

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.celt.iastate.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