

Technician and Technologist Learning Levels

The learning outcome statements in each CTAC utilize cognitive domain action verbs to indicate the level of knowledge and the development of intellectual skills to be achieved by students in a technician or technologist program.

Based on Bloom's revised Taxonomy of Learning by Anderson and Krathwohl in 2001, there are six major levels of cognitive processes, including the recall or recognition of specific facts, procedural patterns and concepts. The levels can be thought of as degrees of difficulties, starting from the simplest to the most complex. That is, the first one must normally be mastered before the next one can be achieved.

A technician program should take students to the **applying** and **analyzing** levels. A technologist program should take students to the **evaluating** and **creating** levels.

Level	Definition	Action Verbs
Remembering	Exhibit memory of previously learned material by recalling facts, terms, basic concepts and answers.	Choose, define, find, label, list, match, memorize, name, omit, outline, quote, recall, recognize, record, relate, reproduce
Understanding	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas.	Classify, compare, contrast, convert, explain, describe, distinguish, express, extend, extrapolate, illustrate, infer, locate, paraphrase, report, restate, review, sequence, summarize, translate
Applying	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Access, apply, build, calculate, calibrate, change, collaborate, collect, communicate, compute, conceptualize, conduct, construct, contribute to, deconstruct, demonstrate, develop, document, deploy, implement, install, maintain, manipulate, measure, monitor, operate, organize, perform, prepare, present, process, produce, sample, schedule, select, service, sketch, solve, support, troubleshoot, utilize, write
Analyzing	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Analyze, assume, breakdown, classify, correct, diagram, differentiate, discriminate, discover, dissect, distinguish, discuss, divide, examine, function, identify, illustrate, infer, inspect, relate, resolve, simplify, survey
Evaluating	Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.	Agree, appraise, assess, audit, check, choose, compare, conclude, contrast, criticize, critique, defend, detect, determine, diagnose, estimate, evaluate, interpret, judge, justify, prioritize, rank, rate, recommend, research, select, test, validate, verify
Creating	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	Adapt, assemble, build, categorize, combine, compile, compose, configure, construct, create, delete, derive, design, develop, formulate, generalize, generate, integrate, manage, maximize, minimize, modify, organize, originate, plan, predict, propose, program, rearrange, reconstruct, revise, rewrite, solve, specify, suppose

Note: The list of action verbs is not comprehensive and other verbs may be used in learning outcomes.