Bloom's Taxonomy

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Bloom's Taxonomy is a framework for organizing evidence of learning into levels of complexity and maturity. Published in 1956, the tool was named for professor Benjamin Bloom, who was the first author of the taxonomy developed by 34 scholars at a series of APA conferences between 1949 and 1953. Revised in 2002, it is one of the most widely utilized tools in K-12 and higher education, describing six levels that capture lower to higher-order thinking.

Bloom's Level	Description
Remembering (lowest-order)	Students can retrieve relevant information from their long-term memory
Understanding	Students can determine the meaning of instructional messages, including oral, written and graphic communication
Applying	Students can carry out or use a procedure in a given situation
Analyzing	Students can break material into its constituent parts and detect how the parts relate to one another and to an overall structure or purpose
Evaluating	Students can make a judgment based on criteria and standards
Creating (highest-order)	Students can put elements together to form a novel, coherent whole or make an original product

Adapted from Krathwohl DR. (2002). A Revision of Bloom's Taxonomy: An Overview. Theory Into Practice 41(4).

Below are sample learning goals and objectives that ascend levels of Bloom / Krathwohl's cognitive domain:

- At the end of the course, students will be able to (a formulation known as SWBAT):
  - **identify** specific stages of language acquisition
  - **describe** the colonization of the Americas by the British, French and Spanish
  - **describe** major theories of language development (e.g. nativist, empiricist, interactionist, behaviorist, cognitive)
  - **collect** and analyze research data
  - **articulate** gaps within theories of human language acquisition
  - **verbally present** research findings
  - **disseminate** research findings in written form
  - **analyze** the outcomes of the Civil War
  - **design** a controlled experiment

Learning Objectives

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Learning objectives are the particular knowledge, skills, and abilities that an instructor intends for students to learn or develop. Objectives are more specific than learning *goals*, which take a 10,000-foot view of gains in a course; instead, objectives have specific, measurable outcomes. To this end, the learning activities undertaken by the class and the assessments used to gauge student learning must match – be aligned with – the stated learning objectives.

Learning Goal: Students will develop a broader knowledge of American history.
Learning Objective: Students will be able to describe the timeline of colonization of the Americas by the British, French, and Spanish.

Learning Goal: Students will develop discipline-specific research skills.
Learning Objective: Students will be able to design a controlled experiment.

Learning Goal: Participants will consider the use of learning objectives.
Learning Objective: Participants will develop and write learning objectives for a library instruction session.

This chart maps verbs commonly used in learning objectives to levels of Bloom's Taxonomy:

Bloom's Level	Sample Action Verbs
Remembering (lowest-order)	list, define, describe, recall, label, match, observe, identify, reproduce
Understanding	explain, describe, interpret, paraphrase, classify, restate, summarize, express, generalize, recognize
Applying	apply, choose, predict, use, illustrate, demonstrate, hypothesize, modify, interpret, develop
Analyzing	contrast, distinguish, test, differentiate, categorize, compare, analyze, research, examine, criticize, experiment, map, separate
Evaluating	evaluate, judge, predict, argue, persuade, convince, grade, recommend, rank, select
Creating (highest-order)	develop, create, design, construct, synthesize, compose, conjecture, formulate, imagine, invent

To draft effective learning objectives, instructors can consider the following formula:

Students will be able to (ACTION VERB) a/an/the (NOUN) of/by/for (MEASURABLE DETAIL).

Bloom's Taxonomy Action Verbs

Level	Definition	Sample verbs					Sample behaviors
KNOWLEDGE	Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.	arrange define describe duplicate	identify label list match	memorize name order outline	recognize relate recall repeat	reproduce select state	The student will define the 6 levels of Bloom's taxonomy of the cognitive domain.
COMPREHENSION	Student translates, comprehends, or interprets information based on prior learning.	explain summarize paraphrase describe illustrate classify	convert defend describe discuss distinguish estimate explain	express extend generalized give example(s) identify indicate	infer locate paraphrase predict Recognize	rewrite review select summarize translate	The student will explain the purpose of Bloom's taxonomy of the cognitive domain.
APPLICATION	Student selects, transfers, and uses data and principles to complete a problem or task with a minimum of direction.	use compute solve demonstrate apply construct	apply change choose compute demonstrate discover dramatize	employ illustrate interpret manipulate modify operate	practice predict prepare produce relate schedule	show sketch solve use write	The student will write an instructional objective for each level of Bloom's taxonomy.
ANALYSIS	Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question	analyze categorize compare contrast separate apply	change discover choose compute demonstrate dramatize	employ illustrate interpret manipulate modify operate	practice predict prepare produce relate schedule	show sketch solve use write	The student will compare and contrast the cognitive and affective domains.
SYNTHESIS	Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.	create design hypothesize invent develop arrange assemble	categorize collect combine comply compose construct create	design develop devise explain formulate generate plan	prepare rearrange reconstruct relate reorganize revise	rewrite set up summarize synthesize tell write	The student will design a classification scheme for writing educational objectives that combines the cognitive, affective, and psychomotor domains.
EVALUATION	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	Judge Recommend Critique Justify Appraise Argue	Assess Attach Choose Compare Conclude Contrast	Defend Describe Discriminate Estimate Evaluate Explain	Judge Justify Interpret Relate Predict	Rate Select Summarize Support Value	The student will judge the effective-ness of writing objectives using Bloom's taxonomy.

Reference: http://chiron.valdosta.edu/whuitt/col/cogsys/bloom.html