



# HESS COGNITIVE RIGOR MATRIX (HEALTH & PHYSICAL EDUCATION):

Applying (Hess' Interpretation of) Depth of Knowledge to Porter's Cognitive Demand Categories\*\*



Porter's Cognitive Demand Categories	DOK Level 1 Recall & Reproduction Having the knowledge required; do not need to "figure it out"	DOK Level 2 Connect or Apply Skills & Concepts Making connections among skills/concepts or decisions (e.g., about approach, tools)	DOK Level 3 Strategic Thinking/Abstract Reasoning Complex & Abstract; Exploring multiple solution paths; Justifying with evidence	DOK Level 4 Extended Thinking Relating/developing complex ideas using multi-sources and evidence
Memorize	<ul style="list-style-type: none"> <li>o Recall or identify basic facts, terms, definitions, skills, rules, principles, concepts, symbols</li> <li>o Acquire new terms, vocabulary, etc.</li> </ul>			
Communicate	<ul style="list-style-type: none"> <li>o Define terms, principles, concepts</li> <li>o Describe how to perform a routine skill or task</li> <li>o Use words, visuals, or symbols to represent basic ideas, movements, procedures, etc.</li> </ul>	<ul style="list-style-type: none"> <li>o Explain concepts; show or predict relationships (if-then, cause-effect); provide examples - non-examples</li> <li>o Observe and interpret teacher or student demonstrations</li> <li>o Summarize a concept, series of events/movements, or a result</li> </ul>	<ul style="list-style-type: none"> <li>o Use evidence (data, examples, source, observations) to justify an interpretation of a result or performance</li> <li>o Locate or reproduce supporting evidence for results of effectiveness of a plan (e.g., exercise or diet routine)</li> <li>o Create a personal plan when given criteria</li> </ul>	<ul style="list-style-type: none"> <li>o Share results of comparing different plans (e.g., compare exercise or diet routines) using data and evidence from multiple sources or data sets</li> <li>o Explain how a concept relates across content domains or to "big ideas" (e.g., systems, patterns)</li> </ul>
Perform Procedures	<ul style="list-style-type: none"> <li>o Safely demonstrate or use appropriate tools or equipment</li> <li>o Execute/repeat basic skills or procedures (e.g., follow step-by-step directions or pattern)</li> <li>o Demonstrate a basic skill sequence, movement pattern, etc. with smooth transitions</li> </ul>	<ul style="list-style-type: none"> <li>o Make observations; Collect and record data and observations (e.g., health diary, skills progress)</li> <li>o Select and use appropriate tool or equipment for a given task</li> <li>o Complete routine tasks in a fitness assessment</li> </ul>	<ul style="list-style-type: none"> <li>o Plan, execute, and evaluate multi-step procedures (a dance routine, football play, rules of a new game, etc.)</li> <li>o Test effects and trends of using different activities by observing and collecting data (e.g., exercise or diet routines)</li> <li>o Select &amp; plan how to use a combination of movements to achieve a desired effect</li> </ul>	<ul style="list-style-type: none"> <li>o Design and conduct a performance (e.g., exercise or dance routine) using multiple sources/resources, and/or given constraints (e.g., use of space)</li> <li>o Test effects of different variables on performance (e.g., applied to a new situation)</li> </ul>
Apply Concepts/Make Connections	<ul style="list-style-type: none"> <li>o Apply rules or score-keeping of a game or simple routine</li> <li>o Apply appropriate content-specific vocabulary/terms to tasks</li> <li>o Brainstorm ideas, problems, or perspectives related to a situation, scenario, or observation</li> </ul>	<ul style="list-style-type: none"> <li>o Create an infographic or visual to show connections or to summarize key ideas (e.g., cause-effect, heart rate-activity type, warm up-cool down, healthy-unhealthy)</li> <li>o Explain connections among concepts or skills in a given context (e.g., movement or open space concepts, health benefits)</li> </ul>	<ul style="list-style-type: none"> <li>o Revise a plan (self, peer) based on feedback and evidence</li> <li>o Use concepts to explain phenomena or research/medical advances (e.g., use of steroids, drugs, food choices)</li> <li>o Investigate how an event/advancement led to a new perspective or outcome</li> </ul>	<ul style="list-style-type: none"> <li>o Apply and adapt information and concepts to real-world situations</li> <li>o Integrate ideas from multiple sources to extend an idea or solve a problem with an alternative solution</li> <li>o Trace the evolution of (game, drug, etc.) from past to present, citing sources used</li> </ul>
Analyze Information	<ul style="list-style-type: none"> <li>o Identify, describe, match, or name parts in a diagram/visual (e.g., muscle groups or skeletal system) or patterns</li> <li>o Determine which skill, rule, or principle applies to a given situation</li> <li>o Record performance data</li> </ul>	<ul style="list-style-type: none"> <li>o Compare-contrast routines, skill sets, or qualities (e.g., use T-chart, graphic organizer for locomotor-non-locomotor)</li> <li>o Generate questions &amp; make predictions based on observations/information</li> <li>o Classify types of ... (movements, sports, symptoms, examples, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>o Analyze data in order to recognize patterns or draw conclusions based on evidence (e.g., batting averages, areas needing remediation)</li> <li>o Identify faulty arguments, strategies, or misrepresentations of data or media message</li> <li>o Defend the selection of criteria used to critique or develop a performance or product</li> </ul>	<ul style="list-style-type: none"> <li>o Research a topic in-depth, evaluating relevancy, accuracy &amp; completeness of information from multiple sources/perspectives</li> <li>o Analyze evidence and recommend the most effective course of action for intended purpose (e.g., food, fitness)</li> </ul>

Use these Hess CRM Curricular Examples with most assignments, assessments, or learning activities for Health and Physical Education. See also the Hess CRM for Fine Arts with examples for dance.

\*\*Porter's Cognitive Categories generally align with most HPE national standards/expectations and are intersected with DOK levels in the Hess CRM for HPE.  
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