Norman Webb’s- DOK (Depth of Knowledge)

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- Love to read and learn
Why = The Purpose

How = The Process

What = The Result
Why?
Having students think at deeper levels

How?
Through questioning, and inquiry processes

What?
Higher engagement, academic achievement
To honor our purpose, the intent of this work

Is...
-being thoughtful and purposeful with what types of questions you are asking students.

- based on students needs and personalized.

Can Be... drastically different than what you planned.

Is Not...
- Something we accomplish with a canned, packaged curriculum that requires everyone to do the same thing in the same way at the same time.

Why? The Purpose
Farmington: District Mission (Our Why)

To ensure that each student reaches his or her highest aspirations while embracing responsibility to community through a system distinguished by:

- Supporting **individuality** while understanding our interdependence.
- Developing wisdom and integrity of each individual.
- Nurturing the will to succeed in each student.
- **Personalized learning environments.**
- Deep community collaboration.
Farmington: District Mission (The Why)

**Strategy 1:**
We will create a culture of innovation in which students and staff are encouraged to take risks in order to ignite learning.

**Strategy 5:**
We will provide for each student personalized learning experiences based on student strengths and aspirations.
Farmington: Strategic Plan (The Why)

Bottom Line: We believe that...

All students are critical thinkers, collaborators and problem-solvers; capable of solving complex problems in new and creative ways.

(Does our practice/pedagogy reflect this?)
"Education is not the learning of facts, but the training of the mind to think."

-Albert Einstein
Why is it important for me to know this?

According to research, only 5% of teacher directed questions are higher-order divergent (Wilen, 1987). As we continue to learn more about who our students are along with how personalized learning fits in with our teaching, we need to be sure to provide opportunities that allow students to go deeply into our content (DOK levels 3 and 4). Our students must practice to become strategic and critical thinkers! **Every** content teacher can provide these opportunities!!
What is DOK and how is it different than Bloom’s?

Bloom’s Taxonomy:

- Focuses on the **tasks** students complete to deepen understanding.
- Relies on **verbs** to indicate level of thinking.

Webb’s DOK:

- Focuses on **cognitive demands** of instruction.
- Centers on the **thinking process**, not just the product.
- It extends beyond the verb, beyond the “what” to the “how” and **digs deeper**.
DOK Levels:

Level 1: Recall and Reproduction
Level 2: Skills and Concepts
Level 3: Strategic Thinking
Level 4: Extended Thinking
Cognitive Demand

• The **kind and level of thinking** required of students to successfully engage with and solve a task

• Ways in which students **interact with content**
Difficult vs. Complex

- DOK is about intended outcome, not difficulty.
- DOK is a reference to the complexity of mental processing that must occur to answer a question, perform a task, or generate a product.
Difficulty can be a reference to how many students answer a question correctly:

• How many of you know the definition of *exaggerate*? 
  **DOK 1 - recall**
  If all of you know the definition, this question is an easy question.

• How many of you know the definition of *prescient*? 
  **DOK 1 - recall**
  If most of you do not know the definition, this question is a difficult question.
## Design Challenge (Problem-solving) Opportunity.....

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<tr>
<th>Original Task</th>
<th>Design Challenge</th>
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<tr>
<td><strong>Osmosis &amp; Diffusion Lab:</strong></td>
<td>Rick’s mom found a bowl in the basement with two HUGE rubbery eggs inside &amp; another with a shriveled egg. On the shelf she saw vinegar, water, corn syrup &amp; dish soap. What happened to the eggs? How can they be returned to normal size?</td>
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<td>- Place the egg on the scale &amp; record the weight.</td>
<td>- Design an experiment</td>
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<td>- Place the egg in the plastic cup</td>
<td>- Analyze &amp; Discuss your results, answering the questions above.</td>
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<td>- Pour 100 mL of vinegar into the cup with the egg.</td>
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<td>- Record observations &amp; weights for the egg over the next 3 days.</td>
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<td>- Repeat the steps with corn syrup</td>
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Let’s look at the verbs...

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 relationship that exist within the rock cycle. Provide evidence to support your decision. (Requires deep understanding of the rock cycle and a determination of how best to represent it by providing evidence)
It’s NOT about the VERB...

Depth of Knowledge is NOT determined by the verb (Bloom’s Taxonomy), but by the context in which the verb is used and the depth of thinking required.
How about a game show??

If you were to match DOK levels to the game shows below, what DOK would you assign them?

- **Top Chef** (Katie Lee, Padma Lakshmi, Wolfgang Puck, Emeril Lagasse)
- **Survivor** (Jeff Probst)
- **Who Wants to Be a Millionaire?** (Regis Philbin)
- **Hell’s Kitchen** (Gordan Ramsey)
- **Shark Tank** (Mark Cuban, Lori Greiner, Robert Herjavec, Daymon John, and Barbara Corcoran)
- **The Apprentice** (Donald Trump)
- **Jeopardy** (Alex Trebek)
A Game-Show Analogy to Depth of Knowledge!

DOK 1: Who Wants To Be A Millionaire & Jeopardy

D.O.K.-1 activities generally resemble the kind of questions contestants are asked on Who Wants to Be a Millionaire or Jeopardy - multiple choice or short answer questions that require demonstrating and communicating factual knowledge of specific details, elements, and information correctly. The questions asked on Jeopardy are similar to how we assess and evaluate our students' factual, procedural, and conceptual knowledge of the subjects and topics they are learning - asking them to recall, recognize, and remember specific details, elements, facts, and information correctly. Such questions are more difficult than complex, requiring students to work hard at remembering so many details correctly, which is why Who Wants to Be a Millionaire and Jeopardy are two of the most difficult game shows on the air. However, such questions can help students develop the knowledge and understanding they will need to think deeper about what they are learning.
DOK 2: Hell’s Kitchen & Top Chef

D.O.K.-2 activities are similar to the competitive tasks presented on shows such as Top Chef or Hell’s Kitchen in which contestants expected to use conceptual and procedural knowledge to answer a question, address a problem, or accomplish a task. These shows are like a lab experience in which students actively apply their knowledge, understanding, and skills to complete and are evaluated based upon their ability to produce a correct, desired, or specific result. It expects students to use what they have learned to answer a question, address a problem, or accomplish a task. As with Hell’s Kitchen and Top Chef, D.O.K.-2 questions focus heavily on skills-based performance, expecting students to demonstrate their ability to use the factual, conceptual, and procedural knowledge they have acquired in a specific area, discipline, or subject.
DOK 3: Survivor & The Apprentice

D.O.K.-3 activities are similar to the problems and tasks presented on game shows such as Survivor or The Apprentice. Both shows are prime examples of problem-based learning that challenges students to think critically and strategically about how to answer a question, address a problem, or accomplish a task. They also emphasize collaboration in that the questions, problems, and tasks posed, presented, and provided cannot be answered, addressed, or accomplished alone or immediately. D.O.K.-3 activities are like the competitions on Survivor and the tasks on The Apprentice in that they are highly complex and focus more on the process in which a question, problem, or task can be answered, addressed, or accomplished.
DOK 4: Shark Tank

D.O.K.-4 activities are like Shark Tank, which essentially is project-based learning and even engineering design. A person thinks creatively about how to design and develop an innovative or inventive plan or product that addresses a particular circumstance, issue, problem, or situation; plots out the plan or produces a prototype; tests their idea or design; and then presents their conclusions to a panel, defending, explaining, and justifying their reasoning and results. Project-based learning should mirror the experience of Shark Tank in that students should be expected to present what they have designed, developed, or done and have their project evaluated by the teacher and their peers as to whether it answers the essential question of the unit or class, addresses a particular objective, and teaches them something new about the concept or content they are learning.
Hess Cognitive Rigor Matrix

The matrices are available in many content areas:

- Reading
- Math/Science
- Writing/Speaking
- Social Studies/Humanities
- Fine Arts
- Health/Physical Education
- World Language
- Career/Technical Education
“Our job is not to prepare students for something. Our job is to help students prepare themselves for anything.”

A.J. Juliani
Resources


