# Hess’ Cognitive Rigor Matrix

This matrix draws from two widely accepted measures to describe cognitive rigor: Bloom’s Revised Taxonomy of Educational Objectives and Webb’s Depth-of-Knowledge Levels.

## Depth of Knowledge → Type of Thinking ↓

<table>
<thead>
<tr>
<th>DOK Level 1</th>
<th>DOK Level 2</th>
<th>DOK Level 3</th>
<th>DOK Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall &amp; Reproduction</td>
<td>Basic Skills &amp; Concepts</td>
<td>Strategic Thinking &amp; Reasoning</td>
<td>Extended Thinking</td>
</tr>
</tbody>
</table>

### Remember
- Recall conversions, terms, facts

### Understand
- Select appropriate words for use when intended meaning is clearly evident
- Specify, explain relationships
- Summarize
- Identify central ideas
- Explain, generalize, or connect ideas using supporting evidence (quote, text evidence, example…)
- Explain how concepts or ideas specifically relate to other content domains or concepts

### Apply
- Use language structure (pre/suffix) or word relationships (synonym/antonym) to determine meaning
- Use context to identify word meanings
- Obtain and interpret information using text features
- Use concepts to solve non-routine problems
- Devise an approach among many alternatives to research a novel problem

### Analyze
- Identify the kind of information contained in a graphic, table, visual, etc.
- Compare literary elements, facts, terms, events
- Analyze format, organization, & text structures
- Analyze or interpret author’s craft (e.g., literary devices, viewpoint, or potential bias) to critique a text
- Analyze multiple sources or texts
- Analyze complex/abstract themes

### Evaluation
- Cite evidence and develop a logical argument for conjectures based on one text or problem
- Evaluate relevancy, accuracy, & completeness of information across texts/sources

### Create
- Brainstorm ideas, concepts, problems, or perspectives related to a topic or concept
- Generate conjectures or hypotheses based on observations or prior knowledge (and experience)
- Develop a complex model for a given situation
- Develop an alternative Solution
- Synthesize information across multiple sources or texts
  - Articulate a new voice, alternate theme, or new perspective