Demonstration Storyboard

Cognitive Rigor

by

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Content Presentation Screen	
Audio Narration	**Visuals**
In this module, the learner will be able to: • *Understand the theories that support the framework for cognitive rigor.* • *Comprehend each category within Bloom's Taxonomy and Webb's Depth of Knowledge (DOK).* • *Apply the concept of cognitive rigor in a real-world example.*	 *"The-science-of-cognitive-rigor-in, by cognitiverigor.blogspot.co.is licensed as free to use.* *In this module, the learner will be able to:* • *Understand the theories that support the framework for cognitive rigor.* • *Comprehend each category within Bloom's Taxonomy and Webb's Depth of Knowledge (DOK).* • *Apply the concept of cognitive rigor in a real-world example.* **Functional Instructions** • Image appears first on the screen and remains throughout. • Text on the screen will advance in line with narration.

Content Presentation Screen

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Audio Narration	Visuals
What is Cognitive Rigor? ***Cognitive Rigor*** *is the extent and depth that the learner is engaged with content. It includes the ability to use the information in new context, essentially applying what is learned. As a result of cognitive rigor, learning experiences are more authentic and engaging.* *To create cognitive rigor, Bloom's Taxonomy and Webb's Depth of Knowledge provide a set of guidelines.*	 *"Maximilian-university-of-munich-ludwig-maximilians-news" by* Ulrich Baumgarten, GettyImages royalty free licensing. **Functional Instructions** • No interaction to occur on this screen.

Screen # 2	
Audio Narration	**Visuals**
Psychologist Benjamin Bloom (1913-1999) developed a taxonomy framework for classifying learning objectives based on level of complexity. They are as follows: • ***Remembering*** *(Learner recalls information from long-term memory)* • ***Understanding*** *(learner determines meaning of oral, written, or graphic communication)* • ***Applying*** *(learner applies the information)* • ***Analyzing*** *(learner explores how parts relate to one another and the overall purpose of the information)* • ***Evaluating*** *(learner makes judgement based on set criteria)* • ***Creating*** *(learner uses information to craft or build product)*	**Bloom's Taxonomy**  **https://www.unthsc.edu/center-for-innovative-learning/blooms-taxonomy-and-depth-of-knowledge/**
	Instructions for Interactivity Allow the learner to hover over each item in the pyramid which will open a pop up that includes the definition of the key term. Correct answers are as follows: • **Remembering** – recall information from long-term memory • **Understanding** – grasps the meaning of the content • **Applying** – using learned material in a new situation • **Analyzing** – breaking down content into parts so that the organizational structure is easily understood • **Evaluating** – ability to make judgements based on certain criteria or standards • **Creating** – using learned information to in a new way

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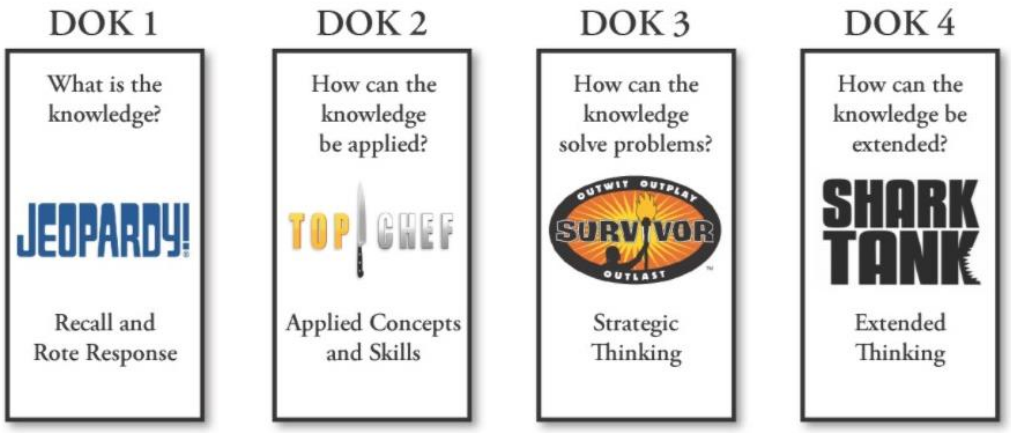
Screen # 3	
Audio Narration	**Visuals**
Norman Webb of Wisconsin Center for Education Research created knowledge levels based on gradual increases in complexity. *The four Depth of Knowledge (DOK) levels:* • ***Recall/Reproduction*** *(of information)* • ***Skill/Concept Application*** *(the learner uses information)* • ***Strategic Thinking*** *(learner explores multiple options)* • ***Extended Thinking*** *(learner investigates and draws conclusion)* *See the image for television shows which serve as an analogy for the four DOK's. Hover over each DOK for the definition.*	**Webb's Depth of Knowledge (DOK)**  https://blogs.atu.edu/morelan/dok-depth-of-knowledge/ **Instructions for Interactivity** Allow the learner to hover over each of the 4 items creating a pop-up of the definition of the DOK. The four DOK definitions are as follows: • **Recall and Rote Response** – Remember a fact, information or a procedure. • **Applied Concepts and Skills** – Ability to use the learned information in a new and concrete way. • **Strategic Thinking** – Reasoning requiring some higher level thinking to formulate an answer. • **Extended Thinking** - Judgement is made based upon set criteria or standards.

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Assessment with Feedback Screen	
Audio Narration	**Visuals**
Now, let's pause to check your understanding of Bloom's Taxonomy and Webb's Depth of Knowledge. Click, drag, and drop the key term to the activity that it most represents. *CA: Congratulations! You've shown that you understand Bloom's Taxonomy and Webb's Depth of Knowledge.*	**Check Your Understanding** Applying Extended Thinking Remembering Strategic Thinking Defining Key Terms Drawing a conclusion from a research study Creating a tongue twister with key terms Critiquing a journal article **Functional Instructions** • Allow learners to drag key terms to the matching activity. • If the match is correct, show key term "snap" into place. • If the match is incorrect, show key term snap back to its original location. • When all key terms have been correctly matched, play CA Feedback. • Correct answers are as follows: **Applying** – creating a tongue twister with key terms **Extended Thinking** – critiquing a journal article **Remembering** – defining key terms **Strategic Thinking** – drawing a conclusion from a research study

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Enrichment:

Read, "*Promoting cognitive rigor - NHCTE (nh-cte.org)*"

Read, "*Microsoft Word - CRM_ELA_1 page.doc (pdesas.org)*"

Watch, "*Now THAT'S a Good Question! How to Promote Cognitive Rigor Through Classroom Questioning"* *(1:47)* **Transcript**

Key Terms:

- **Analyzing** - learner explores how parts relate to one another and the overall purpose of the information (S2).
- **Applying -** learner applies the information (S2).
- **Cognitive Rigor**- the extent and depth that the learner is engaged with content (S1).
- **Creating -** learner uses information to craft or build product (S2).
- **Evaluating -** learner makes judgement based on set criteria (S2).
- **Extended Thinking -** learner investigates and draws conclusion (S3).
- **Recall/Reproduction** - of information (S3).
- **Remembering -** learner recalls information from long-term memory (S2).
- **Skill/Concept Application** - the learner uses information (S3)
- **Strategic Thinking -** learner explores multiple options (S3)
- **Understanding -** learner determines meaning of oral, written, or graphic communication (S2)

References:

Anderson, L., Krathwohl, D., Airasian, P., Cruikshank, K., Mayer, R., Pintrich, P., Raths, J., & Wittrock, M. (Eds) (2001*). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Addison Wesley Longman, Inc.

Hess, K. K. (2004-2012). Center for Assessment, National Center for the Improvement of Educational Assessment, Inc. [papers posted and available] *Blending-the-Strengths-of-Blooms-Taxonomy-Webbs-Depth-of-Knowledge-in-Teaching,* https://www.coursehero.com/file/53543337/ www.nciea.org.