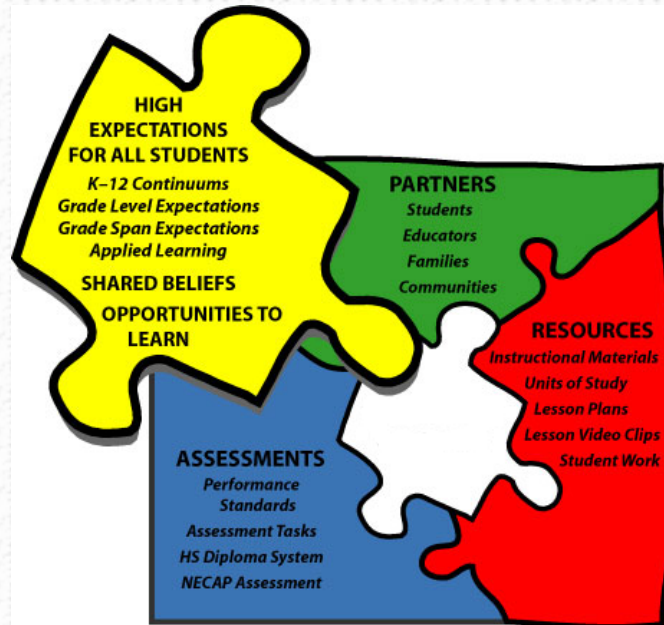




# Depth of Knowledge



**SYSTEM OF SUPPORT FOR STUDENT ACHIEVEMENT**



# Goals of this session

- Investigate the origin of Depth of Knowledge (DoK)
- Analyze levels of DoK
- Apply DoK to assessment items
- Determine how DoK affects state and local assessments



# Depth of Knowledge

Is a competency metric that makes it possible to communicate specifications and expectations



# Depth of Knowledge

## Level 1 Recall

Recalls a fact, information, or procedure.

## Level 2 Skill/Concept

Uses information or conceptual knowledge, two or more steps, etc.

## Level 3 Strategic Thinking

Requires reasoning, developing plan or a sequence of steps, some complexity, more than one possible answer.

## Level 4 Extended Thinking

Requires an investigation, time to think and process multiple conditions of the problem.



# Bloom's taxonomy

## KNOWLEDGE/REMEMBERING

“The recall of specifics and universals, involving little more than bringing to mind the appropriate material.”

## COMPREHENSION/UNDERSTANDING

“Ability to process knowledge on a low level such that the knowledge can be reproduced or communicated without verbatim repetition.”

## APPLICATION/APPLYING

“Using information in another familiar situation.”

## ANALYSIS/ANALYZING

“Breaking information into parts to explore understandings and relationships.”

## SYNTHESIS and EVALUATION/ EVALUATING and CREATING

“Putting together elements & parts to form a whole, then making value judgments about the method.”

# Webb's DoK

## RECALL

Recall of a fact, information, or procedure (e.g., What are 3 critical skill cues for the overhand throw?).

## SKILL/CONCEPT

Use of information, conceptual knowledge, procedures, two or more steps, etc.

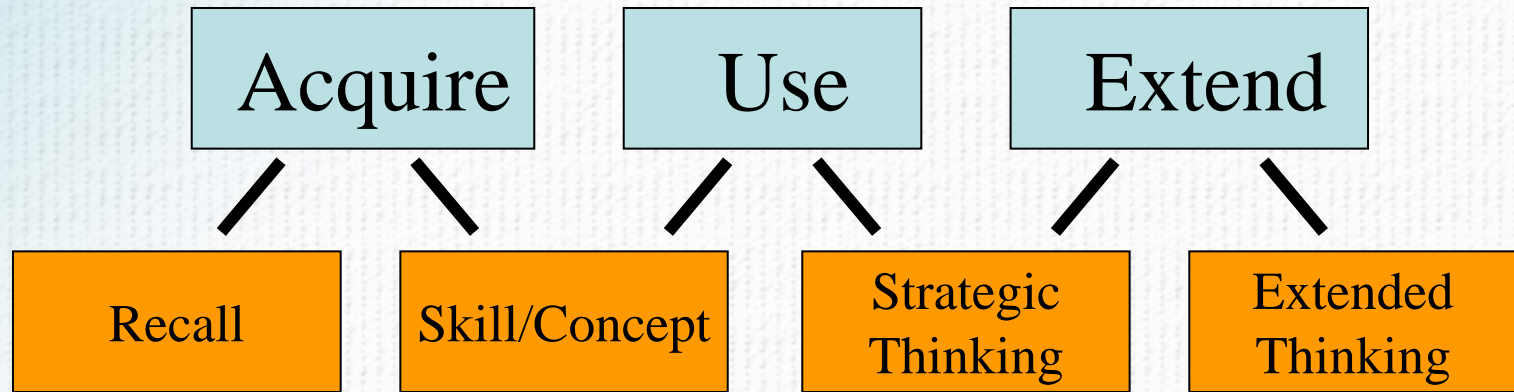
## STRATEGIC THINKING

Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer.

## EXTENDED THINKING

Requires an investigation; time to think and process multiple conditions of the problem or task.

# Expectations for Student Performance



Memorize

Perform Procedures

Demonstrate Understanding

Conjecture, Generalize, Prove

Solve non-routine / make connections

Memorize

Conduct Investigations

Communicate Understanding

Analyze Information

Apply concepts / make connections

Recall

Demonstrate / Explain

Analyze / Investigate

Evaluate

Generate / Create

# Applying Depth of Knowledge to Assessment Items

- Use the DoK levels from slide 4 of your handout
- For each sample item assign level 1,2,3, or 4.

# Mathematics, Grade 4

Each day that Jasmine turns in her homework on time, she earns 5 points. Jasmine has turned in her homework on time for the last 8 days. How many points has Jasmine earned altogether?

- a) 30    b) 35    c) 40    d) 45

# Science, grade 10

**A scientist synthesizes a new drug. She wants to test its effectiveness in stopping the growth of cancerous tumors. She decides to conduct a series of experiments on laboratory mice to test her hypothesis. What should she do?**

- a.) Give half the mice the drug, the other half none, and compare the tumor rates.**
- b.) Give the drug to all mice, but only half every other day, and record the tumor rates.**
- c.) Double the dosage to all mice each day until tumors start to disappear.**
- d.) Give the drug only to those mice who have tumors and record their weights.**

# **Oral and Written Communications, grade 10**

**You will become a story teller. You will research and write the story of someone who has emigrated to the United States and/or migrated within the United States.**

**You will get a role card from your native country, and you will become that person.**

# Oral and Written Communications, grade 10...

The role card features many countries and many time periods: gender and age are mixed. For example:

- Moira Adair , 50, arriving from Northern Ireland in 1980. Your husband was killed in an IRA bombing. You are a computer expert and have family in Minneapolis.
- Sean Dolan,21, arriving from Ireland in 1853. You are alone but you have a relative in New York. You are an apprentice stone mason.

You must produce an original map showing your home country as it was when you left. Describe the culture ( social, economic, political, dominant religious affiliation, educational system, legal system), in your homeland, explaining why people emigrate to America at that time. The trip to America is the bridge to researching settlement in a specific area or community; this is where imagination takes over for a time, although you will also need to maintain accuracy.

# Oral and Written Communications, grade 10

The next major research involves the assimilation process in America. Additionally, you need to research the contributions of your ethnic group to America. To guide you through this project, you will receive a packet of materials that includes everything from graphic organizers to specific prompts. The project culminates in an Ellis Island simulation and a “feast” for which you will research and prepare food, music, and dance from your assigned homeland.

# Your turn.....

**Please go to :**

**<http://www.wcer.wisc.edu/wat/tutorial/index.aspx>**

**This site is located at the Wisconsin  
Center of Education Research**



Select your specific area of study.

# OVERVIEW OF ALIGNMENT STUDY



MATHEMATICS



LANGUAGE ARTS



SCIENCE



SOCIAL STUDIES



# DoK and NECAP

- Each GLE and GSE has a DoK ceiling for item development purposes.
- The test items may range from Level 1 to the ceiling as indicated in the test specifications.
- The maximum ceiling is level 3.

# DoK and Local Assessment

## (things to consider)

- The level of work students are most commonly required to perform.
- The complexity of the task, rather than difficulty.
  - The DoK level describes the kind of thinking involved in a task, not the likelihood that the task will be completed correctly.
- The complete domain of items that would be appropriate for completing the task.
  - Item type ( MC, SA, CR, OE) coupled with DoK
- Comprehensive Local Assessment Systems will have DoK level 1,2,3, and 4 items.

# Reflection

Is there a good match among GLEs/GSEs, instruction and what teachers are assessing?

What is the DoK of the assessments in the classroom, school and district?

## Web Sites

Norm Webb resources

<http://www.wcer.wisc.edu/wat/tutorial/index.aspx>

<http://www.wcer.wisc.edu/wat/index.aspx>

Additional test items with DoK

[http://www.ride.ri.gov/assessment/docs/necap/practicetests/necap\\_practicetest.aspx](http://www.ride.ri.gov/assessment/docs/necap/practicetests/necap_practicetest.aspx)

RIDE Depth of Knowledge descriptors

<http://www.ride.ri.gov/instruction/curriculum>

click Resources; click informational materials

*Rhode Island Department of Elementary and Secondary Education*

