

Strategies for Communicating High Expectations to Students  
January 30, 2005  
Tip #5

## HIGHER ORDER THINKING

Higher order thinking skills require students to make choices, solve problems and use reasoning to live in our complex world. Teachers assist students to develop these skills by asking students to think deeply about content and relate it to their real world experiences. According to the research, students who are perceived as low achievers have fewer opportunities to develop higher level thinking skills because they are asked fewer higher order questions. Low achieving students are more often asked lower level questions that simply require recall of learned content. This may communicate to students that they are not expected to engage in higher order thinking and does not challenge them to engage in complex thinking.

Benjamin Bloom created the Bloom's Taxonomy for categorizing levels of thinking. There are six levels of thinking that form a continuum from knowledge (the lowest) to evaluation (the highest).

Each of these levels is described below. Bulleted under each level are suggested question cues for raising the level of higher order thinking.

**KNOWLEDGE:** the identification and recall of information.

**Question cues:**

- \* List                      \* identify                      \* label
- \* define                      \* examine                      \* quote

**COMPREHENSION:** the organization and selection of ideas. This category helps students to clarify their thoughts.

**Question cues:**

- summarize                      \* estimate                      \* estimate
- predict                      \* discuss                      \* interpret

**APPLICATION:** the ability to apply new understandings. Students are encouraged to make connections and see analogies at this level.

**Question cues:**

- What would happen if...                      \* solve                      \* demonstrate
- modify                      \* experiment                      \* relate

**ANALYSIS:** the separation of the whole into parts and the recognition of hidden meanings. This category allows students to make meaningful examination of information.

**Question cues:**

- arrange           \* infer               \* explain
- connect           \* compare           \* separate

**SYNTHESIS:** the application of concepts in a new way. Students will see themselves as active in problem solving in this category.

**Question cues:**

- create             \* invent           \* compose
- rearrange         \* rewrite          \* substitute

**EVALUATION:** the development of opinions, judgments or decisions. At this level students examine issues from multiple points of view. Students express their own thoughts but also consider the views of others.

**Question cues:**

- assess             \* judge            \* recommend
- conclude          \* convince         \* discriminate

In February, additional ideas about higher order thinking will be posted at this site.