

Bloom's Taxonomy: A Framework for Learning

Over forty years ago, Benjamin Bloom and several co-workers created a taxonomy of educational objectives that continues to provide a useful structure for organizing learning exercises and assessment experiences at all levels of education (Bloom and others, 1956; Anderson and Sosniak, 1994; Anderson and Krathwohl, 2001). Bloom's taxonomy divided cognitive learning into six levels, from lower-level thinking skills such as memorization to higher order thinking that involves the evaluation of information. The taxonomy has been used by instructors in geology courses to guide the development of questions that address a full range of cognitive skills. Each taxonomy level is described briefly below and examples of specific questions linked to each of level are discussed. The revised framework of Pohl (2000) is displayed (original levels in parentheses).

Bloom's Taxonomy (original)	Learning Skill	Question stems*
Remembering (Knowledge)	Recognizing and Recalling	What is . . . ? Who, what, when, where, how ...? Describe . . .
Understanding (Comprehension)	Interpreting, Exemplifying, Classifying, Summarizing, Inferring, Comparing, Explaining	What would happen if . . . ?; What does . . . illustrate about . . . ?; What is analogous to . . . ? How would you explain . . . ?; Illustrate the . . . ?; What was the main idea . . . ?
Applying (Application)	Executing and Implementing,	How could . . . be used to . . . ? What is another example of . . . ? Use these steps to solve ... Clarify why ...
Analyzing (Analysis)	Differentiating, Organizing, Attributing	How does . . . affect . . . ? What are the differences (similarities) between . . . ? What causes . . . ? How does . . . compare/contrast with . . . ?
Evaluating (Synthesis)	Checking, Critiquing, Reorganizing, Assessing, Making judgments	What is a possible solution for the problem of . . . ? How does . . . relate to what we learned before about . . . ? Why is . . . important? What is the best . . . , and why? Do you agree/disagree that . . . ?
Creating (Evaluation)	Generating, Planning, Producing	Can you design a ...? What would happen if ...? Can you create new uses for ...? How many ways can you ...?

* revised from King, A., 1995, Teaching of Psychology, v.22, p. 13-17.