Making Mastery Accessible:
A Guide to Defining Learning Outcomes

One of the most foundational characteristics of mastery-based learning is its emphasis on learning outcomes. By the end of this learning sequence, what will students be able to do to demonstrate their skills and knowledge? How will the tasks they tackle not only evidence their ability to apply their learning, but also serve as opportunities for the development of important college and career readiness skills and dispositions?

**Learning outcomes are statements of achievement that articulate what your students will know and be able to do as a result of a unit or module of study.** Learning outcome statements set the vision for the learner, and make clear the meaningful and important connections between content, skills, and work products.

Learning outcomes emphasize competencies that include the application and creation of knowledge, along with the development of important skills and dispositions.¹

WHERE DO WE START?

There are several key pre-requisite steps that should be taken before you begin the work of crafting learning outcome statements. The infographic on the following page offers a roadmap for building each essential component of a mastery learning system. The infographic provides a recommended sequence of activities that takes into consideration which components of a mastery learning system are dependent upon others.

In the case of learning outcome statements, there are three key elements you will need to make sure are in place before you begin the development process:

1. **Academic competencies**: what are the competencies (or skill sets) you will expect learners to build and demonstrate as part of a learning outcome — across performance levels and subject areas?

2. **Scope & sequence**: what specific content will learners engage with as part of the course or learning progression they are working on?

3. **Approach to performance tasks**: how will performance-based assessments be integrated into your overall assessment strategy? What types of performance-based assessments will you expect learners to engage in, and how will they connect to your competencies and content focus areas?

The creation of learning outcome statements will coincide with the development of your instructional units, and therefore will be an ongoing process.

As shown in the graphic below, learning outcomes flow from competencies. For example, a unit of study focused on the competency “writing evidence-based arguments” will have a learning outcome that involves students constructing an evidence-based argument. The pathway toward achieving this learning outcome will involve a specific learning progression that is made up of a series of learning goals/objectives.

*Designer’s Tip:* Integrate the learning outcome statement as an essential element in the templates your teachers use for planning and instruction, as well as in student-facing materials that help orient students to an upcoming task.
Relationship between Competencies, Learning Outcomes, Learning Progressions, Learning Goals/Objectives, and Learning Targets
HOW DO WE WRITE LEARNING OUTCOME STATEMENTS?

In a mastery-based teaching and learning model, a learning outcome statement should define three specific, measurable, and observable elements:

- **The content frame**: the big ideas, disciplinary concepts, or understandings that will be applied
- **The skill(s)**: the specific skill(s) that will be demonstrated and applied
- **The task / work product**: the result that will come from the application of content and skills

Let’s take a look at a few examples and non-examples. As you review each example and non-example, refer back to the list above and determine whether or not you can identify each of the three essential elements of a learning outcome statement in the examples provided.

**EXAMPLES:**

“Students will create a storyboard and script that explains a natural phenomena or structure, in a scale that is normally impossible.”

“Students will apply their knowledge of style in writing and related concepts of tone, diction, and voice to develop an opinion editorial and submit for publication.”

**NON-EXAMPLES:**

“Students will write an engaging hook in their introduction.”

“Students will explain the difference between physical and chemical reactions.”

“Students will understand the process of solving two-step equations.”
Annotated Examples: Why So, Why Not?

Let’s deconstruct these examples and non-examples to make sure we’re clear on what makes a strong learning outcome statement.

In the above two examples, we see that each statement has all three essential elements of a learning outcome statement. In the first example, the content frame is open-ended — perhaps students will choose from among a set of phenomena or structures that have already been studied, or engage in a new investigation as part of the task — and the competency directly relates to a Next Generation Science Standard cross-cutting skill involving the ability to apply knowledge of scale, proportion, and quantity to support analyses of functions or processes (See Next Generation Science Standards, Appendix G - Crosscutting Concepts, pg. 6).

In the second example, the content frame is focused on learning the elements of style in writing (tone, diction, voice), while the competency and the work product — e.g. the writing of an informational text — are one in the same. Note that
the learning outcome is particularly compelling in that the learner will have the opportunity to submit the work for publication. This aspect of the learning outcome connects beautifully to our definition of learning outcomes as helping students develop “important skills and dispositions” because in order to achieve the learning outcome, learners will have to engage in a “real-world” process that involves an authentic audience.

Finally, notice the action verbs in each learning outcome statement that describe what the learner will be able to do — both correspond to high levels on Bloom’s Taxonomy (application, creation/synthesis).

![Bloom's Taxonomy Image](Image)

_BLOOM’S TAXONOMY_

- **Knowledge**: To know specific facts, terms, concepts, principles or theories.
- **Comprehension**: To understand, interpret, compare, contrast or explain.
- **Application**: To apply knowledge to new situations, to solve problems.
- **Analysis**: To identify the organization structure; to pull meaning from parts, relations and organizing principles.
- **Synthesis**: To create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme.
- **Evaluation**: To judge the quality of something based on its adequacy, value, logic or use.

Graphic sourced from [University of Alaska Anchorage website](https://www.uaa.alaska.edu)
Designer’s Tip: Use Bloom’s taxonomy as a guide to help you refine the language you’ll use to describe the action learners will take to achieve the outcome. Click here for a helpful table that provides a comprehensive list of action verbs for each level of Bloom’s taxonomy (http://goo.gl/JukMKV).

Non-examples:

“Students will write an engaging hook in their introduction.”
“Students will explain the difference between physical and chemical reactions.”
“Students will understand the process of solving two-step equations.”

What do each of the above statements have in common? Indeed, they all describe discrete or “granular” in nature — defining a learning objective or aim rather than a learning outcome. In the first statement, no content frame is offered, and while a writing skill is referenced — “write an engaging hook” — we do not have a complete reference to a competency that will be demonstrated through a work product.

Both the second and third examples offer a specific content frame, but again lack a broader competency or work product. Notice also the lack of action verbs that describe higher levels of understanding on Bloom’s taxonomy. Instead, we see “explain” and “understand.”

How could you expand upon and re-write these statements as learning outcome statements?
ADDITIONAL RESOURCES FOR LEARNING

The links below provide additional resources for continued learning:


Loyola Marymount University: http://academics.lmu.edu/spee/officeofassessment/assessmentresources/writingstudentlearningoutcomes/


University of Oregon: http://sa-assessment.uoregon.edu/ResourcesandTraining/WritingStudentLearningOutcomes.aspx