## Bloom's Taxonomy

In the 1950s, prominent educational psychologist Benjamin Bloom, along with several peers, developed a hierarchical model for classifying educational goals and objectives (*Taxonomy of Educational Objectives*, 1956). What is known today as Bloom's Taxonomy has been used—and refined over the years—by educators throughout the world.

In short, Bloom and his colleagues identified six classifications:

1. **Knowledge:** "Recall of specifics and universals,…methods and processes,…a pattern, structure, or setting"

   *Bloom, et al, assert that Knowledge is a prerequisite for the 5 skills and abilities that follow.

2. **Comprehension:** "Making use of the material or idea being communicated without necessarily relating it to other material or seeing it's fullest implications"
3. **Application:** "Use of abstractions in particular and concrete situations"
4. **Analysis:** distilling information "into its constituent elements or parts such that the relative hierarchy of ideas is made clear"
5. **Synthesis:** "Putting together [the] elements and parts so as to form a whole"
6. **Evaluation:** Making "judgments about the value of material and methods for given purposes"

Taxonomy of Educational Objectives (Handbook One, pp. 201-207)

More recently, one of Bloom's original collaborators, David Krathwohl, joined by others, including experts in assessment, developed a revised taxonomy that is particularly helpful when writing test questions (*A Taxonomy for Teaching, Learning, and Assessment*, 2001). The verbs used in the updated schema permit relatively easy associations to the ABP content outlines developed for general pediatrics and the subspecialty examinations. Consider these when formulating an appropriate test question.
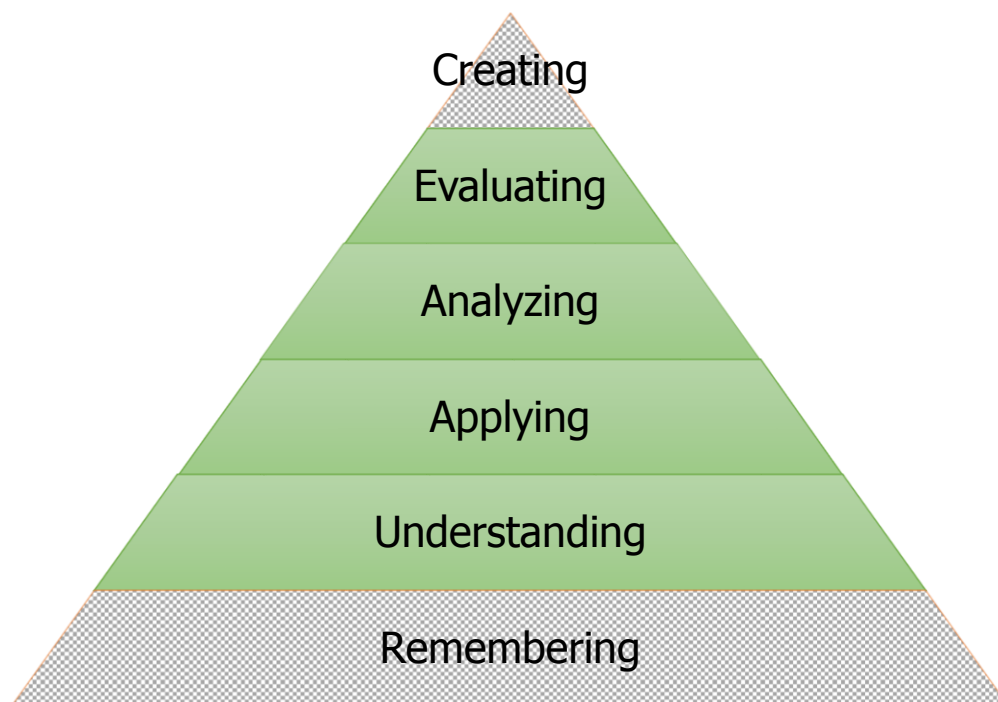
Understanding, applying, analyzing, and evaluating are recognized as the most desirable and practical objectives when developing good multiple choice questions that require critical thinking as opposed to remembering.

Understanding
Explaining
Interpreting

- Which of the following best explains...?
- Which of the following is the most likely explanation for...?
- Which of the following is the most likely diagnosis?

Applying
Implementing
Predicting

- Which of the following is the most appropriate next step?
- Which of the following conditions is most likely to occur?
- Which of the following positive laboratory results would be expected?

Analyzing
Differentiating
Attributing

- Which of the following suggests a diagnosis of X rather than Y?
- Which additional finding would suggest a diagnosis of X?

Evaluating
Checking
Testing

- This condition could have been prevented by administration of which of the following to the patient?
- If laboratory findings show elevated levels of X, then which of the following is most likely the cause?