What I Know Now That I Wish I Knew Then – All Things Assessment Literacy

Kent State University
Welcome and Introductions

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Learning Goals

Understand Rigor and Cognitive Complexity of the Standards

Using Depth of Knowledge (DOK)
Unpacking the Standards

• How do I know what to teach and how to teach it?

• What will my students say, do, or write to show mastery?
Not So Complex Standards

• Compare two numbers between 1 and 10 presented as written numerals.
• Capitalize dates and names of people.
• People earn income by working.
• Use different body parts to strike a lightweight object (such as a balloon) and keep it in the air.
Complex Standards

• Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of the comparison. (CCSS Grade 2 Math)

☐ Apply multiple criteria to evaluate the quality and effectiveness of music performance and composition including their own. (ONLS Music grade 7)
Complex Standards

Clear focus + Clear learning targets =

Clear instruction for on-target learning
Complex Standards…

1. Unpack
   Underline the **content**
   Circle the **skills**, or **verbs**.

2. Write learning targets
   Use student-friendly language
   Keep essential vocabulary
   Maintain rigor
Alignment

What do I want my students to know and be able to do?

- Content
- Skills
Content and Skills

Identify who is telling the story at various points in a text.
Grade 5

RI.5.2: Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

Learning Targets

• I can determine the central idea.
• I can determine the theme.
• I can analyze the development of theme and central idea.
• I can summarize key supporting details.
• I can summarize key ideas.
K.G2: Correctly name shapes regardless of their orientations or overall size. (CCSS)

- Show me the triangles.
- Show me the pentagons.
- Show me the cylinders.
Aaron decided to compete in a **decathlon**.

What is a **decathlon**?
LS 5.2: Use food webs to identify the relationships among producers, consumers and decomposers in an ecosystem. (ONLS)

3. Which of the choices below describes the roles of the four organisms in the correct order from left to right?
   A. consumer, consumer, decomposer, producer
   B. decomposer, consumer, consumer, producer
   C. producer, consumer, consumer, decomposer
Analyze the causes and consequences of major political, economic and social developments of the 1930’s with emphasis on the Dust Bowl. (OACS)

Which of the following areas was most associated with “the Dust Bowls” of the 1930s?

- a. Area marked A
- b. Area marked B
- c. Area marked C
- d. Areas marked by D and E
Developing a Trained Eye

Analyze alignment claims

ALL NEW! Now aligned to the National Common Core State Standards!
Depth of Knowledge
Level of Complexity

- Bloom’s Taxonomy focuses on the type of thinking required to successfully answer the assessment item.
- Webb’s Depth of Knowledge focuses on how deeply the content must be understood in order to be successful.
- Both the thinking process (Bloom’s) and the depth of content knowledge (Webb’s) are important to the design of curriculum, instruction, and assessment.

What it is...

Level 1

Level 2

DOK

Level 3

Level 4
What Defines the Levels?

How deeply do the students need to understand the content to perform the task?

How deeply are the students interacting with the material?
DOK Level 1

Routine Thinking

Recall and Reproduction

Jen Jones (2013); helloliteracy.blogspot.com
DOK Level 1

• Recall a fact, term, principle, concept, or perform a routine procedure.

• Follow a well-known rule, procedure, or formula.

• The answer is either right or wrong.
Who is Jimmy Wales?

A: Founder of Wikipedia
B: Christian televangelist
C: Godfather of reggae
D: Founder of Starbucks
DOK Level 1
Question Stems

• Recall the _______?
• When did _____ happen?
• How can you recognize_______?
• Select the ________?
• How would you write _________?
• What is the formula for __________?
• Identify _________?
• How would you describe ________?
Level 1 Questions

• Name the parts of a cell.

• Based on the U.S. Constitution, which development would cause a state to gain representation in the House of Representatives?

We *do* need DOK Level 1 questions. We *don’t* need **JUST** DOK Level 1 questions.
DOK Level 2

Conceptual Thinking

Basic Application

Jen Jones (2013); helloliteracy.blogspot.com
DOK Level 2

- Use of information
- Select appropriate procedures
- Usually multiple steps
- Routine problems
- Apply 2+ concepts
- Make limited decisions
- One right answer or approach
DOK Level 2
Question Stems

• Explain how ____affects____?
• How would you apply what you learned to develop_____?
• How would you compare/contrast_____?
• How would you classify ______?
• How would you summarize _______?
• How could you organize _____?
• How would you estimate ______?
Level 2 Questions

• Write a paragraph summarizing the main ideas of the text.

• Nora is running a race that is 26.2 miles. She is running at a speed of 8 miles per hour. She has completed \( \frac{3}{4} \) of the race. How much longer will it take Nora to finish the race?
YOU SHOULD KNOW:

79% of Ohio’s New Learning Standards in Math are at DOK Level 2 by the 6th Grade.
DOK Level 3

Strategic Thinking

Higher Level Application

Jen Jones (2013); helloliteracy.blogspot.com
DOK Level 3

- Requires reasoning
- Developing a plan to approach a problem
- Non-routine
- Involves making a claim and providing supporting evidence = “Back it up, Jack!”
- Often more than one possible approach or answer
- More student led

Hess, Karin 2013 CRM
Depth of Knowledge Level 3

DOK 3 Tasks are like solving a mystery – looking for compelling evidence to support conclusions or to build a defensible argument.

**CSI** - Each episode presents a non-routine case and solving it requires answering more complex questions than posed on Jeopardy or The Price is Right.
DOK Level 3
Question Stems

• How is _____ related to _____?
• What conclusions can you draw about _____?
• How would you adapt ____ to create a different ______?
• How would you test _____?
• Predict the outcome if ______?
• What is the best solution for ____? Why?
Level 3 Questions

- Is toothpaste a solid or a liquid? Conduct the following experiment, collect and analyze the data, analyze, make a claim, and support your claim with evidence.

- Make a booklet about five rules you see as important. Convince others.
YOU SHOULD KNOW:

83% of Ohio’s New Learning Standards in ELA are at DOK Level 3 by the 6th Grade. (Other subjects connected in Literacy and Writing Standards as well).
DOK Level 4

Extended Thinking

Real World Application

Jen Jones (2013); helloliteracy.blogspot.com
DOK Level 4

• Requires time to research, problem solve, and process multiple conditions of a task
• An original investigation or application to real world
• Requires significant conceptual understanding and application of skills across disciplines
• Often more than one possible approach or answer
• Multiple sources
• Mostly student led

Hess, Karin 2013 CRM
Level 4 Questions

Conduct an internship in industry where students are faced with real world, unpredictable problems.

You’re hosting Thanksgiving this year. You will need to plan a dinner to feed 20 people and a 3-course meal for under $10/person that can be prepared in 6 hours or less. One guest is a vegetarian, one is on a gluten-free diet, two are diabetic, and one is allergic to tree nuts. All your guests should be able to enjoy each dish you serve. Be prepared to explain the choices you made.
<table>
<thead>
<tr>
<th>Bloom’s Revised Taxonomy of Cognitive Process Dimensions</th>
<th>Webb’s Depth-of-Knowledge (DOK) Levels</th>
<th>Level 1 Recall &amp; Reproduction</th>
<th>Level 2 Skills &amp; Concepts</th>
<th>Level 3 Strategic Thinking/Reasoning</th>
<th>Level 4 Extended Thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remember: Retrieve knowledge from long-term memory, recognize, recall, locate, identify</td>
<td>Level 1 Recall &amp; Reproduction</td>
<td>Recall, recognize, or locate basic facts, ideas, principles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understand: Construct meaning, clarity, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion (such as from examples given), predict, compare/contrast, match ideas, explain, construct models</td>
<td>Level 2 Skills &amp; Concepts</td>
<td>Specify and explain relationships</td>
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</tr>
<tr>
<td>Apply: Carry out or use a procedure in a given situation, carry out (apply to a familiar task), or (use) to an unfamiliar task</td>
<td>Level 3 Strategic Thinking/Reasoning</td>
<td>Use concepts to solve non-routine problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyze: Break into constituent parts, determine how parts relate, differentiate between relevant/irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct (e.g., for a point of view)</td>
<td>Level 4 Extended Thinking</td>
<td>Select or devise an approach among many alternatives to solve a novel problem</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Evaluate: Make judgments based on criteria, check, detect inconsistencies or failurces, judge, critique</td>
<td>Level 1 Recall &amp; Reproduction</td>
<td>Retrieve information from a table or graph to answer a question</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create: Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, construct, produce</td>
<td>Level 2 Skills &amp; Concepts</td>
<td>Categorize, classify materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 3 Strategic Thinking/Reasoning</td>
<td>Generate conjectures or hypotheses based on observations or prior knowledge</td>
<td>Synthesize information within one source or text</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 4 Extended Thinking</td>
<td>Synthesize information across multiple sources or texts</td>
<td>Design a model to inform and solve a real-world, complex, or abstract situation</td>
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</tr>
</tbody>
</table>

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## Matching Level-Method

<table>
<thead>
<tr>
<th>Level 1 – Knowledge/Recall</th>
<th>Selected Response</th>
<th>Constructed Response</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strong</td>
<td>Good</td>
<td>Poor</td>
</tr>
</tbody>
</table>

| Level 2 – Application      | Good              | Strong               | Good        |

| Level 3 – Strategic Thinking | Poor              | Strong               | Strong      |

| Level 4 – Extended Thinking | Poor              | Good                 | Strong      |
Which Assessment Method?

Identify the eight major planets in the solar system.

1. What is the DOK level of this learning expectation?

2. What methods would be good choices for assessment?
Which Assessment Method?

Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8).

1. What is the DOK level of this learning expectation?

2. What methods would be good choices for assessment?
Which Assessment Method?

Write arguments to support claims with clear reasons and relevant evidence.

1. What is the DOK level of this learning expectation?

2. What methods would be good choices for assessment?
Which Assessment Method?

Create a series of bar graphs that show kinetic energy, potential energy, and thermal energy for eight different positions on a roller coaster.

1. What is the DOK level of this learning expectation?

2. What methods would be good choices for assessment?
## Targets to plan for:

### DOK Level 1 questions

<table>
<thead>
<tr>
<th>Grades</th>
<th>Percentage of assessment points</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-2</td>
<td>75%</td>
</tr>
<tr>
<td>3-4</td>
<td>50%</td>
</tr>
<tr>
<td>5-12</td>
<td>20-25%</td>
</tr>
</tbody>
</table>

### DOK Level 2-3 questions

<table>
<thead>
<tr>
<th>Grades</th>
<th>Percentage of assessment points</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-2</td>
<td>20-25%</td>
</tr>
<tr>
<td>3-4</td>
<td>50%</td>
</tr>
<tr>
<td>5-12</td>
<td>75-80%</td>
</tr>
</tbody>
</table>
But it’s About Unpacking the Standards

What do I want my students to know and be able to do?

Content  Skills

How deeply?

DOK
So, What Do I Do Now?

• Back to Your Standards –
  – What is the cognitive complexity/rigor using Webb’s Depth of Knowledge?

• At your grade level – what is the DOK of the standard?
  – What will my assessment look like?
  – What does my instruction need to look like?