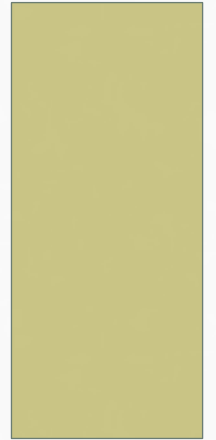


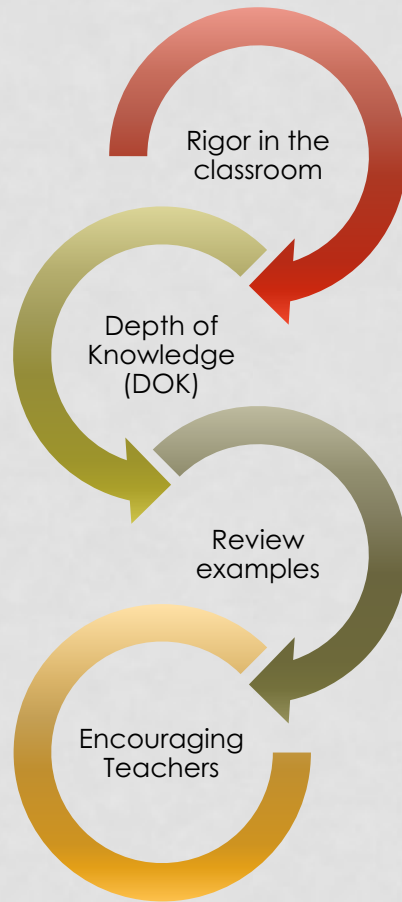


# DEPTH OF KNOWLEDGE

MELISSA THOMAS  
ASSESSMENT AND DATA RESPONSE FACILITATOR  
[melissa.thomas@henry.k12.ga.us](mailto:melissa.thomas@henry.k12.ga.us)



# TODAY'S GOALS



# WHAT DOES RIGOR MEAN TO YOU?

- How do you define rigor?

difficult

complicated

thorough

demanding

# WHAT IS RIGOR?

- Academic rigor: learning in which students demonstrate a **thorough**, in-depth **mastery** of **challenging tasks** to develop cognitive skills through **reflective thought, analysis, problem-solving, evaluation, or creativity**.
- **Rigorous learning can occur at any school grade and in any subject!**
  - International Center for Leadership in Education

# DR. NORMAN WEBB'S DOK LEVELS

*What is the **complexity** of thinking required of the standard?*

- **Level 1: Recall/Reproduction**
- **Level 2: Skills and Concepts**
- **Level 3: Strategic Thinking**
- **Level 4: Extended Thinking**

# GETTING TO KNOW DOK

## **LEVEL 1 Recall/Reproduction (Acquire; Learn the basics)**

This level requires little comprehension, no complexity, and no depth. Level 1 items are much like a foundation upon which deeper knowledge can be built.

## **LEVEL 2 Skill/Concept (Acquire/Use; Apply the learning)**

At Level 2, a student interprets material and makes simple decisions about how to approach a problem. Level 2 items require more than one step and may require an explanation, an inference, conclude, compare, summarize.

## **LEVEL 3 Strategic Thinking (Use/Extend; Strategically think about the learning)**

Level 3 requires a student to analyze, evaluate, reason, and plan and to think in much deeper and complex ways. The student is expected to support his or her thinking .

## **LEVEL 4 Extended Thinking (Extend thinking by creating complex tasks)**

A student's grasp of knowledge is deep at this level and he or she completes much deeper and complex tasks requiring the student synthesize, evaluate, and analyze.

# DOK LEVEL 1

- Characteristics:
  - Basic recall
  - Either a student knows it or not
  - No “figuring” or “solving” required
- Activities:
  - Definitions
  - Labeling diagrams
  - Lists
  - Recitation
  - Basic reproduction of steps

# DOK LEVEL 2

- Characteristics:
  - Beyond a basic description or explanation
  - Application of skill in a familiar context
- Activities:
  - Demonstration
  - Relationships
  - Comparing/contrasting
  - Classify/sort into categories
  - Describe or explain
  - Cause/effect



# DOK LEVEL 3

- Characteristics:
  - **Short-term** higher order thinking
  - Analysis/evaluation
  - Explaining the reasoning
  - Real-world problems with predictable outcomes
  - Original thought
- Activities:
  - Design a questionnaire
  - Create a flow chart to show critical stages
  - Solving a predictable problem
  - Creating graphs/charts that require students to include/exclude information and make sense of the information given by instructor

# DOK LEVEL 4

- Characteristics:
  - Synthesis
  - Reflection
  - Adjusting plans **over time**
  - Real-world problems with unpredictable outcomes
- Activities:
  - Tasks that require change of action due to new information
  - Internships
  - Persuasion
  - Creating graphs/charts that require students to include/exclude information and make sense of the information not given by instructor

# WEBB'S DOK = CONTEXT OF VERB

DOK is NOT determined by the verb, but the context in which the verb is used and the depth of thinking required.

## Same verb—used at three DOK levels

- **DOK 1- Describe two characteristics of a simile and two characteristics of a metaphor. (Simple recall)**
- **DOK 2- Describe the difference between a simile and the metaphor. (Requires cognitive processing to determine the differences between the two figurative devices)**
- **DOK 3 - Describe the difference between how the poet uses the simile and the metaphor to portray the child in the poem. (Requires deep understanding of the figurative devices and an analysis of how the poet uses them)**

QUESTIONS?



# WEBB'S DOK LEVELS

- **Measures** rigor and cognitive complexity
- If students cannot perform at the DOK level they have not mastered the standard
- Levels of DOK progress in steps; a student cannot reach a higher DOK level unless he has first mastered a lower DOK level
- Provides a method to ensure the intent of the standard and the level of complexity required by that standard matches the assessment items

# Name That DOK

	CTAE Standard and Item	DOK Level
<b>Standard</b>	Demonstrate the steps of Basic Life Support (BLS) and First Aid.	?
<b>Item/Task</b>	List the steps of CPR in the correct order.	?

Adapted from CCA Reading Support Materials -  
Kentucky Department of Education

# Name That DOK

	CTAE Standard and Item	DOK Level
<b>Standard</b>	Demonstrate the steps of Basic Life Support (BLS) and First Aid.	<b>2</b>
<b>Item/Task</b>	List the steps of CPR in the correct order.	<b>2</b>

## Explanation

**Standard – DOK 2** This standard requires basic recall of CPR skills and asks students to demonstrate the skills. The highest level of DOK is a level 2.

**Item - DOK 2.** It requires the student to recall the steps of CPR, but then raises the depth by asking students to evaluate the order of the steps. By asking this question as an open response question, it raises the level to a 2 (multiple choice could have brought it to a 1). There is only one right answer.

Adapted from the GaDOE Item Bank

# Name That DOK

	<b>Social Studies Standard and Item</b>	<b>DOK Level</b>
<b>Standard</b>	Students will identify and compare and contrast (purposes, sources of power) various forms of government in the world (e.g., monarchy, democracy, republic, dictatorship) and evaluate how effective they have been in establishing order, providing security, and accomplishing common goals.	<b>?</b>
<b>Item/Task</b>	Create a party and party platform with three to five issues. Present and debate those issues.	<b>?</b>

Adapted from CCA Social Studies Support Materials -  
Kentucky Department of Education



# Name That DOK

	Social Studies Standard and Item	DOK Level
<b>Standard</b>	Students will compare and contrast (purposes, sources of power) various forms of government in the world (e.g., monarchy, democracy, republic, dictatorship) and evaluate how effective they have been in establishing order, providing security, and accomplishing common goals.	<b>3</b>
<b>Item/Task</b>	Create a party and party platform with three to five issues. Present and debate those issues.	<b>4</b>

## Explanation

**Standard – DOK 3** There are multiple objectives to this standard, thus there are multiple DOK levels; however, the ceiling, or the highest DOK Level at which students can be assessed for item development, is level 3.

**Item - DOK 4.** It requires the student to plan and develop solutions to problems.

Adapted from CCA Social Studies Support Materials - Kentucky Department of Education

# Name That DOK

	ELA/Reading Standard and Item	DOK Level
<b>Standard</b>	Students will locate key ideas or information in a passage.	?
<b>Item/Task</b>	After reading a passage, students are asked: The Sumerians chose 60 as the base for their number system because A. there are 60 minutes in an hour. B. they invented dial clocks. <b>C. 60 can be divided easily.</b> D. there were six sacred directions on the Sumerian compass.	?

Adapted from CCA Reading Support Materials -  
Kentucky Department of Education

# Name That DOK (Key)

	ELA/Reading Standard and Item	DOK Level
<b>Standard</b>	Students will locate key ideas or information in a passage.	<b>1</b>
<b>Item/Task</b>	After reading a passage, students are asked: The Sumerians chose 60 as the base for their number system because A. there are 60 minutes in an hour. B. they invented dial clocks. <b>C. 60 can be divided easily.</b> D. there were six sacred directions on the Sumerian compass.	<b>1</b>

## Explanation

Standard – DOK 1. It requires locating/recalling information.

Item - DOK 1. It requires locating/recalling information.

Adapted from CCA Reading Support Materials - Kentucky Department of Education

# Name That DOK

	Science Standard and Item	DOK Level
<b>Standard</b>	Students will recognize the effects of pollution and humans on the environment.	
<b>Item/Task</b>	Which environmental concern would MOST affect animals in the sky? A. Air pollution from factories B. Toxic dumping in lakes and rivers C. Littering on streets and sidewalks D. Littering in the ocean	

# Name That DOK (KEY)

	Science Standard and Item	DOK Level
<b>Standard</b>	Students will recognize the effects of pollution and humans on the environment.	<b>2</b>
<b>Item/Task</b>	Which environmental concern would MOST affect animals in the sky? <b>A. Air pollution from factories</b> B. Toxic dumping in lakes and rivers C. Littering on streets and sidewalks D. Littering in the ocean	<b>2</b>

## Explanation

Standard – DOK 2. It requires applying a skill in a familiar context.

Item - DOK 2. The student is required to apply the information. Because the student is required to know more than the definition, this item is at a level 2.

# HOW CAN WE MODIFY QUESTIONS?

What does the standard require of the student?

	Science CTAE Standard and Item	DOK Level
<b>Standard</b>	Students will <b>recognize</b> the <b>effects of pollution and humans on the environment.</b>	<b>2</b>
<b>Item/Task</b>	Using your DOK question stems, how can you address this concept of the effects of pollution and humans on the environment at a level 3 or 4?  <i>Which environmental concern would MOST affect animals in the sky?</i>	<b>?</b>

# HOW CAN WE MODIFY QUESTIONS?

- How is pollution related to a decrease in animal populations? (DOK 3)
- Choose a population of animals and show at least 3 ways they are affected by humans. (DOK 3)
- Choose a population of animals and show at least 3 ways they are affected by humans. Choose one of those ways to show how humans can decrease their impact on the animal population. Using media, create a campaign to show humans how they can decrease their impact on the animal population. (DOK 4)

# HOW DO WE TURN RIGOR INTO PRACTICE?

- How do we increase rigor in the classroom?
  - Become aware of the level of questioning in the classroom.
  - Who is asking the questions?
    - Teacher to student
    - Student to Teacher
    - Student to student
  - Evaluate your current questioning strategies to increase the level



# DOK Question Stems

## DOK 1

- Can you recall \_\_\_\_?
- When did \_\_\_\_ happen?
- Who was \_\_\_\_?
- How can you recognize \_\_\_\_?
- What is \_\_\_\_?
- How can you find the meaning of \_\_\_\_?
- Can you recall \_\_\_\_?
- Can you select \_\_\_\_?
- How would you write \_\_\_\_?
- What might you include on a list about \_\_\_\_?
- Who discovered \_\_\_\_?
- What is the formula for \_\_\_\_?
- Can you identify \_\_\_\_?
- How would you describe \_\_\_\_?

## DOK 2

- Can you explain how \_\_\_\_ affected \_\_\_\_?
- How would you apply what you learned to develop \_\_\_\_?
- How would you compare \_\_\_\_?  
Contrast \_\_\_\_?
- How would you classify \_\_\_\_?
- How are \_\_\_\_ alike? Different?
- How would you classify the type of \_\_\_\_?
- What can you say about \_\_\_\_?
- How would you summarize \_\_\_\_?
- How would you summarize \_\_\_\_?
- What steps are needed to edit \_\_\_\_?
- When would you use an outline to \_\_\_\_?
- How would you estimate \_\_\_\_?
- How could you organize \_\_\_\_?
- What would you use to classify \_\_\_\_?
- What do you notice about \_\_\_\_?

## DOK 3

- How is \_\_\_\_ related to \_\_\_\_?
- What conclusions can you draw \_\_\_\_?
- How would you adapt \_\_\_\_ to create a different \_\_\_\_?
- How would you test \_\_\_\_?
- Can you predict the outcome if \_\_\_\_?
- What is the best answer? Why?
- What conclusion can be drawn from these three texts?
- What is your interpretation of this text? Support your rationale.
- How would you describe the sequence of \_\_\_\_?
- What facts would you select to support \_\_\_\_?
- Can you elaborate on the reason \_\_\_\_?
- What would happen if \_\_\_\_?
- Can you formulate a theory for \_\_\_\_?
- How would you test \_\_\_\_?
- Can you elaborate on the reason \_\_\_\_?

## DOK 4

- Write a thesis, drawing conclusions from multiple sources.
- Design and conduct an experiment. Gather information to develop alternative explanations for the results of an experiment.
- Write a research paper on a topic.
- Apply information from one text to another text to develop a persuasive argument.
- What information can you gather to support your idea about \_\_\_\_?
- DOK 4 would most likely be the writing of a research paper or applying information from one text to another text to develop a persuasive argument.
- DOK 4 requires time for extended thinking.

# ENCOURAGING TEACHERS

1.

- Determine DOK of the standards

2.

- Review questioning techniques

3.

- Become purposeful in planning questions

4.

- Determine the DOK of the questions to ensure they match

# THANK YOU!

- Melissa Thomas
  - Learning and Leadership
  - melissa.thomas@henry.k12.ga.us
  - 770.957.6547



- Call on me anytime!

