

Depth of Knowledge Overview

Southwest Arkansas Education Cooperative
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2018

Objectives:

- Provide context for a better understanding of DOK levels
- Understand the importance of aligning standards, curriculum and assessment
- Work toward a common understanding of content complexity
- Differentiate between Bloom's Taxonomy and DOK

Anticipation Guide - DOK

Place a ✓ next to each sentence that is true.

- ___ Depth of Knowledge (DOK) is about difficulty.
- ___ DOK is about complexity.
- ___ DOK is about what students are expected to know and be able to do related to complexity.
- ___ DOK is about what follows the verb.
- ___ DOK is a system for categorizing cognitive demand.
- ___ DOK has four levels (recall, basic reasoning, strategic thinking, extended thinking).

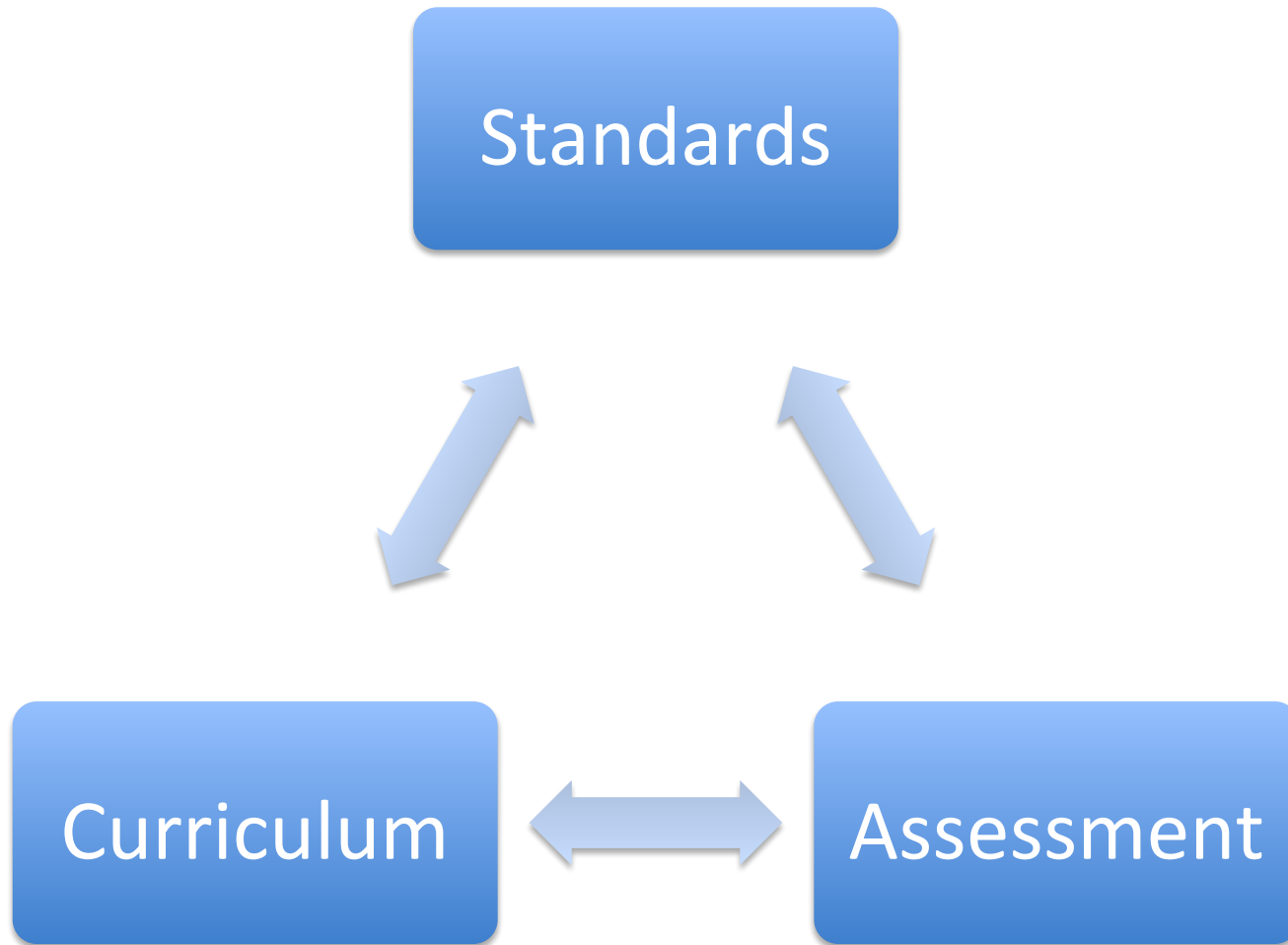
Meet Norm

**Dr. Norman L. Webb
Senior Research Scientist**

**Wisconsin Center for
Education Research ,
University of
Wisconsin-Madison**



Why DOK was born?



“Alignment is the degree to which expectations, curriculum, and assessments are in agreement and serve in conjunction with one another to guide the system toward students learning what is expected.” (Webb,1997)

What is DOK?

- DOK **measures** the degree to which knowledge is elicited from students.
- DOK is a common language educators use to describe the **complexity of learning tasks** and test items.



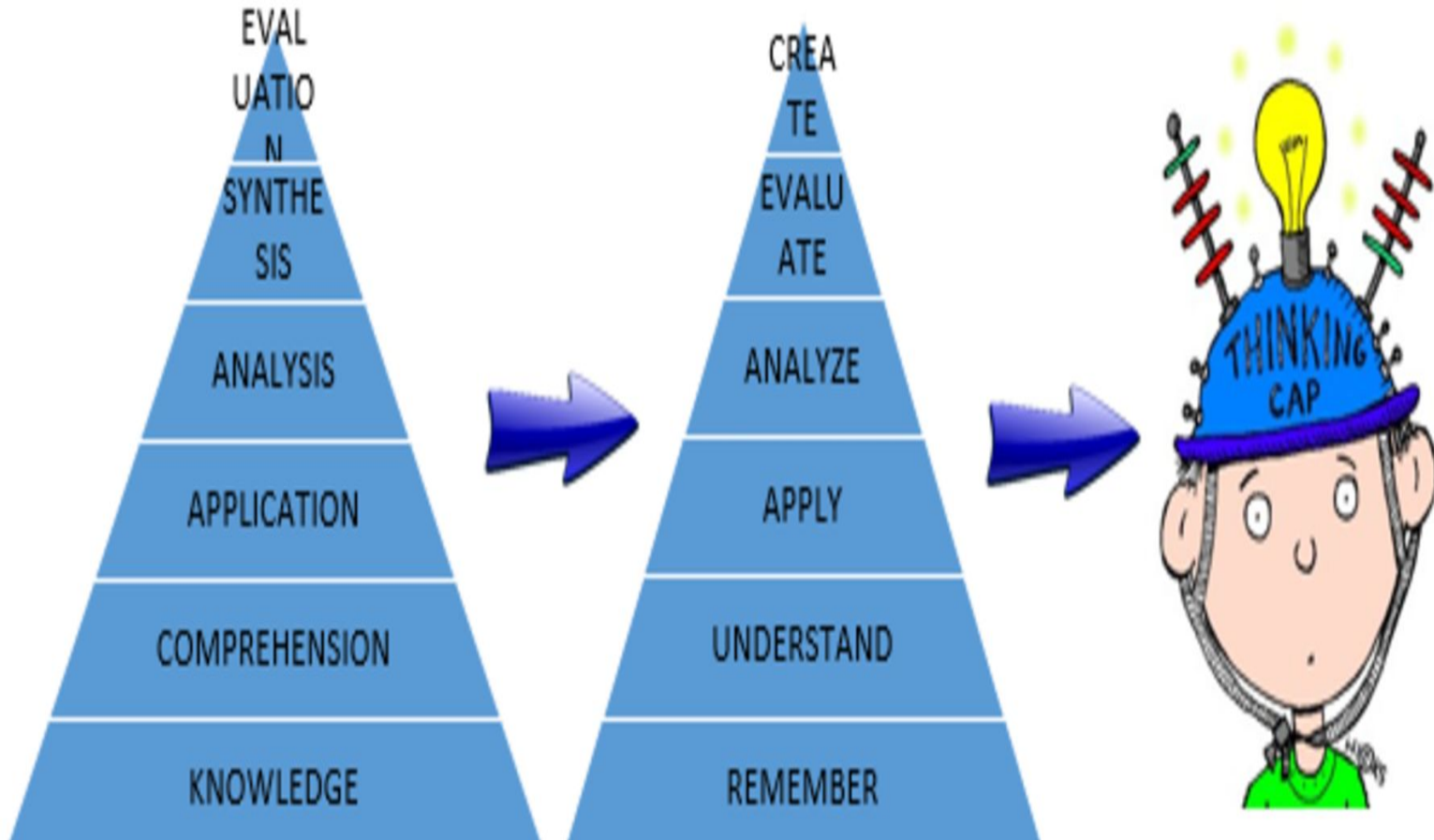
Regrouping



Card Sort

1. **Sort your cards by color.**
2. **What do you notice about each color?**
3. **Be prepared to share your response with the group.**

Evolution of Bloom's Taxonomy



Match each color with one level of Bloom's Taxonomy.



Why DOK?

- Rationale for 4 levels
- Based on contemporary learning models
- Takes into account multiple factors that contribute to content complexity
- Recognizes inherent differences in the structure of different disciplines

What do we mean by DOK levels?

- They **ARE** levels of content complexity.
- They **ARE NOT** levels of progression or prescribed sequence.
- They **ARE** levels of importance.

What is DOK?

Four Levels of Webb's DOK:

1. Recall & Reproduction
2. Skills & Concepts
3. Strategic Thinking & Reasoning
4. Extended Thinking

DOK Level 1: Recall and Reproduction

- Requires **recall of information**, such as a fact, definition, term, or performance of a simple process or procedure
- Answering a Level 1 item can involve following a simple, well-known procedure or formula



DOK Level 1



Just the facts!

DOK Level 2: Skills and Concepts

- Includes the engagement of some mental processing **beyond recalling or reproducing a response**
- Items require students to make some decisions as to how to approach the question or problem
- Actions imply more than one **mental or cognitive process/step**



DOK Level 2



the
PRICE
is
Right



TOP | CHEF

DOK Level 3: Strategic Thinking

- Requires **deep understanding** exhibited through planning, using evidence, and more demanding cognitive reasoning
- The cognitive demands are **complex and abstract**
- An **assessment item** that has more than one possible answer and requires students to **justify the response**



DOK Level 3

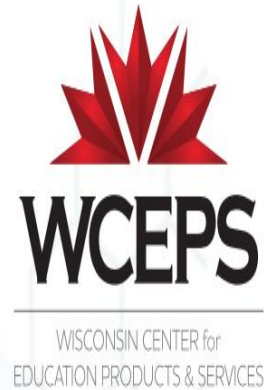


DOK Level 4



DOK Summaries

WebbAlign®



SUBJECT	SUMMARY DEFINITIONS OF DEPTH OF KNOWLEDGE (WEBB'S DOK™)			
	WEBB'S DOK LEVEL 1	WEBB'S DOK LEVEL 2	WEBB'S DOK LEVEL 3	WEBB'S DOK LEVEL 4

Marc Umile π

3.14159265358979323846264338327950288419
716939937510582097494459230781640628620
89986280348253 14808651328230
66470938446095 35940812848111
74502841027019 64462294895493
03819644288109 12847564823378
678316527120190914564856692346034861045
432664821339360726024914127372458700660
631558817488152092096282925409171536436



Difficult or Complex?



DIFFICULTY \neq COMPLEXITY

DIFFICULTY

- Amount of time and effort
- Circumstances and conditions
- Confidence and capability of the student
- Accuracy of answers
- Percentage of students answer correctly

$$(p = \frac{c}{n} \times 100)$$

COMPLEXITY

- Kind of knowledge
- Type of thinking
- Depth and extent of knowledge, understanding, and awareness
- Abstractness of concepts
- Quality of responses

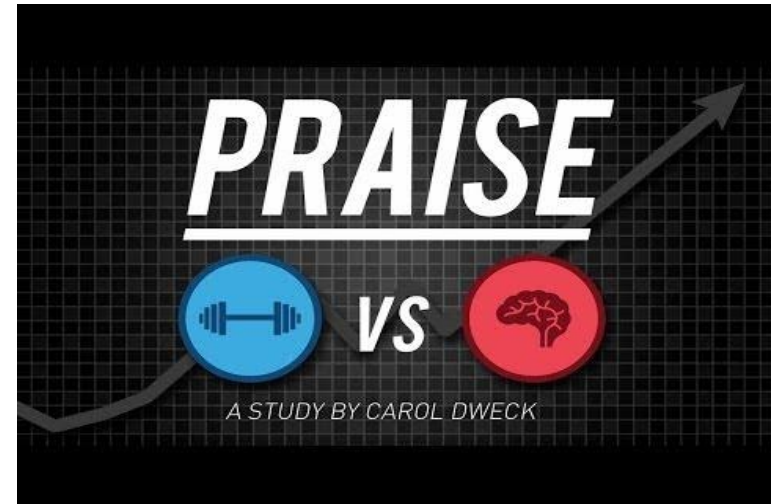
1. What is the water cycle?
2. How does the water cycle work?
3. How does the water cycle affect the world's supply of usable water?
4. What impact does human interference have on the water cycle and the world's supply of usable water?
5. What kind of plan could you develop that would protect or prevent human interference from impacting the water cycle and affecting the world's water supply or usable water?

How might these videos relate to Depth of Knowledge?

Video 1



Video 2



Marc Umile π

3.14159265358979323846264338327950288419
716939937510582097494459230781640628620
89986280348253 214808651328230
66470938446095 535940812848111
74502841027019 964462294895493
03819644288109 612847564823378
678316527120190914564856692346034861045
432664821339360726024914127372458700660
631558817488152092096282925409171536436²⁹



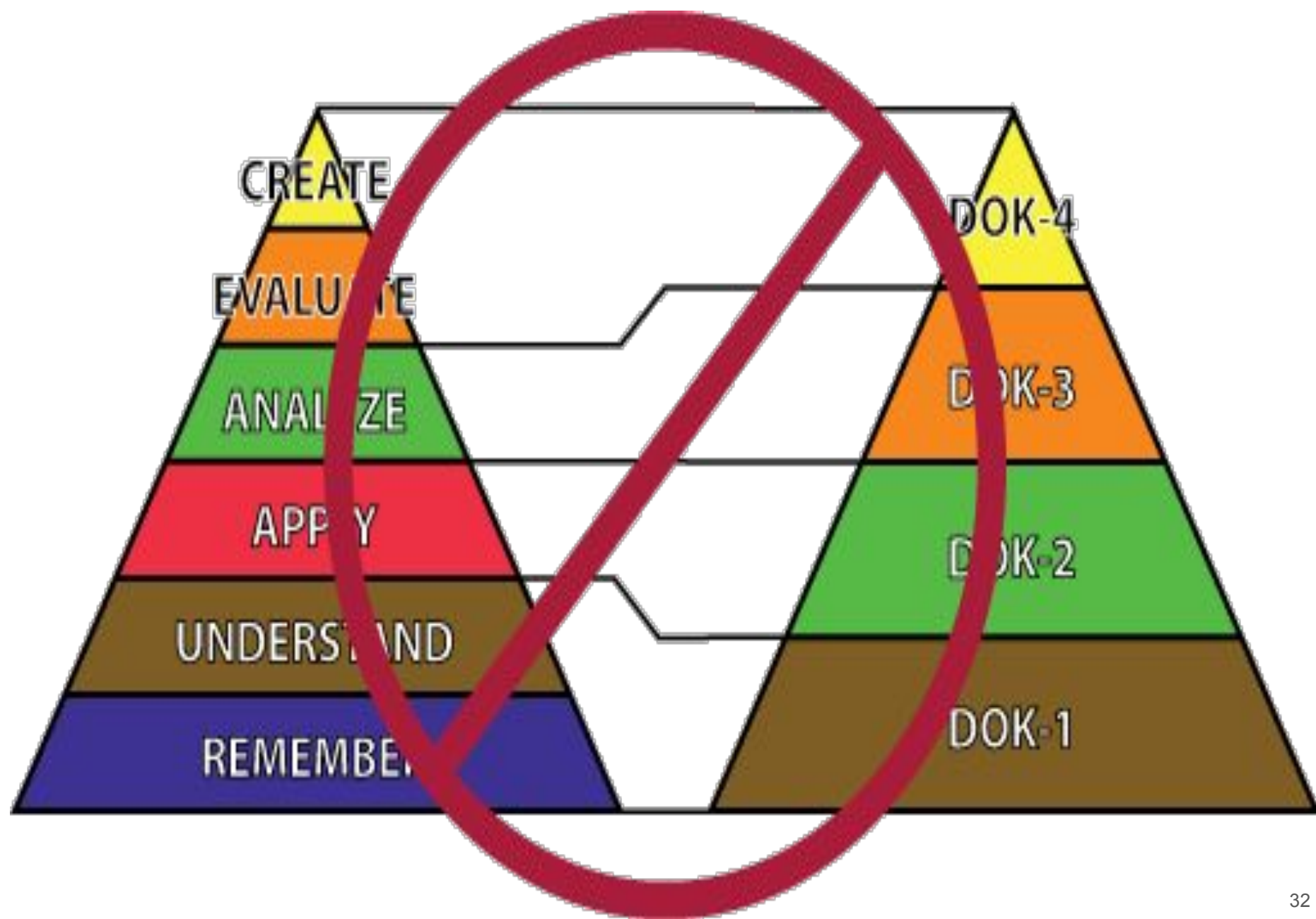
Card Sort

**Resort your cards
into**

DOK levels 1, 2, 3 or 4

Applying DOK:

- **Level 1: 9**
- **Level 2: 5**
- **Level 3: 10**
- **Level 4: 6**



Does this look familiar?



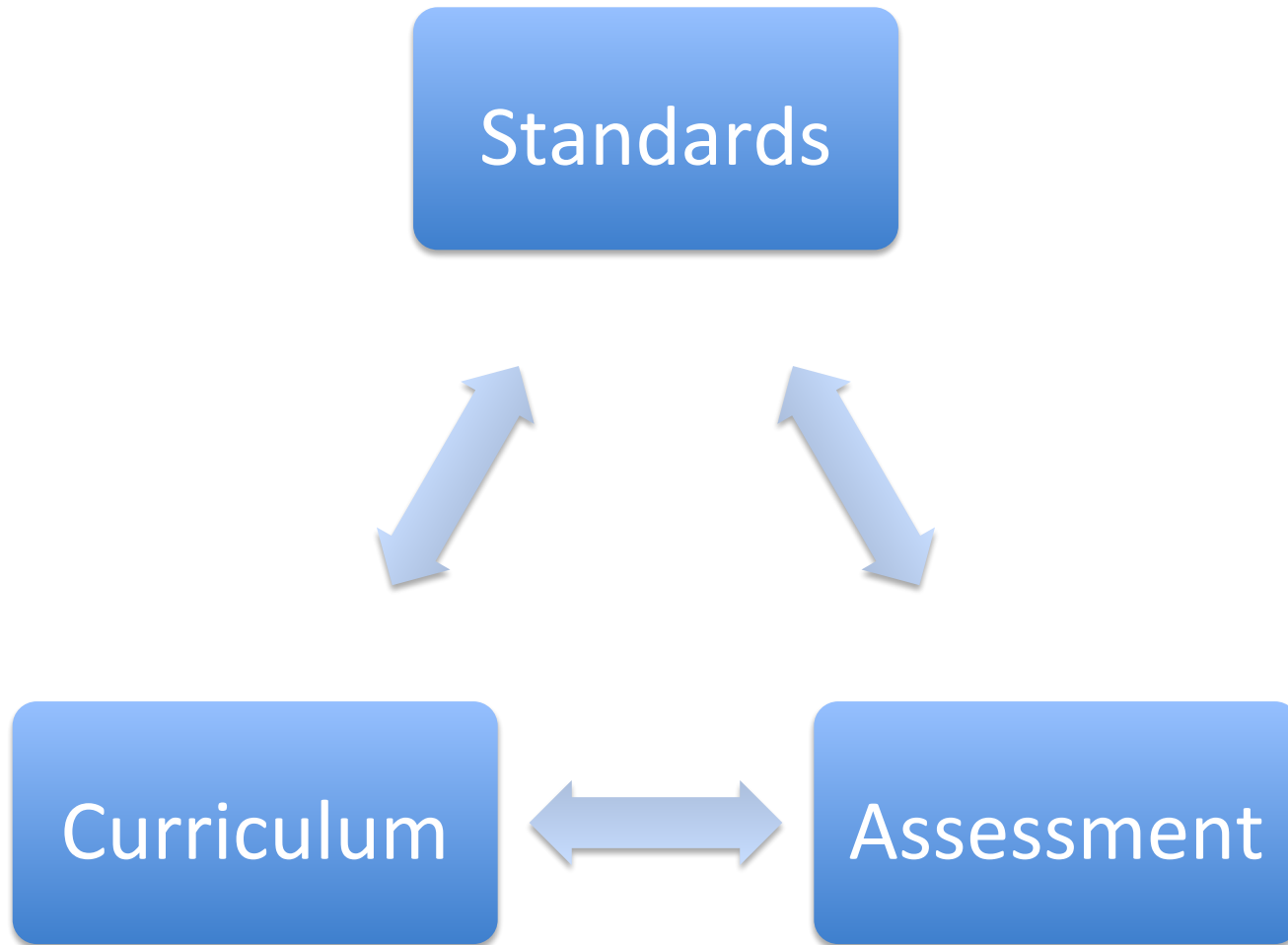
Same Verb—Three Different DOK Levels

DOK 1- Describe three characteristics of metamorphic rocks. (Requires simple recall)

DOK 2- Describe the difference between metamorphic and igneous rocks. (Requires cognitive processing to determine the differences in the two rock types)

DOK 3- Describe a model that you might use to represent the relationships that exist within the rock cycle. (Requires deep understanding of rock cycle and a determination of how best to represent it)

Alignment



UNWRAPPING SUCCESS CRITERIA

1. Capitalize the SKILLS in the standard being unwrapped
2. Underline the concepts in the standard being unwrapped
3. Appropriately identify the skills (verbs) in the unwrapped standard and put them in the column titled “SKILLS (verbs)”
4. In the column titled “SKILLS (verbs)”, appropriately capture concepts (nouns) in parentheses or bullets after each skill (verb)
5. Appropriately identify the concepts (nouns) in the unwrapped standard and put them in the column titled concepts
6. Appropriately identify the DOK (Depth of Knowledge) level for each skill and concept in the unwrapped standard
 - a. Bloom level (Recall, Understand, Apply, etc.)
 - b. DOK level (1,2,3 or 4)
 - c. Indicator in matrix that captures the rationale for the DOK level identified

Literacy

- RL.4.2** Examine a grade-appropriate literary text.
- Provide a summary.
 - Determine a theme of a story, drama, or poem from details in the text.

Science

5-ESS2-2 Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

Civics

CPI.1.C.4 Analyze the purpose, organization, authority, and function of each of the three branches of government at the federal and state levels

The DOK level describes the kind of *thinking* involved in the task, not whether it will be completed correctly.



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ACTIVITY: Anticipation Guide Table Talk

After you individually decide on your responses, share with a partner and table group the reasoning for your responses.

I think.

You think.

We think.

what do you need to
KEEP doing?

what do you need to
STOP doing?

what do you need to
START doing?

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Did we meet our Objectives?

- Provide context for a better understanding of DOK
- Work toward a common understanding of content complexity
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