

Learning Progressions

 A learning progression is a planning and communication framework that identifies the building block ideas and skills required to develop understanding of a core concept. It represents a departure from the traditional planning strategies of building around curriculum chapters, or working from a list of topics which may or may not be meaningfully connected. A learning progression begins with a **big idea**, breaks the big idea into building blocks called **learning targets**, and identifies **success criteria** representing what a learner would need to do to demonstrate understanding of the learning targets.

**Big Ideas:** A big idea is a core concept or understanding of a course or discipline. Generally, this is a concept that is sufficiently large to anchor a unit or curriculum chapter, though some big ideas may span a course or courses. A big idea always requires several sub-ideas and/or skills to develop full understanding. The statement of a big idea in a learning progression is the understanding to be gained, rather than simply the topic covered or an activity in which the learner will engage. For example, “derivatives” is not a sufficient statement of a big idea, while “the derivative uses the idea that a function is approximately linear on a sufficiently narrow interval to determine the rate of change of a function at a point” may be a better statement of the important understanding to be gained through a unit. An instructor may choose to withhold the complete statement of a big idea from students, instead substituting a question to be answered through the unit (“how can we describe and quantify the change in any function, even one that is non-linear?”).

**Learning Targets:** Learning targets are the building blocks required in order to develop complete and robust understanding of the big idea. These may be sub-ideas, or component skills. The number of learning targets in progressions will vary, though very few learning targets in a progression may suggest that a big idea is not big enough, while many learning targets might suggest that a big idea is too big. A learning target generally represents a lesson-sized unit, often about the size of a chapter subsection, but a lesson is not necessarily a single day’s worth of content; some lessons may span two or three days.

As with big ideas, learning targets are statements of understanding, not chapter subsection headings or topics and are independent of the learner. For example, “graphing derivatives” is not a well-stated learning target, while “the behavior of a function determines the behavior of the derivative. In particular, intervals of increase and decrease of a function correspond to positive and negative intervals of the derivative, respectively, and concavity of the function corresponds to increase or decrease of the derivative.” indicates more clearly what learners will understand. A thoughtful consideration of the important learning targets required to build to a big idea, especially in collaboration with colleagues, can be helpful in unburdening the curriculum and identifying the critical components to be learned. Sharing learning targets with students can help to guide students’ learning, though instructors may choose to phrase the targets as questions when sharing them.

**Success Criteria:** Each learning target in a learning progression has at least one corresponding success criterion. These success criteria indicate what learners should be able to do to demonstrate understanding of the learning target, and can help instructors and learners know what to look for to indicate mastery. For example, “Connect graphical and symbolic representations of the limit definition of derivative” indicates what students should be able to do to demonstrate partial understanding of the aforementioned learning target. Success criteria also help to define the items to be included in formative and summative assessments, as collectively they provide all of the skills and understandings learners should be able to demonstrate to show mastery of the course content. Engaging students with success criteria can provide a framework for student self-assessment.