CREATING & USING LEARNING TARGETS & PERFORMANCE SCALES

HOW TEACHERS MAKE BETTER INSTRUCTIONAL DECISIONS

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Essentials for Achieving Rigor SERIES

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Creating & Using Learning Targets & Performance Scales: How Teachers Make Better Instructional Decisions

Organizing for Learning: Classroom Techniques to Help Students Interact Within Small Groups

Dedication

I dedicate this work to my first educators, Mom and Dad, and to Gary, Erica, and Will, who continue to teach and inspire me daily.

—Carla Moore

I dedicate this work to my children, Bradley and Alyson, whose academic peaks and valleys inspired me to be a better educator.

—Libby H. Garst

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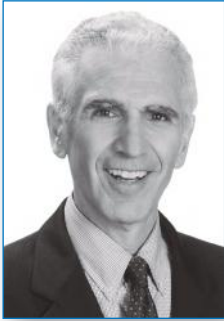
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Introduction

This guide, *Creating & Using Learning Targets & Performance Scales: How Teachers Make Better Instructional Decisions,* is intended as a resource for improving a specific aspect of instructional practice: creating and using learning targets and performance scales.

Your motivation to incorporate this strategy into your instructional tool-box may have come from a personal desire to improve your instructional practice through the implementation of a research-based set of strategies (such as those found in the Marzano instructional framework) or a desire to increase the rigor of the instructional strategies you implement in your class-room so that students meet the expectations of demanding standards such as the Common Core State Standards, Next Generation Science Standards, C3 Framework for Social Studies State Standards, or state standards based on or influenced by College and Career Readiness Anchor Standards.

This guide will help teachers of all grade levels and subjects improve their performance of a specific instructional strategy: creating and using learning targets and performance scales. Narrowing your focus on a specific skill, such as creating and using learning targets and performance scales, permits you to concentrate on the nuances of this instructional strategy to deliberately improve it. This allows you to intentionally plan, implement, monitor, adapt, and reflect on this single element of your instructional practice. A person seeking to become an expert displays distinctive behaviors, as explained by Marzano and Toth (2013):

- breaks down the specific skills required to be an expert

- focuses on improving those particular critical skill chunks (as opposed to easy tasks) during practice or day-to-day activities

- receives immediate, specific, and actionable feedback, particularly from a more experienced coach

- continually practices each critical skill at more challenging levels with the intention of mastering it, giving far less time to skills already mastered

This series of guides will support each of the previously listed behaviors, with a focus on breaking down the specific skills required to be an expert and giving day-to-day practical suggestions to enhance these skills.

Building on the Marzano Instructional Model

This series is based on the Marzano instructional framework, which is grounded in research and provides educators with the tools they need to connect instructional practice to student achievement. The series uses key terms that are specific to the Marzano model of instruction. See Table 1, Glossary of Key Terms.

Table 1: Glossary of Key Terms

Term	Definition
CCSS	Common Core State Standards is the official name of the standards documents developed by the Common Core State Standards Initiative (CCSSI), the goal of which is to prepare students in the United States for college and career.
CCR	College and Career Readiness Anchor Standards are broad statements that incorporate individual standards for various grade levels and specific content areas.
Desired result	The intended result for the student(s) due to the implementation of a specific strategy.
Monitoring	The act of checking for evidence of the desired result of a specific strategy while the strategy is being implemented.
Instructional strategy	A category of techniques used for classroom instruction that has been proven to have a high probability of enhancing student achievement.
Instructional technique	The method used to teach and deepen understanding of knowledge and skills.
Content	The knowledge and skills necessary for students to demonstrate standards.
Scaffolding	A purposeful progression of support that targets cognitive complexity and student autonomy to reach rigor.
Extending	Activities that move students who have already demonstrated the desired result to a higher level of understanding.

The educational pendulum swings widely from decade to decade. Educators move back and forth between prescriptive checklists and step-by-step

lesson plans to approaches that encourage instructional autonomy with minimal regard for the science of teaching and need for accountability. Two practices are often missing in both of these approaches to defining effective instruction: 1) specific statements of desired results and 2) solid research-based connections. The Marzano instructional framework provides a comprehensive system that details what is required from teachers to develop their craft using research-based instructional strategies. Launching from this solid instructional foundation, teachers will then be prepared to merge that science with their own unique, yet effective, instructional style, which is the art of teaching.

Creating & Using Learning Targets and Performance Scales: How Teachers Make Better Instructional Decisions will help you grow into an innovative and highly skilled teacher who is able to implement, scaffold, and extend instruction to meet a range of student needs.

Essentials for Achieving Rigor

This series of guides details essential classroom strategies to support the complex shifts in teaching that are necessary for an environment where academic rigor is a requirement for all students. The instructional strategies presented in this series are essential to effectively teach the CCSS, the Next Generation Science Standards, or standards designated by your school district or state. They require a deeper understanding of content, more effective use of strategies, and greater frequency of implementation for your students to demonstrate the knowledge and skills required by rigorous standards. This series includes instructional techniques appropriate for all grade levels and content areas. The examples contained within are grade-level specific and should serve as models and launching points for application in your own classroom.

Your skillful implementation of these strategies is essential to your students' mastery of the CCSS or other rigorous standards, no matter the grade level or subject you are teaching. Other instructional strategies covered in the Essentials for Achieving Rigor series, such as examining reasoning and engaging students in cognitively complex tasks, exemplify the cognitive complexity needed to meet rigorous standards. Taken as a package, these strategies may at first glance seem quite daunting. For this reason, the series focuses on just one strategy in each guide.

Creating and Using Learning Targets and Performance Scales

If you have read and used other guides in the Essentials for Achieving Rigor series, you are accustomed to immediately finding a set of techniques to help you become more proficient in using a specific instructional strategy. In this guide, however, the content is organized somewhat differently.

In the other guides in the series, the techniques to help you teach the specific content of your grade or discipline are featured front and center, based on the assumption that you already have the content of your grade or discipline well in hand. However, absent the learning targets and performance scales described in this guide, you and your students may well lack a clear direction for learning.

Your hard work, as well as the efforts of your students, can easily become time expended on the wrong content. To effectively implement this strategy, you must first acquire the skills and knowledge needed to *create* learning targets and performance scales. Once the creation process is mastered, you can readily *implement* the targets and scales for any content at any grade level.

To show you how to both create and implement learning targets and performance scales, this guide is divided into two parts. Part I introduces you to the knowledge and skills needed to create learning targets and performance scales. You will learn a step-by-step process for creating your own targets and scales using the following steps: 1) unpack standards to identify learning targets, 2) use a taxonomy to identify levels of cognitive complexity required by the standards, and 3) organize targets into a scale that describes levels of performance. Once you have acquired the necessary knowledge and skills to create your own targets and scales, you will be shown how to use them in your classroom in Part II. The second part of the guide introduces four techniques to help you effectively implement learning targets and performance scales: 1) routines for using targets and scales, 2) using teacher-created targets and scales, 3) using student-friendly scales, and 4) using student-generated scales.

PART I

CREATING LEARNING TARGETS AND PERFORMANCE SCALES

Learning targets and performance scales are tools that can help you become more efficient and effective in designing and delivering instruction. These tools will help both you and your students focus on the progression of instruction through lessons and units. In the beginning, the process may seem cumbersome, but like any type of procedural knowledge, practice will soon produce fluency.

The creation of learning targets and performance scales begins with understanding how these tools can help you delineate and communicate the essential declarative and procedural knowledge you want students to master. You will encounter a variety of terms related to the creation of targets and

scales as you read. They are defined and explained in Table 2. At first glance, the terms may seem confusing. However, as you learn the various steps involved in creating targets and scales in Part I, you will soon acquire the deeper understandings you need to move forward into implementation.

Table 2: Glossary of Terms Related to Creation of Learning Targets and Performance Scales

Term	Definition
Procedural knowledge	Skills or processes that students will be able to perform that demonstrate understanding of the content being addressed.
Declarative knowledge	Informational knowledge that students will understand in regard to the content being addressed.
Basic processes	Fundamental practices or competencies that supply the experiences necessary to attain an ability or skill.
Academic standard	A statement generated at the national, state, or local level that designates the approved educational benchmarks and conveys what students are expected to learn at a specified grade level and content area.
Learning goal	The educational objective that describes what students will understand and be able to perform in regard to the content being addressed. An effective learning goal is composed of clearly stated *learning targets* that demonstrate attainment and mastery performance of the academic standard.
Cognitively complex targets	Learning targets that contain the level of processing or cognitive complexity beyond the requirements of the academic standard.
Foundational targets	Learning targets that contain essential prerequisites, knowledge, and basic processes not explicitly stated in an academic standard, but necessary to construct the initial understandings required to reach the learning goal target. The levels of thinking required by foundational targets are below the levels of processing or cognitive complexity required by the standard and learning goal targets.
Learning goal targets	Learning targets at the same level of cognitive complexity as the academic standard that identify the skills required to demonstrate mastery of the content.
Learning targets	Generic targets made up of short descriptive phrases typically bulleted or outlined in a performance scale that detail the knowledge and skills students must understand and be able to perform to demonstrate understanding of an academic standard.
Performance scale	A continuum that articulates distinct levels of knowledge and skills relative to a specific standard.

The information contained in the various types of targets in Table 2 is derived from the essential knowledge, skills, and processes embedded in standards. Once you have identified the various learning targets that emerge as you unpack a standard, you will be able to create a performance scale.

A performance scale organizes the various types of targets on a continuum that ranges from simpler to more complex thinking. A well-designed scale, based on the identified targets, functions as a communication tool between you and your students as it outlines the progression of learning toward the learning goal. Performance scales are composed of individual learning targets that work together and gradually build toward mastery of a specific academic standard. As you teach critical content to students, plan to refer to the pertinent aspects of a specific performance scale in both timely and consistent ways. Performance scales provide both you and your students with the incremental steps or expectations toward the mastery of the standard.

Creating Learning Targets

Learning targets provide a focus for planning and enable you to work more efficiently. These targets not only serve as communication tools that set forth the criteria for student success in each lesson but also function as feedback tools that provide information to you and your students about their performance. Learning targets drive what is taught, to include all activities, assignments, and assessments that occur during the course of lessons or units. The benefits of learning targets extend beyond the classroom for teachers as they facilitate communication between colleagues, coaches, and school leaders and provide a focus for their collaborative work in professional learning communities.

For students, learning targets provide an accurate guide to what they need to learn on a day-to-day basis. Learning targets establish the clear criteria for what the students need to demonstrate to successfully meet the expectations for each lesson and ultimately attain the academic standard. When students grasp their learning targets, they often become empowered to take ownership and responsibility for future learning.

Learning targets compel all stakeholders to be aligned across similar grade levels and subject matter, and they should be articulated with colleagues

above and below the stakeholders. When colleagues are working toward the same learning targets, the goal of supporting students and helping them meet the established learning expectations becomes easier to achieve. Learning targets help focus conversations between the teacher and the students, requiring everyone to concentrate on what he or she is supposed to learn, not just on the completion of an activity or assignment. Learning targets also benefit parents and other family members by keeping them informed of the expectations for their students.

After reading about these various benefits of learning targets, you might conclude that once you have learned how to create them, you will be ready to plan lessons and activities for tomorrow. However, keep in mind as you gain background knowledge and skills for creating learning targets in the following section that the creation of learning targets is not your end product. Learning targets are designed in the service of creating performance scales.

How to Effectively Create Learning Targets

The following section describes how to effectively create learning targets and is divided into two parts: 1) background knowledge you need to create learning targets and 2) a step-by-step tutorial for creating those targets.

Background Knowledge

In anticipation of learning how to create effective learning targets, you will need to thoroughly understand two bodies of information: 1) the differences between the two types of knowledge in the standards and 2) the critical attributes of three types of learning targets. This background knowledge will provide you with the conceptual understanding needed to create learning targets.

Declarative and Procedural Knowledge

Declarative knowledge will usually be situated in the *nouns* of a standard. The nouns represent information, such as vocabulary terms, facts, time sequences, generalizations, or principles, that are essential for students to build upon as they attain more complex skills. For example, the CCSS ELA standard RL 7.6 asks students to *analyze how an author develops characters and contrasts the point of view of different characters or narrators in a text*. A teacher might ask, "What do I have to teach my students so they are able to analyze a text?" Before students can analyze character development, they must understand

what the terms *point of view, characters,* and *narrators* mean. Building declarative knowledge lays a foundation for more complex content. Students will often need multiple exposures to the concepts through varied activities that allow them to systematically review their initial understanding of content and deepen that knowledge. This declarative knowledge must be developed before students can gain the fluency or the increased level of controlled processing necessary to move on to the procedural knowledge, which in the case of the previously mentioned standard is the process of text analysis.

Procedural knowledge involves skills, strategies, and processes. The indicators of procedural knowledge encompassed in state and national standards are usually situated in the verbs. In the previous example, the verbs *analyze* and *contrast* provide clues for how to develop learning targets. Teaching procedural knowledge requires modeling the skill, guided practice, feedback and correction of errors or misunderstandings, and various types of practice until students have developed the automaticity necessary to independently apply the procedural knowledge in varied contexts.

Three Types of Learning Targets

There are three types of learning targets: 1) learning goal targets, 2) foundational targets, and 3) cognitively complex targets. In the following sections, they are defined in detail.

Learning Goal Targets. Learning goal targets are statements of the knowledge and skills students need to demonstrate mastery of a standard. They are derived directly from state or national academic standards and identify what students should know and be able to do by the end of a grade or course. Unpacking individual standards will provide the information needed to create daily or weekly learning targets that include the content focus, cognitive level of thinking, and precise language necessary to delineate learning goal targets. Remember that learning goal targets require the same level of cognitive complexity as the standard and often require a series of lessons to accomplish. To determine a logical learning progression, first identify what the standard is asking students to know (declarative knowledge) and demonstrate (procedural knowledge) to master the standard.

Foundational Targets. Foundational targets consist of knowledge and basic processes that build to the cognitive level of the academic standard. They constitute the prerequisites that students need to master to ultimately

achieve the learning goal targets. There are two types of foundational targets: 1) those that identify declarative knowledge and 2) those that identify procedural knowledge.

Foundational Targets for Declarative Knowledge. Foundational targets for declarative knowledge identify the academic vocabulary that is essential for learning the standard. To identify the essential academic vocabulary to be targeted, ask the following questions:

- Do students need to know the word or term to demonstrate an understanding of the standard?

- Did students learn this word or term in a previous grade or class?

If the answer to the first question is yes, the term should be considered a potential vocabulary word to be targeted. However, if the answer to the second question is also yes, unless the term is being used in a different capacity from how it was used in previous grades or classes, it should not be a target. The term might need to be reviewed and discussed at some point, but it is not considered new knowledge and therefore should not be considered a foundational target.

Foundational Targets for Procedural Knowledge. Foundational targets also include any basic skills or processes students must perform to attain the learning goal target. These are the processes or skills that provide the underpinning for future targets and must be achieved before students can be successful with the current learning goal target. Ask the following questions to identify the essential skills or processes that need to be targeted:

- What do students need to be able to do before they can meet the learning goal target?

- Did students learn this skill or process in a previous grade or class?

After answering the first question and listing the foundational skills and processes required, consider the answer to the second question. Just as with the vocabulary, if the answer to the second question is yes, then students may need a brief review of previous skills and processes. However, do not consider these prerequisite skills to be foundational targets. Unless the skill is being presented or used in a different capacity, it is not considered new. Only new

skills required to build toward the cognitive complexity of the learning goal target should be categorized as foundational targets.

Cognitively Complex Targets. These targets are created to help students extend and deepen the knowledge and skills of the standard. The expectations in these targets are more rigorous than the learning goal targets in a standard. This category of learning targets requires deeper thinking than the standard requires and expects that students will think about the same content in more complex ways. In other words, cognitively complex targets ask students to use the knowledge and skills of the standard to extend their thinking and make applications beyond what is set forth in the standard.

Creating Learning Targets

You are no doubt eager to begin creating learning targets for your students. The following tutorial is divided into two parts: 1) organizational tasks and decisions that must be made in advance of the actual hands-on work of creating the targets and 2) a step-by-step process that will enable you to create a learning target.

Organizational Tasks and Decisions

There are several organizational tasks and decisions that need to be made in advance of creating learning targets. These activities can take place either at the district office, in school teams, or in professional learning communities and include the following: 1) identifying the essential standards for grade levels or content specialties, 2) grouping these standards into units to be taught over a school year, 3) agreeing on the intent or embedded purpose of each standard, and 4) clarifying for all stakeholders the scope of the standards relative to how they build on previous learning and ultimately prepare students for academic success in subsequent grades or courses. Once these organizational activities are completed, you and your colleagues will be ready to create learning targets.

A Step-by-Step Process for Creating Learning Targets

There are four steps in the process of creating learning targets: 1) identify the declarative and procedural knowledge of the standard, 2) chunk the standard, 3) unpack the foundational targets, and 4) create cognitively complex targets.

Step 1: Identify the Declarative and Procedural Knowledge in a Standard. The first step in the creation of learning targets is to identify the declarative and procedural knowledge of the standard. In the typical standard, the procedural knowledge is found in the verbs, while the declarative knowledge is found in the nouns. Three examples (Figures A, B, and C)—one from each grade span (K–5, 6–8, and 9–12)—illustrate this step. Carefully work your way through the three examples, noting that the verbs (procedural knowledge) are circled and the nouns (declarative knowledge) are underlined. When you are working with a selected standard from your grade level or discipline, circle the verbs and underline the nouns. Although these examples may not illustrate the specific grade level or content you teach, the process is identical for any subject or grade level. Figure A displays an elementary example of identifying declarative and procedural knowledge.

Figure A: Elementary Example of Identifying Declarative and Procedural Knowledge

Elementary – English Language Arts   Grade: Kindergarten

(CCSS.ELA-Literacy.RL.K.3): With prompting and support, (identify) characters, settings, and major events in a story.

(CCSS.ELA-Literacy.RL.K.1): With prompting and support, (ask) and (answer) questions about key details in a text.

Figure B shows a middle school math example in which the verbs (procedural knowledge) are circled and the nouns (declarative knowledge) are underlined in two middle school standards.

Figure B: Middle School Example of Identifying Declarative and Procedural Knowledge

Middle School – Mathematics   Grade: Eighth

(CCSS.Math.8.NS.A.1): Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually and convert a decimal expansion which repeats eventually into a rational number.

(CCSS.Math.8.NS.A.2): Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).

Figure C is a high school example identifying declarative and procedural knowledge from several high school biology standards.

Figure C: High School Example of Identifying Declarative and Procedural Knowledge

High School – Biology   Grades: Ninth–Twelfth

(CPALMS: Life Science SC.912.L.14.2): Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport).

(CPALMS: Life Science SC.912.L.14.3): Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic cells and eukaryotic cells.

(CPALMS: Life Science SC.912.L.14.4): Compare and contrast structure and function of various types of microscopes.

Step 2: Chunk the Standard. Chunking a standard means breaking it apart into chunks called learning goal targets. Chunking is not difficult, but the process requires a careful reading of the action verbs and a word-by-word

conversion of the sentences and paragraphs in the standards into bulleted learning goal targets.

Figure D illustrates how the kindergarten English language arts standards have been transformed into five individual learning goal targets. The circled verbs from the examples in step 1 appear in bold type wherever they occur. Notice how the single standard containing a series of nouns following a verb has been unpacked into several learning targets. Note the phrase that precedes each of the learning goal targets: *students will be able to.*

Figure D: Learning Goal Targets for Kindergarten English Language Arts

Elementary – English Language Arts   Grade: Kindergarten

(CCSS.ELA-Literacy.RL.K.3): With prompting and support, **identify** characters, settings, and major events in a story.

(CCSS.Math.8.NS.A.2): With prompting and support, **ask** and **answer** questions about key details in a text.

**Learning Goal Targets
Students will be able to:**

- **Identify** characters in a story
- **Identify** settings in a story
- **Identify** major events in a story
- **Ask** questions about key details in a text
- **Answer** questions about key details in a text

Figure E shows how the essential knowledge and skills of two middle school math standards have been chunked into seven individual learning goal targets. The process of creating learning goal targets, whether executed by you individually or with your colleagues, will help you focus your lesson planning and assessments more directly and give students more discrete learning targets during lessons and units.

Figure E: Learning Goal Targets for Middle School Mathematics

Middle School – Mathematics   Grade: Eighth

(CCSS.Math.8.NS.A.1): Know that numbers that are not rational are called irrational. **Understand** informally that every number has a decimal expansion; for rational numbers **show** that the decimal expansion **repeats** eventually, and **convert** a decimal expansion which **repeats** eventually into a rational number.

(CCSS.Math.8.NS.A.2): Use rational approximations of irrational numbers to **compare** the size of irrational numbers, **locate** them approximately on a number line diagram, and **estimate** the value of expressions (e.g., π^2).

Learning Goal Targets
Students will be able to:

- **Know** that numbers that are not rational are called irrational
- **Understand** informally that every number has a decimal expansion
- **Show** that the decimal expansion repeats eventually for rational numbers
- **Convert** a decimal expansion which repeats eventually into a rational number
- **Use** rational approximations of irrational numbers to compare the size of irrational numbers
- **Locate** irrational numbers approximately on a number line diagram
- **Estimate** the value of expressions (e.g., π^2)

Figure F illustrates how three high school biology standards have been chunked into five learning goal targets.

Figure F: Learning Goal Targets for High School Biology

High School – Biology   Grades: Ninth–Twelfth

(CPALMS: Life Science SC.912.L.14.2): Relate structure to function for the components of plant and animal cells. **Explain** the role of cell membranes as a highly selective barrier (passive and active transport).

(CPALMS: Life Science SC.912.L.14.3): Compare and **contrast** the general structures of plant and animal cells. **Compare** and **contrast** the general structures of prokaryotic and eukaryotic cells.

(CPALMS: Life Science SC.912.L.14.4): Compare and **contrast** structure and function of various types of microscopes.

Learning Goal Targets
Students will be able to:

- **Relate** structure to function for the components of plant and animal cells
- **Explain** the role of cell membranes as a highly selective barrier (passive and active transport)
- **Compare** and **contrast** the general structures of plant and animal cells
- **Compare** and **contrast** the general structures of prokaryotic and eukaryotic cells
- **Compare** and **contrast** structure and function of various types of microscopes