DEPTH OF KNOWLEDGE IN MATHEMATICS

**DOK 1**  
**RECALLING INFORMATION**
- Following a set of procedures. (like a recipe)
- Applying a formula.
- Performing a clearly defined series of steps.

**Key Words:** Identify, Recall

**DOK 2**  
**SKILLS AND CONCEPTS**
- Requiring students to make some decisions about how to approach a problem or activity.
- Working with problems that have more than one step.
- Collecting Classifying Organizing and Comparing data.
- Organizing and displaying data in charts, graphs, and tables.

**Key Words:** Recognize, Use, Measure

**DOK 3**  
**STRATEGIC THINKING**
- Requiring reasoning, planning, and a higher level of thinking.
- Students have to explain their thinking and justify their responses.
- Complexity comes from a higher demand for reasoning, not harder problems.

**Key Words:** Draw conclusions, Cite evidence, Develop an argument

**DOK 4**  
**EXTENDED THINKING**
- Requiring reasoning, planning, and thinking over an extended period of time.
- Students have to deal with multiple elements and make connections between them.
- Cognitive demand is high. Work is complex.

**Key Words:** Make connections, Relate ideas, Select approaches

Based on Webb’s Depth of Knowledge
<table>
<thead>
<tr>
<th>DOK 1</th>
<th>DOK 2</th>
<th>DOK 3</th>
<th>DOK 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USING SIMPLE SKILLS</strong></td>
<td><strong>MENTAL PROCESSING</strong></td>
<td><strong>BEYOND THE TEXT</strong></td>
<td><strong>HIGHER ORDER THINKING</strong></td>
</tr>
<tr>
<td>Reading doesn’t require analysis. Focus is on basic comprehension.</td>
<td>Requiring both comprehension and processing.</td>
<td>Explain, generalize, and connect ideas.</td>
<td>Extended activity. Extended periods of time.</td>
</tr>
</tbody>
</table>
| Understanding words and phrases. | **Key Concepts:**  
- summarize  
- interpret  
- infer  
- classify | Students must be able to support their thinking. | Taking information from one source and applying it in a different task. |
| **Key Concepts:**  
- Reference details  
- Find word meanings | **Key Concepts:**  
- Predict outcomes  
| **Key Concepts:**  
- Use context clues | **Key Concepts:**  
- Determine author’s purpose  
- Analyze /describe characteristics | Summarize from multiple sources | **Key Concepts:**  
- Examine perspectives  
- Illustrate common themes |

based on Webb’s Depth of Knowledge

**SEAN JUNKINS**
### DEPTH OF KNOWLEDGE IN SOCIAL STUDIES

<table>
<thead>
<tr>
<th><strong>DOK 1</strong></th>
<th><strong>DOK 2</strong></th>
<th><strong>DOK 3</strong></th>
<th><strong>DOK 4</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RECALLING INFORMATION</strong></td>
<td><strong>BASIC REASONING</strong></td>
<td><strong>COMPLEX REASONING</strong></td>
<td><strong>EXTENDED REASONING</strong></td>
</tr>
<tr>
<td>Recalling facts, terms, and concepts.</td>
<td>Engaging beyond recalling or reproducing.</td>
<td>Requiring evidence, reasoning, and higher order thinking.</td>
<td>Plan, investigate, and develop over an extended period of time.</td>
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<tr>
<td>Asking students to know who, what, and when.</td>
<td>Asking students to know how and why.</td>
<td>Justify how and why with application and evidence.</td>
<td>Apply conceptual understanding and higher level thinking.</td>
</tr>
</tbody>
</table>

### Key Concepts:

- Identify
- List
- Define
- Classify into categories
- Understand relationships
- Draw conclusions
- Cite evidence
- Apply concepts
- Make predictions
- Develop arguments
- Plan solutions to problems

Based on Webb’s Depth of Knowledge
DEPTH OF KNOWLEDGE IN SCIENCE

DOK 1
RECALLING INFORMATION

- Recalling facts, terms, and properties.
- Following procedures and/or a series of steps.
- Student either knows the answer or not; there’s nothing to be figured out or solved.

Key Concepts:
- Identify
- Recall
- Recognize
- Calculate
- Measure

DOK 2
SKILLS AND CONCEPTS

- Engaging beyond recall.
- Students are making decisions about how to approach and solve problems.
- Collecting, classifying, and organizing data in:
  - tables
  - charts
  - graphs

Key Concepts:
- Explain relationships
- Describe examples
- Select procedures

DOK 3
STRATEGIC THINKING

- Requiring evidence, reasoning, and higher order thinking.
- Multi-step tasks that require students to justify their responses and explain their thinking.
- Citing evidence.
- Developing logical arguments.
- Drawing conclusions from data.

Key Concepts:
- Develop models
- Forming conclusions
- Designing investigations

DOK 4
EXTENDED THINKING

- Open-ended tasks requiring significant, complex thought.
- Extended periods of time for scientific investigation.
- Making connections and relating ideas.

Key Concepts:
- Conducting experiments
- Deducting relationships
- Analyzing data

Based on Webb’s Depth of Knowledge

SEAN JUNKINS