

## Learning Taxonomy – Bloom’s Cognitive Domain

<p><i>Cognitive</i> learning is demonstrated by knowledge recall and the intellectual skills: comprehending information, organizing ideas, analyzing and synthesizing data, applying knowledge, choosing among alternatives in problem-solving, and evaluating ideas or actions</p>		
Level and Definition	Illustrative Verbs	Example
<p><b>Knowledge</b> is defined as the remembering of previously learned material. This may involve the recall of a wide range material, from specific facts to complete theories, but all that is required is for the student to bring to mind the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.</p>	<p>arrange, define, describe, duplicate, identify, label, list, match, memorize, name, order, outline, recognize, relate, recall, repeat, reproduce, select, state</p>	<p>Memory of specific facts, terminology, rules, sequences, procedures, classifications, categories, criteria, methodology, principles, theories and structure. Recite a policy. Quote prices from memory to a customer. Know the safety rules. Describe the painting.</p>
<p><b>Comprehension</b> is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.</p>	<p>classify, convert, defend, describe, discuss, distinguish, estimate, explain, express, extend, generalize, give examples, identify, indicate, infer, locate, paraphrase, predict, recognize, rewrite, report, restate, review, select, summarize, translate</p>	<p>Stating problem in own words. Translating a chemical formula. Understanding a flow chart. Translating words and phrases from a foreign language. Explains in one's own words the steps for performing a complex task. What is the subject or theme?</p>
<p><b>Application</b> refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.</p>	<p>apply, change, choose, compute, demonstrate, discover, dramatize, employ, illustrate, interpret, manipulate, modify, operate, practice, predict, prepare, produce, relate, schedule, show, sketch, solve, use, write</p>	<p>Taking principles learned in math and applying them to figuring the volume of a cylinder in an internal combustion engine. Use a manual to calculate an employee's vacation time. If you could interview the artist, what questions would you ask?</p>
<p><b>Analysis</b> refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.</p>	<p>analyze, appraise, break down, calculate, categorize, compare, contrast, criticize, diagram, differentiate, discriminate, distinguish, examine, experiment, identify, illustrate, infer, model, outline, point out, question, relate, select, separate, subdivide, test</p>	<p>Discussing how fluids and liquids differ. Detecting logical fallacies in a student's explanation of Newton's 1st law of motion. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. Explain what you think the artist is trying to say about the subject matter.</p>
<p><b>Synthesis</b> refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns of structures. Integrate.</p>	<p>arrange, assemble, categorize, collect, combine, comply, compose, construct, create, design, develop, devise, design, explain, formulate, generate, integrate, manage, modify, organize, plan, prepare, propose, rearrange, reconstruct, relate, reorganize, revise, rewrite, set up, summarize, synthesize, tell, write</p>	<p>Writing a comprehensive report on a problem-solving exercise. Planning a program or panel discussion. Writing a comprehensive term paper. Integrates training from several sources to solve a problem. What ways would you render the subject differently?</p>
<p><b>Evaluation</b> is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose), and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious value judgments based on clearly defined criteria.</p>	<p>appraise, argue, assess, attach, choose, compare, conclude, contrast, defend, describe, discriminate, estimate, evaluate, explain, judge, justify, interpret, relate, predict, rate, select, summarize, support, value</p>	<p>Making judgments based on internal evidence or external criteria. Evaluating alternative solutions to a problem. Detecting inconsistencies in the speech of a student government representative. Explain and justify a new budget. Hire the most qualified candidate. What is your opinion of the painting? Why?</p>