

# Cognitive learning and objectives

## (Bloom's Taxonomy with sample verbs and strategies)



LEVEL	DEFINING QUESTION	VERBS FOR OBJECTIVES	INSTRUCTIONAL STRATEGIES
Creating	Can student create a new product or point of view?	assemble, construct, create, design, develop, formulate, write	model design/develop, reflection, collaboration
Evaluating	Can student justify a stand or decision?	appraise, argue, defend, judge, select, support, value	troubleshooting, problem-solving, role play, debate
Analyzing	Can student distinguish between the different parts?	appraise, compare, contrast, differentiate, discriminate, examine, experiment, question	experiment/inquire, data/situ analysis, simulation, de-construction activities
Applying	Can student use information in a new way?	choose, demonstrate, dramatize, illustrate, interpret, schedule, solve, use, write	hands-on/generative, problem-/ case-based, team work, role play
Understanding	Can student explain ideas or concepts?	classify, describe, discuss, explain, identify, recognize, report, select	concept mapping, inquiry, Q/A, review & identify, collaboration, debate
Remembering	Can student remember or recall the information?	define, duplicate, list, recall, memorize, repeat, reproduce	lecture, didactic, reading, notetaking, worksheet

## Writing sound learning objectives

- What is a “learning objective”?
  - A statement that tells learners what they **should be able to DO, in measurable terms, AFTER instruction... NOT during....**
- How should a learning objective be written?
  - the **terminal behavior** or actions that will demonstrate learning
  - the **condition** of demonstration of that action
  - the **standard** or criterion for the demonstrated learning

**STEP 1: Instructional Goal:** Instruct students in the use of science laboratory equipment (microscope)

No, not clear what is being measured

**STEP 2: Objectives** - Understand the uses of microscopes. (**A sound objective?**)

*Better Objective: To **describe** the **8 major parts** of a microscope **in the science laboratory**.*

*Better Objective: **Focus the microscope**, at **3 different strengths**, on **a cell slide** with **enough clarity to draw the features of a cell**.*

## Linking instruction, learning, assessment and instructional strategies

Instructional goals	Learning objectives	Assessment
<i>Instruct students in the use of science laboratory equipment (microscope).</i>	To describe the 8 major parts of a microscope.	Label a diagram of the microscope. Write a brief description of the function of each part.
	Focus the microscope, at 3 different strengths, on a cell slide with enough clarity to draw the features of a cell.	Given 4 different slides, examine them under the microscope at 3 focus strengths and draw what is seen.

### Instructional strategies:

**Presentation** showing parts of microscope/describing functions. Learners in pairs **explore/draw/ label/describe** microscopes; **Demonstration** on how to load slides, focus, adjust lighting, etc. **Hands-on** activity with students focusing on different slides, **drawing what is seen** and comparing with exemplar diagram of each slide and peers' drawings