



# Science Cognitive Identification Multiple-Choice Questions

The evaluation of questions is based on:

- What was taught in the curriculum,
- How it was taught in the curriculum,
- What was presented/experienced in practice/homework problems,
- What is in the learning guide.

It is **NOT** based on:

- How I feel the students will perform,
- How the students would evaluate the question.

## Spectrum of Multiple Choice Question Types

		Cognitive Variety (Breadth)						
		Definitions	Diagrams	Comparisons	Graphs	Relationships	Problems	Scenario Problems
Cognitive Complexity (Depth)	Easy (Remembering)	Knowing the definition	Identify definition or variable in a familiar diagram	Similarity or differences of a single aspect between 2 things	Identify the parts, function or name	Express the relationship between 2 variables	Problems that require the use of 1 equation <u>without</u> variable manipulation	Familiar scenario with previously discussed questions or outcomes
	Medium (Understanding)	Understanding the definition in a process	Identify one or more concepts in a familiar diagram	Similarity or differences of a multiple aspects between 2 things	<ul style="list-style-type: none"> <li>• Identify the outcome in a 1 step process</li> <li>• Direct calculation</li> </ul>	Qualitatively manipulate variables in a familiar situation	Problems that require the use of 1 equation <u>with</u> variable manipulation	Familiar scenario with new questions or outcomes
	Hard (Applying)	Understanding a situational definition	Identify one or more concepts in a unfamiliar diagram	Similarity or differences between 3 or more things	<ul style="list-style-type: none"> <li>• Identify the outcome in a 2 or more step process</li> <li>• Use of 2 or more graphics</li> </ul>	Qualitatively manipulate variables in an unfamiliar situation	<ul style="list-style-type: none"> <li>• Problems that require 2 or more equations with or without variable manipulation</li> <li>• Problems that require 2 or more calculations with different equations</li> </ul>	Unfamiliar scenario with previously discussed questions or outcomes or new questions or outcomes