# DOK DEPTH OF KNOWLEDGE

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## WHAT IS DOK?

- DOK was developed by Norman L. Webb. Webb is a senior research scientist with the Wisconsin Center for Education Research and the National Institute for Science Education.
- DOK is based on, but not identical to the work of Bloom (1956).
- DOK measures the degree to which knowledge is elicited from students.
- DOK is a common language educators use to describe the complexity of test items.

## DOK LEVEL 1-RECALL & REPRODUCTION

Recall a fact, information, or routine procedure

One right answer



## DOK LEVEL 2-SKILL/CONCEPT

Apply information, conceptual knowledge, and procedures
Usually involves application of two or more steps
One right answer



Requires reasoning, developing a plan or sequence of steps
Provide support for reasoning or conclusions
More than one possible response or approach



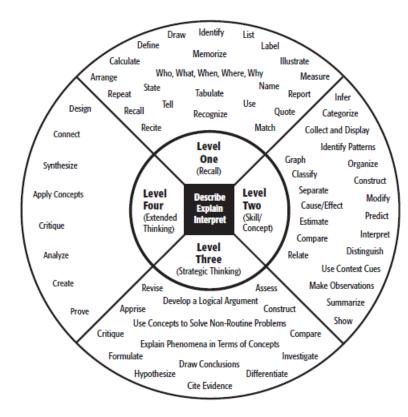
## DOK LEVEL 4-EXTENDED THINKING

Requires complex reasoning, planning, and thinking over an extended period of time
Uses real-world applications in new situations

# THE WHEEL

- DOK is NOT determined by the verb, but by the context in which the verb is used and the depth of thinking required.
- DOK IS about what follows the verb.
- The intended student learning OUTCOME determines the DOK level.

### **Depth of Knowledge (DOK) Levels**



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
Recall elements and details of story structure, such as sequence of	Identify and summarize the major events in a narrative.	Support ideas with details and examples.	Conduct a project that requires specifying a problem, designing and
events, character, plot and setting.  Conduct basic mathematical	Use context cues to identify the meaning of unfamiliar words.	Use voice appropriate to the purpose and audience.	conducting an experiment, analyzing its data, and reporting results/ solutions.
calculations.  Label locations on a map.	Solve routine multiple-step problems.	Identify research questions and design investigations for a	Apply mathematical model to illuminate a problem or situation.
Represent in words or diagrams a	Describe the cause/effect of a particular event.	scientific problem.  Develop a scientific model for a	Analyze and synthesize
scientific concept or relationship.  Perform routine procedures like	Identify patterns in events or behavior.	complex situation.	information from multiple sources.  Describe and illustrate how common
measuring length or using punctuation marks correctly.	Formulate a routine problem given data and conditions.	Determine the author's purpose and describe how it affects the interpretation of a reading	themes are found across texts from different cultures.
Describe the features of a place or people.	Organize, represent and interpret	selection.	Design a mathematical model to inform and solve a practical
	data.	Apply a concept in other contexts.	or abstract situation.

Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <a href="https://www.wcex.wisc.edu/WAT/Index.asp">https://www.wcex.wisc.edu/WAT/Index.asp</a>

# SAME VERB---THREE DOK LEVELS

- DOK 1- Describe three characteristics of metamorphic rocks.
- Requires simple recall
- DOK 2- <u>Describe</u> the difference between metamorphic and igneous rocks.
  - Requires cognitive processing to determine the differences in the two rock types
- DOK 3- <u>Describe</u> 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

Source: <a href="http://www.polk-fl.net/staff/professionaldevelopment/default.htm">http://www.polk-fl.net/staff/professionaldevelopment/default.htm</a>

# DOK LEVEL 1-RECALL & REPRODUCTION

### Products

- Definition
- Fact
- Label
- List
- Categorize
- Outline
- Highlighting

### Teacher

- Tells
- Directs
- Shows
- Questions
- Demo
- Compares
- Listens

### Student

- Responds
- Remembers
- Memorizes
- Restates
- Describes
- Recognizes
- Recalls

- Make a timeline
- Write definitions
- Recite a fact
- Write in your own words
- Paraphrase a chapter in the book
- Outline the main points
- Use a basic calculation
- Basic measurement
- Make a chart

# DOK LEVEL 2-SKILL/CONCEPT

#### **Products**

- Demonstration
- Interview
- Illustration
- Simulation
- Performance
- Model

#### Teacher

- Shows
- Observes
- Organizes
- Facilitates
- Questions

#### Student

- Solve problems
- Calculates
- Completes
- Constructs
- Demonstrates
- Compiles
- Illustrates

- Construct a model to demonstrate how something looks or works
- Practice a play and perform
- Make a diorama to illustrate an event
- Make a map
- Make up a puzzle or game about a topic
- Routine application tasks
- In writing, explain the meaning of
- Make a flowchart
- Write a biography
- Use the steps in the writing process

# DOK LEVEL 3-STRATEGIC THINKING

#### Products

- Spreadsheet
- Graph
- Survey
- Mobile
- Report
- Debate
- Publishing

#### Teacher

- Probes
- Observes
- Acts as a resource
- Clarifies
- Guides
- Questions
- Dissects

#### Student

- Discusses
- Debates
- Examines
- Judges
- Justifies
- Uncovers
- Ouestions
- Disputes
- Decides

- Use a Venn diagram that shows how two topics are the same and different
- Design a questionnaire
- Conduct a survey
- Classify actions of characters
- Prepare and conduct a debate
- Prepare a list of criteria to judge
- Write a persuasive speech
- Write a commercial to convince others to purchase your product
- Tasks that involve proposing solutions or making predictions
- Design something

# DOK LEVEL 4-EXTENDED THINKING

### Products

- Film
- Story
- Project
- Plan
- Game
- Media product
- Song

### Teacher

- Facilitates
- Reflects
- Evaluates
- Extends
- Analyses

### Student

- Designs
- Takes risks
- Proposes
- Formulates
- Modifies
- Plans
- Creates

- Formulate and test hypotheses over time
- Research writing
- Collaborate with a group
- Persuasive writing
- Develop a menu for a new restaurant
- Participate in an internship
- Analyze multiple sources of evidence and draw a conclusion; support the conclusion

## **DOK 1 & 2 Question Prompts**

DOK 1 Recall	DOK 2 Skill/Concept	
Who?	What causedto happen?	
What?	How would you compare/contrast?	
When?	How arealike/different?	
Where?	How would you classify?	
How?	What can you say about?	
Did?	What is the pattern?	
Can you recall?	How would you summarize?	
When didhappen?	What steps are needed to edit?	
Who was?	How would you estimate?	
How can you recognize?	How could you organize?	
What is?	What do you notice about?	
How can you find the meaning of?	Do you know another instance where?	
How would you?	Could this have happened in?	
Who discovered?	Can you group by characteristics?	
What is the formula for?	What factors would you change?	
Can you identify?	How issimilar to?	
How would you describe?	What was the problem with?	
Who stated?	What were some of the motives behind?	
How many?	What was the turning point?	
Describe what happened?	What are the steps to?	
Which is true or false?	What context clues did you use?	
What happened next?	What are other possible outcomes?	
What is the main idea?	Why didoccur?	
Who was the main character?	Organize the data in a chart?	
What is the definition of?	Summarize	
Label	Demonstrate	
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## **DOK 3 & 4 Question Prompts**

DOK 3 Strategic Thinking

DOK 4 Extended Thinking (requires extended time for a multi-process activity)

Supportwith details and examples.  What facts would you select from the text to support?
What facts would you select from the text to support?
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Explain
Justify
What is the best answer? Why?
What conclusions can you draw?
Can you predict the outcome if?
What would happen if?
Can you see a possible solution?
How would you verify?
Is there a better solution for?
Can you elaborate on the reason?
What is your interpretation of? Support your rationale.
Can you formulate a theory for?
How can we solve?
How can we improve?
How many ways can you?
What is another way?
What are the features of?
How isrelated to?
Why do you agree or disagree?
Prove or disprove
Develop a logical argument.
Compare Contrast
How would you describe the sequence of?

# DOK AND COMMON CORE

<a href="http://schools.nyc.gov/Academics/Common">http://schools.nyc.gov/Academics/Common</a> CoreLibrary/ProfessionalLearning/DOK/def ault.htm

http://www.criticalthinking.org/pages/high-school-teachers/807