

Bloom's Taxonomy

Descriptions of the Major Categories in the Cognitive Domain of Educational Objectives
(Bloom, 1956)

Convergent Thinking - Emphasis on mastery of facts and their usage

1. **Knowledge** is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.

Verbs you can use in writing objectives:

| | | | |
|----------|-------|---------|-----------|
| define | label | name | reproduce |
| describe | list | outline | select |
| identify | match | recall | state |

Sample Phrases and Questions:

| |
|-----------------------------------|
| "What did the book say about...?" |
| Define..." |
| "Who invented...?" |
| List three..." |

2. **Comprehension** is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (e.g. words to numbers), by interpreting material (e.g. explaining or summarizing), and by estimating future trends (e.g. predicting consequences or effects). These learning outcomes go one step beyond simple remembering of material and represent the lowest level of understanding.

Verbs you can use in writing objectives:

| | | | |
|-------------|----------|---------------|------------|
| convert | estimate | generalize | paraphrase |
| defend | explain | give examples | predict |
| distinguish | extend | infer | summarize |

Sample Phrases and Questions

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|----------------------------------|
| "Explain the..." |
| "What could you conclude...?" |
| "State in your own words..." |
| "What does the picture mean...?" |
| "If it rains, then what...?" |
| "What reasons or evidence...?" |

3. **Application** refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a high level of understanding than those under comprehension.

Verbs you can use in writing objectives

| | | | |
|-------------|------------|---------|--------|
| apply | develop | operate | relate |
| change | discover | predict | show |
| compute | manipulate | prepare | solve |
| demonstrate | modify | produce | use |

Sample Phrases and Questions

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|---|
| "If you know A and B, how could you determine C?" |
| "What other possible reasons...?" |
| "What might they do with...?" |
| "What would happen if...?" |

Divergent Thinking - Emphasis on original thinking, open-ended answers, and a large number of possible solutions.

4. **Analysis** refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both content and the structural form of the material.

Verbs you can use in writing objectives

| | | | |
|---------------|--------------|------------|-----------|
| analyze | Discriminate | illustrate | relate |
| break down | Distinguish | infer | select |
| diagram | Examine | outline | separate |
| differentiate | Identify | point out | subdivide |

Sample Phrases and Questions

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| "What was the author's purpose, bias, or prejudice?" |
| "What must you know to believe that to be true?" |
| "Does that follow?" |
| "Which are facts and which are opinions?" |

5. **Synthesis** refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (e.g. theme or speech), a plan of operation (e.g. research proposal), or a set of abstract relations (e.g. scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formation of new patterns or structures.

Verbs you can use in writing objectives

| | | | |
|------------|----------|-------------|-----------|
| categorize | Design | plan | revise |
| combine | Explain | rearrange | rewrite |
| compile | Generate | reconstruct | summarize |
| create | Modify | relate | tell |
| devise | Organize | reorganize | write |

Sample Phrases and Questions

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| "If no one else knew, how could you find out?" |
| "Can you develop a new way?" |
| "Make up..." |
| "What would you do if...?" |

6. **Evaluation** is concerned with the ability to judge the value of material (e.g. statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (e.g. organization) or external criteria (e.g. relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are the highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

Verbs you can use in writing objectives

| | | | |
|----------|--------------|-----------|-----------|
| appraise | criticize | evaluate | recommend |
| compare | describe | judge | relate |
| conclude | discriminate | justify | summarize |
| contrast | explain | interpret | support |

Sample Phrases and Questions

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|--|
| "Which policy will result in the greatest good for the greatest number?" |
| "For what reason would you favor...?" |
| "Which of the books would you consider to be of greater value?" |
| "Evaluate that idea in terms of cost and community acceptance." |

Adapted from *Stating Behavioral Objectives for Classroom Instruction*, by Norman E. Grolund. The Macmillan Company: New York, 1970.