONCEPT

Use of information, conceptual knowledge, procedures, two or more steps, etc.

STRATEGIC THINKING

Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer

EXTENDED THINKING

Requires an investigation; time to think and process multiple conditions of the problem or task.

Hess's Bloom's & DOK Levels

Bloom's Revised Taxonomy of Cognitive Process Dimensions	Webb's Depth-of-Knowledge (DOK) Levels			
	Level 1 Recall & Reproduction	Level 2 Skills & Concepts	Level 3 Strategic Thinking/ Reasoning	Level 4 Extended Thinking
Remember				
Understand				
Apply				
Analyze				
Evaluate				
Create				

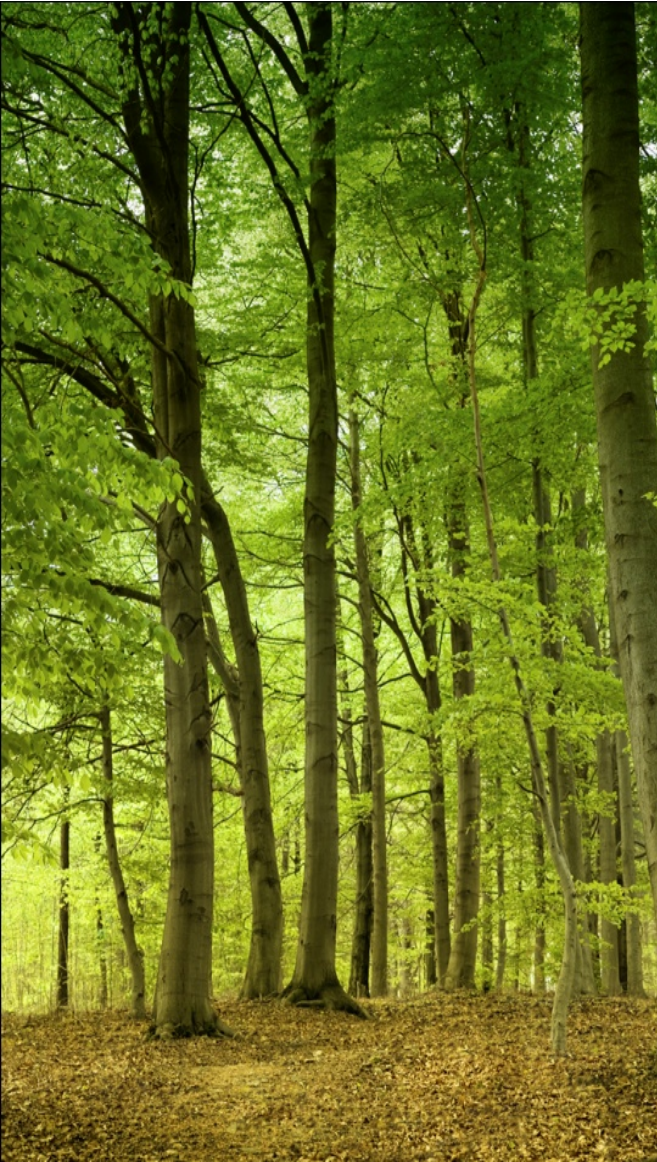
Depth of Knowledge



- Level 1 — Identify this utensil. (fork)
- Level 2 — Explain the function of the fork.
- Level 3 — Identify two examples of when a fork would not be the best utensil for a type of food and explain why.
- Level 4 — Design an investigation to determine the optimal number and length of tines for a salad fork.



Depth of Knowledge



- Level 1 — Identify the tree.
- Level 2 — Explain the function of the leaves.
- Level 3 — Explain how a drought might affect the growth of the tree.
- Level 4 — Design an investigation of seedling growth to determine the best fertilizer for this type of tree.

Which of these means about the same as the word *gauge*?

a. balance

b. measure

c. select

d. warn

A car odometer registered 41,256.9 miles when a highway sign warned of a detour 1,200 feet ahead. What will the odometer read when the car reaches the detour? (5,280 feet = 1 mile)

- (a) 42,456.9
- (b) 41,279.9
- (c) 41,261.3
- (d) 41,259.2
- (e) 41,257.1

Did you use the calculator on this question?

Yes

No

$$\begin{array}{r} 121 \\ 13 \\ 32 \\ + 34 \\ \hline \end{array}$$

- 1) 190
- 2) 200
- 3) 290
- 4) N

Which of these conclusions is best supported by information from the passage?

- a. If a candidate meets the personal and educational qualifications and is in fair physical shape, his or her chances of becoming an agent are very good.**
- b. Compared with other law enforcement agencies in the country, the F.B.I. has a low success rate for tracking down and apprehending suspected offenders.**
- c. The job of an agent is not for everyone; it takes someone with special training who is not afraid of danger and doesn't mind being socially isolated at times.**
- d. The life of a federal investigator is not as interesting as most people think; agents spend most of their time working at desks.**



Use Caution!

- Be careful not to rely solely on the action verb; verbs are not as important as the words that follow them.
- Consider what the task is asking the student to do.
 - Example: “Explain to me where you live” does not raise the DOK of a simple rote response.
 - Even if the student has to use addresses or landmarks, the student is doing nothing more than recalling and reciting.

Remember -

- The Depth of Knowledge is **NOT** determined by the verb, **but the context in which the verb is used and the depth of thinking required.**

Recall & Reproduction (DOK 1)	Skills & Concepts /Basic Reasoning (DOK 2)	Strategic Thinking/Complex Reasoning (DOK 3)	Extended Thinking/ Reasoning (DOK 4)
<u>Describe</u> effective self-management and coping strategies.		<u>Describe</u> a short-term budgeting plan using supporting evidence from financial management practices.	
	<u>Describe</u> how an individual's behavior and choices affect the body.		
			<u>Describe</u> how urban and rural areas differ and create an effective environmental action plan inferring their differences.

DOK is Not About Difficulty

Difficulty only tells us how many students can answer a question correctly.

*How many of you know the definition of the word *exaggerate*? DOK 1 Recall

If most of you know the definition, it is an easy question.

*How many of you know the definition of the words *prescient*? DOK 1 Recall

If most of you do not know the definition, it is a difficult question.

It Is Still A Level 1

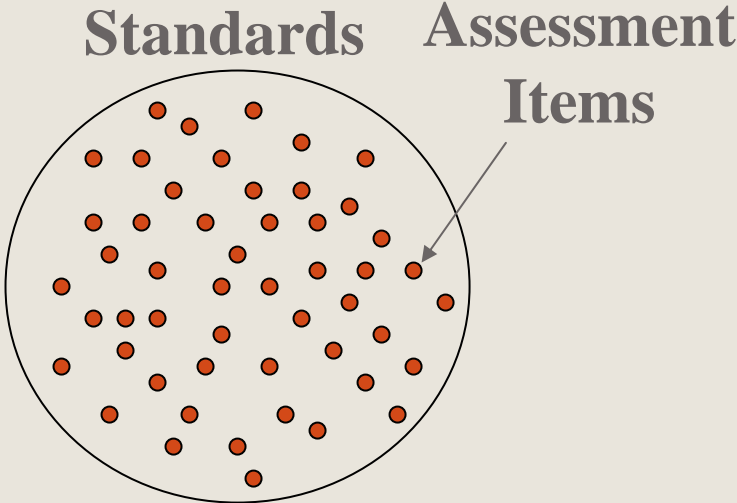
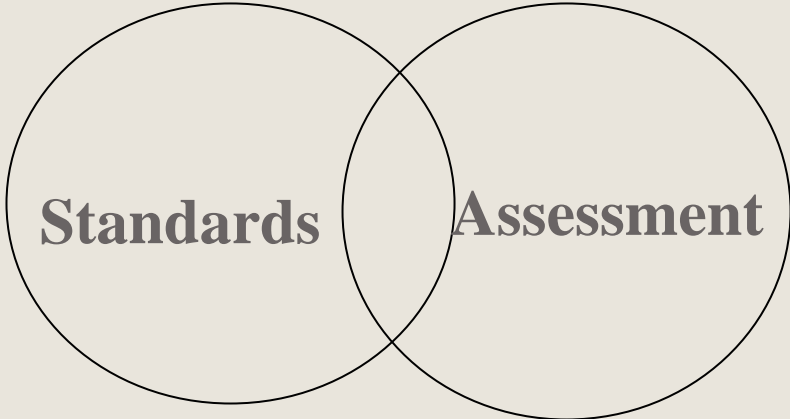
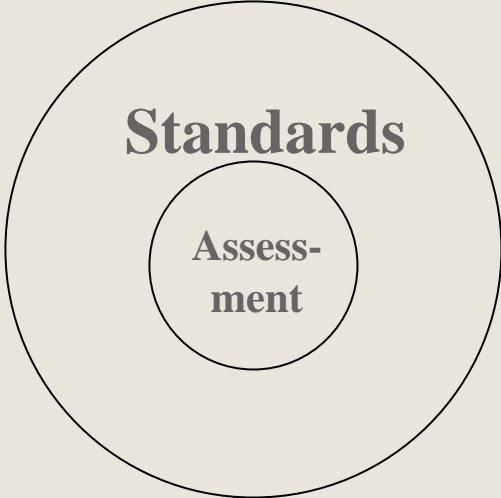


Marc Umile poses for a picture in front of a projection of the string of numbers known as pi in Philadelphia, Friday, March 2, 2006. Umile is among a group of people fascinated with pi, a number that has been computed to more than a trillion decimal places. He has recited pi to 12,887 digits, perhaps the U.S. record. (AP Photo/Matt Rourke)

DOK is About Complexity

- Level 1 requires students to use simple skills or abilities.
- Level 2 includes the engagement of some mental processing beyond recalling.
- Level 3 requires some higher level mental processing like reasoning, planning, and using evidence.
- Level 4 requires complex reasoning, planning, developing, and thinking over a longer period of time.

Degree of Alignment



Benchmark Assignments

- Five assignments (each one focused on a separate Rubric category)

Rubric Category	Webb's DOK	Assignment Length
Knowledge Attainment	Level 3	More than 1 day
Technical Skills	Level 3	More than 1 day
Problem Solving	Two of these three assignments must be a one-day assignment; Target DOK levels 2-3; Target CTE Rubric Level 3	
Career Awareness		
Communication/ Literacy		

Benchmark Template

Teacher Name:
Email Address:
Program of Study:
Course:
Course Standard(s) (write out standard):
Course Competency(ies) (write out competencies):
Aligned to Academic/Core Competency(ies) (write out competencies):
Assignment Idea: (Summary of the task, challenge, investigation, career-related scenario, problem, or community link)
Essential Question: (Students put forth more effort if they are faced with complex, open-ended, challenging, and meaningful/authentic questions)
Rubric Category(ies):
Webb's DOK Level of Assignment:
Materials/Resources Required:
Time/Duration of Assignment:
Assignment : (Attach assignment given to student and any other documents given as part of the handout)
Teaching Tips:
Differentiation methods: (Scaffolding/Extensions, for example, modifications provided for IEP students or GT students)

Timeline:

1. Revise/Create five assignments based on template.
2. Submit assignments **electronically** (as completed) to program area consultant:
 - Covered all parts in the template
 - Aligned assignment with standard(s)/competency(ies)
 - Identified correct DOK level
 - Targeted correct Rubric category
3. Lois and Gay reviewed assignments on January 13-14
5. Incorporate five assignments into spring semester lesson plans.
6. Collect samples of student work for all five assignments.
7. Bring samples of student work to June 7 meeting.

Putting it in Practice:

Table teams examine draft Benchmark Papers.

- Aligned assignment with standard(s)/competency(ies)
- Identified correct DOK level
- Targeted correct Rubric category(ies)
- Strengths/weaknesses of assignment
 - Essential Question
 - Student Engagement
 - Connecting activity to competency
 - Appropriate modifications/extensions for IEP and GT students
 - Other suggestions for teacher feedback

Online PD Opportunities/Rubric Resources

Webinar Series :

1. [eTIGER Data Reporting Steps](#) [Presentation Slides](#) [Handouts](#)

2. [Why and How to Apply Rubric](#) [Presentation Slides](#)

Inter-Rater Anchor Papers - Group A

Inter-Rater Anchor Papers - Group A Answer Key

3. [Looking at Student Work Tuning Protocol](#) [Presentation Slides](#)

- **LASW Tuning Protocol**

Thank you CTE Directors...



Thank you!

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