

Bloom's Taxonomy

An aid to the construction of classroom questioning. Benjamin Bloom (1956) provides a useful structure against which to judge curriculum content and pupil learning for its value, balance, and the level of intellectual demand.

Competence	Skills Demonstrated
A. Knowledge	observation and recall of information knowledge of dates, events, places knowledge of major ideas mastery of subject matter Questions cues: list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.
B. Comprehension	understanding information grasp meaning translate knowledge into new context interpret facts, compare, contrast, order, group, infer causes predict consequences Questions cues: summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend.
C. Application	use information use methods, concepts, theories in new situation solve problems using required skills/knowledge Question cues: apply, demonstrate, calculate, complete illustrate, show, solve, modify, relate, change, classify, experiment, discover.
D. Analysis	seeing patterns organization of parts recognition of hidden meanings identification of components Question cues: analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer.
E. Synthesis	use old ideas to create new ones generalize from given facts relate knowledge form several areas predict, draw conclusions Question cues: combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite.
F. Evaluation	compare and discriminate between ideas assess value of theories, presentations make choices based on reasoned argument verify value of evidence recognize subjectivity Question cues: assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize.

MORE ON BLOOM.... QUESTIONS INQUIRY

Inquiry

After you have a question, read for the answers. This process is most effective when you are reading something that is difficult or uninteresting for you.

Engage in a dialogue with the author. Imagine you are having a conversation with the author and aim your questions at him.

"What is your basis for making that statement?"

"Are you including the most relevant facts?"

"What is the practical application of your theory?"

"Why don't you come to the point?"

Do not hesitate to raise questions which are difficult - some which you believe might even be difficult for the author to answer.

- Questions raised during reading sustain interest in discovering the literal meaning; they also probe beneath the surface; they lead to critical analysis.

AFTER READING

Test yourself. By raising comprehensive questions, you can discover whether you have understood; whether the structure is clear in your mind. Such questions prepare you for class discussions, examinations, quizzes and papers.

Review by using Inquiry as a method of instruction. Discuss something you have studied with a classmate by using Questions only, rather than making statements of what you have learned. Ask questions of each other which will lead you both to discover what you have learned. This process requires imagination and versatility, but it assures you that you have assimilated what you have read.

Criticize. Now that you have a reasonably full understanding of what you have read, you can raise comprehensive, critical questions about the internal consistency of the material, its value, its validity. And, you can raise questions about the ramifications of what you have read, its importance, its application, its relationship with other knowledge.

- Questions raised after reading are a check on your understanding; they extend your understanding into practical applications; they generate criticism.

The Control of Questions

While a flow of questions will sustain the reader's interest and attention, control over the quality and direction of the questions is essential for meaningful Inquiry. Simple questions go after facts or the literal meaning. Who? What? Where? More searching questions examine internal connections among ideas within a chapter or book. Other questions probe for assumptions or the author's intent. Still others reach beyond the author's work to explore its implications, its validity or worth, its place in a larger field of knowledge.

The Anatomy of Questioning

1. **MEMORY QUESTIONS** simply require the recall of information that was actually stated, either facts or stated concepts and generalizations.

For example: "What is the specific gravity of mercury?"

"Review the development of the United Nations."

*The hierarchy is reprinted by permission from: Benjamin S. Bloom, et. al., TAXONOMY OF EDUCATIONAL OBJECTIVES, Handbook I, David McKay Company, Inc., 1956, and includes modifications by Norris M. Sanders, CLASSROOM QUESTIONS - WHAT KINDS? , New York: Harper and Row, 1966.

2. **TRANSLATION QUESTIONS** involve expressing an idea in a different form of communication (words to symbols; symbols to words; words to diagrams; words to other words, etc.).
3. **INTERPRETATION QUESTIONS** require drawing relationships among facts, definitions, generalizations or values, such as comparison or contrast questions, or questions which seek a cause and effect relationship.

For example: "Compare the effects of alcohol and marijuana."

"What is the difference in meaning of the concept of 'democracy' as used in the United States and the Soviet Union?"

4. **APPLICATION QUESTIONS** ask the reader to transfer concepts from the academic context to the context of everyday life.

For example: "How does the population explosion affect me?"

"How does the concept of immediate approval or reward apply in a child's learning to talk?"

5. **ANALYSIS QUESTIONS** require the reader to identify the logical steps used in a thinking process to arrive at a conclusion.

For example: "How does Jefferson arrive at his conclusion that all men are created equal?"

"Why have some black leaders changed their emphasis from integration to black power?"

In working with "analysis" questions, one must understand the parts as well as the reasoning process used to hold the parts together.

6. **SYNTHESIS QUESTIONS** ask the reader to bring together information in order to create a new idea which was not explicitly stated previously.

For example: "What would be a working definition of valid historical knowledge?"

"Develop a Doctrine as a guide for United States' relationships with Southeast Asia over the next decade."

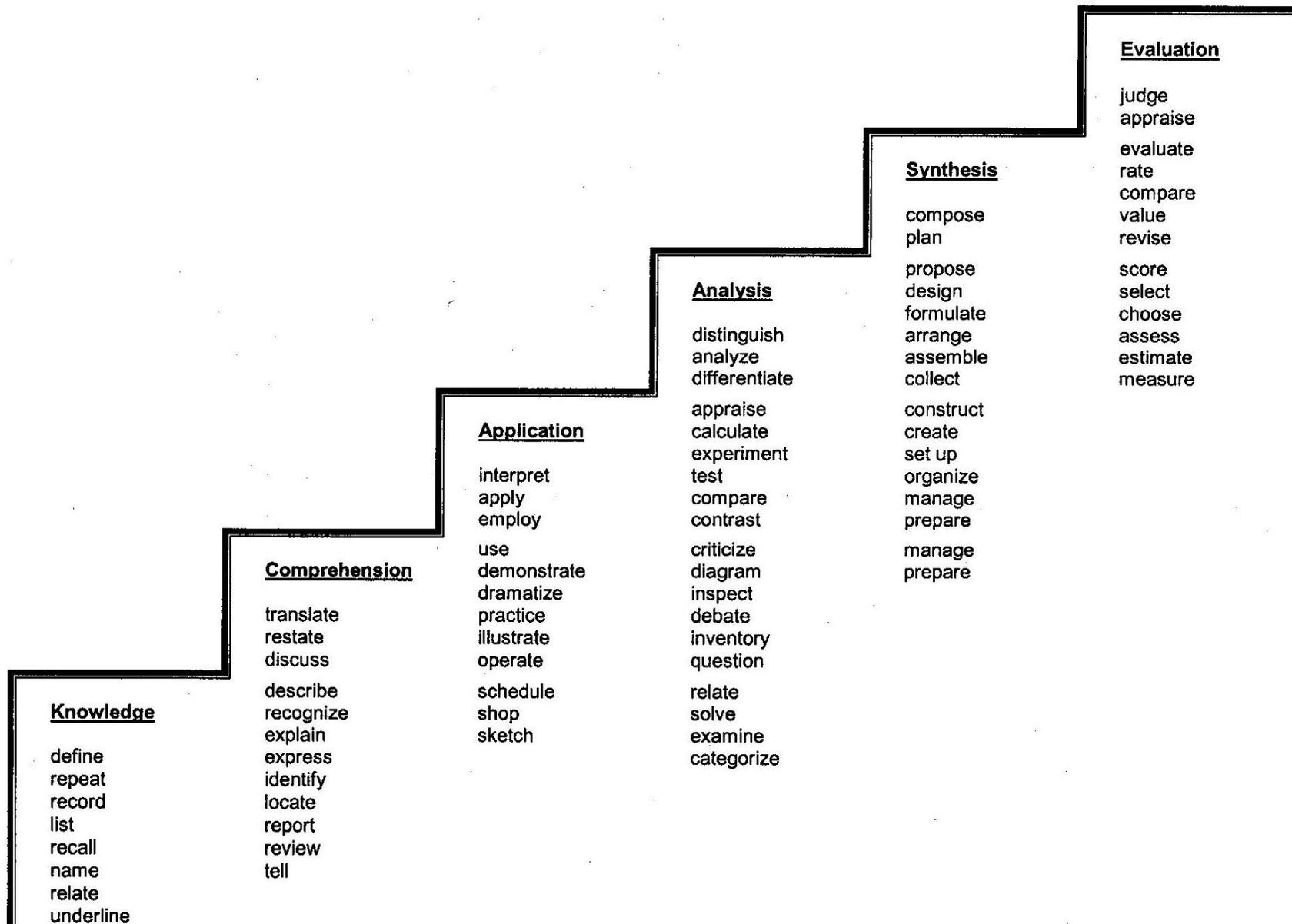
"Synthesis" questions allow for a controlled freedom in developing answers; recognizing many possible avenues and divergent thinking, yet working within the limits set by the particular problems, materials or methodologies. The answer to a "synthesis" question always must provide an outcome, whether it be a unique communication, a proposed set of operations, or a set of abstract relations.

7. **EVALUATION QUESTIONS** require judgments of value and validity measured against specific standards which are derived from the relationships of internal criteria and/or external criteria.

For example: "Which of the following comes closest to being the Great American Novel: Moby Dick, Huckleberry Finn or The Great Gatsby? Why?"

"When should individual freedom be given precedence over the welfare of the community as a whole, and vice versa? Why?"

SOME POSSIBLE VERBS FOR USE IN INSTATING COGNITIVE OUTCOMES¹



¹ Compliments of Marybelle Savage