

Lower Level Thinking Skills

**Remember**

Retrieve relevant information from long-term memory. (Anderson & Krathwohl, 2001, p.66.)

Example Objectives:

- FACTUAL:** List primary and secondary colors.
- CONCEPTUAL:** Recite symptoms of exhaustion.
- PROCEDURAL:** Recall how to perform CPR.
- METACOGNITIVE:** Identify strategies for retaining information.

**Key Verbs**

- |           |           |
|-----------|-----------|
| Choose    | Provide   |
| Copy      | Quote     |
| Define    | Recall    |
| Describe  | Recite    |
| Duplicate | Repeat    |
| Group     | Reproduce |
| Identify  | Say       |
| Indicate  | Select    |
| Label     | Show      |
| List      | Sort      |
| Locate    | State     |
| Match     | Tell      |
| Name      | Underline |
| Omit      |           |

**Possible Assignments**

- Quiz/Exam (Multiple choice, T/F, Matching, Short answer, Fill-in-blank)
- Glossary of terms
- Label diagrams, charts, maps, MRIs, scans, etc.
- Prepare notes from a lecture or reading
- Complete a worksheet

**Understand**

Construct meaning from instructional messages. (Anderson & Krathwohl, 2001, p.70.)

Example Objectives:

- FACTUAL:** Summarize feature of a new product.
- CONCEPTUAL:** Classify adhesives by toxicity.
- PROCEDURAL:** Explain assembly instructions.
- METACOGNITIVE:** Predict one's response to culture shock.

**Key Verbs**

- |               |            |
|---------------|------------|
| Alter         | Indicate   |
| Associate     | Infer      |
| Calculate     | Interpret  |
| Categorize    | Locate     |
| Change        | Match      |
| Chart         | Outline    |
| Classify      | Paraphrase |
| Compare       | Predict    |
| Contrast      | Relate     |
| Describe      | Rephrase   |
| Diagram       | Report     |
| Distinguish   | Rewrite    |
| Explain       | Restate    |
| Generalize    | Select     |
| Give examples | Summarize  |
| Illustrate    | Translate  |

**Possible Assignments**

- Quiz/Exam (Multiple choice, T/F, Matching, Short answer, Fill-in-blank Numeric responses)
- Writing assignment (Essay, Blog, Wiki, Minute-Paper)
- Present a summary (Forum, Paper, Video, Audio)
- Participate in a discussion
- Make a visual aid

**Apply**

Use procedures to perform exercises or solve problems. (Anderson & Krathwohl, 2001, p.77.)

Example Objectives:

- FACTUAL:** Apply your knowledge to answer frequently asked questions.
- CONCEPTUAL:** Illustrate best practices to novices.
- PROCEDURAL:** Perform pH tests of water samples.
- METACOGNITIVE:** Use techniques that match one's strengths.

**Key Verbs**

- |             |                    |
|-------------|--------------------|
| Acquire     | Interview          |
| Act         | Organize           |
| Adopt       | Outline            |
| Apply       | Paint              |
| Assemble    | Paraphrase         |
| Build       | Perform            |
| Calculate   | Relate             |
| Construct   | Report             |
| Demonstrate | Search             |
| Develop     | Show               |
| Distinguish | Simulate           |
| Dramatize   | Sketch             |
| Employ      | Solve              |
| Experiment  | State consequences |
| Formulate   | Teach              |
| Illustrate  | Use                |
| Interpret   |                    |

**Possible Assignments**

- Quiz/Exam (problem solving, case study/scenario, essay)
- Writing assignment (essay, lab report, summary, lesson plan, interview, outline, reaction/response)
- Discussion question (reaction/response, interview, scenario/case study)
- Reaction and response (individual writing, journal, blog, reflection paper)
- Lab assignment
- Case study
- Practice exercise
- Presentation / Project (video, audio, demonstration of skill, performance)
- Create a chart
- Draw an illustration/sketch/chart
- Conduct an interview

Adapted from Support Document 13 - Bloom's Taxonomy Teacher Planning Kit Retrieved from <http://ccfestivaloflearning2012.files.wordpress.com/2012/10/support-document-13-blooms-taxonomy-teacher-planning-kit1.pdf>

Heer, R. A *Model of Learning Objectives* based on A *Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Retrieved from <http://www.celtiastate.edu/teaching/effective-teaching-practices/revise-blooms-taxonomy>

Anderson, L.W., & Krathwohl, D.R. *A Taxonomy for Learning, Teaching, and Assessing*. New York: Addison, Wesley, Longman, Inc, 2001.

## Higher Level Thinking Skills

### Analyze

Break materials into its constituent parts and determine how the parts are related to each other and to an overall structure. (Anderson & Krathwohl, 2001, p.79.)

#### Example Objectives:

**FACTUAL:** Determine the most complete list of activities.  
**CONCEPTUAL:** Differentiate high and low culture.  
**PROCEDURAL:** Test for compliance to regulations.  
**METACOGNITIVE:** Break down one's biases.

#### Key Verbs

|               |              |
|---------------|--------------|
| Analyze       | Give reasons |
| Appraise      | Group        |
| Arrange       | Highlight    |
| Break down    | Investigate  |
| Categorize    | Order        |
| Cause/Effect  | Organize     |
| Classify      | Prioritize   |
| Compare       | Rank         |
| Contrast      | Reorganize   |
| Deduce        | Research     |
| Determine     | Separate     |
| Diagram       | Sequence     |
| Differentiate | Survey       |
| Distinguish   | Test for     |
| Find          |              |

#### Possible Assignments

Quiz/Exam (analysis, case study/scenario, essay)  
 Writing assignment (essay, data gathering, data analysis, data presentation, research paper, interview, reaction/response)  
 Discussion question (data gathering and analysis, reaction/response, interview, scenario/case study)  
 Research problem  
 Article review  
 Presentation analysis  
 Web research  
 Present graph  
 Develop questionnaire  
 Present survey results  
 Develop mind map  
 Develop action plan

### Evaluate

Make judgments based on criteria and standards. (Anderson & Krathwohl, 2001, p.83.)

#### Example Objectives:

**FACTUAL:** Assess consistency among sources.  
**CONCEPTUAL:** Determine relevance of results.  
**PROCEDURAL:** Judge efficiency of sampling techniques.  
**METACOGNITIVE:** Evaluate one's progress.

#### Key Words

|              |            |
|--------------|------------|
| Appraise     | Grade      |
| Argue        | Infer      |
| Assess       | Judge      |
| Challenge    | Justify    |
| Choose       | Persuade   |
| Critique     | Prioritize |
| Debate       | Prove      |
| Defend       | Rate       |
| Determine    | Rank       |
| Dispute      | Recommend  |
| Document     | Rule on    |
| Editorialize | Select     |
| Estimate     | Test       |
| Evaluate     | Validate   |

#### Possible Assignments

Exam (case study/scenario, essay)  
 Discussion (debate, reaction/response, scenario/case study)  
 Reaction/Response (individual writing)  
 Lab assignment  
 Case study  
 Writing assignment (essay, paper, research paper, article review)  
 Presentation  
 Course project  
 Panel discussion/debate  
 Editorial  
 Self-evaluation  
 Critique  
 Peer review  
 Conduct mock trial  
 Write recommendation  
 Write editorial

### Create

Put elements together to form a coherent or functional whole. (Anderson & Krathwohl, 2001, p.84.)

#### Example Objectives:

**FACTUAL:** Generate a log of daily activities.  
**CONCEPTUAL:** Build a team of experts.  
**PROCEDURAL:** Design efficient project workflow.  
**METACOGNITIVE:** Create a learning portfolio.

#### Key Words

|             |            |
|-------------|------------|
| Adapt       | Invent     |
| Alter       | Modify     |
| Build       | Plan       |
| Combine     | Predict    |
| Compose     | Produce    |
| Construct   | Propose    |
| Create      | Reframe    |
| Design      | Reorganize |
| Develop     | Revise     |
| Devise      | Rewrite    |
| Formulate   | Simplify   |
| Generate    | Speculate  |
| Hypothesize | Theorize   |
| Improve     | Transform  |
| Imagine     | Visualize  |
| Integrate   | Write      |

#### Possible Assignments

Discussion (reaction/response, case study/scenario)  
 Reaction/response (individual writing/creation)  
 Lab assignment  
 Case study  
 Writing assignment  
 Research paper  
 Presentation  
 Course project  
 Group project  
 Compose a song  
 Design a solution  
 Portfolio project  
 Video/audio project  
 Advertisement  
 Write a story