

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