



A Guide for Unpacking the New York State Next Generation Mathematics Learning Standards

The *Unpacking Document* provides educators with a template they can utilize to have collaborative conversations about what they want their students to *know* and *be able to do*. The *Unpacking Document* is not a lesson plan, but rather an analysis of a grade-level standard. Developing a collective clarity around the intent and rigor of the standard(s) will aid educators in designing their curriculum. Educators may choose to unpack all standards for a specific grade level or they may elect to also unpack the standards in adjacent grade(s), providing educators the opportunity to explore and consider the vertical progressions of mathematical concepts so that curricular decisions are not made in isolation. The unpacking process should include teachers from other departments, such as special education, bilingual, and other content areas (e.g., science, art, etc.), as they can assist in offering suggestions for further support and inter-disciplinary connections.

The *Unpacking Document* is arranged in three sections, which include the following five integral steps of the unpacking process: (1) Analyzing How the Standard Relates to its Domain and Cluster; (2) Identifying Learning Targets; (3) Identifying Foundational Understanding; (4) Reflecting on the Aspects of Rigor and the Standards for Mathematical Practice; and (5) Designing Examples to Support Current Instruction of the Content Standard and the Attainment of the Learning Targets.

New York State Next Generation Mathematics Learning Standards Unpacking Document (DRAFT)							
Section I	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; border: 1px solid black;">GRADE</td> <td style="border: 1px solid black;">DOMAIN:</td> </tr> <tr> <td colspan="2" style="border: 1px solid black;">CLUSTER:</td> </tr> <tr> <td colspan="2" style="border: 1px solid black;">Grade Level Standard:</td> </tr> </table>	GRADE	DOMAIN:	CLUSTER:		Grade Level Standard:	
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Section II	PERFORMANCE/KNOWLEDGE TARGETS (measurable and observable)						
	ASPECTS OF RIGOR <small>Procedural Conceptual Application</small>						
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; border: 1px solid black; font-weight: bold;">MATHEMATICAL PRACTICES</td> <td style="border: 1px solid black;"> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. </td> </tr> <tr> <td style="border: 1px solid black; font-weight: bold;">FOUNDATIONAL UNDERSTANDING</td> <td style="border: 1px solid black;"></td> </tr> </table>	MATHEMATICAL PRACTICES	<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	FOUNDATIONAL UNDERSTANDING			
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The following pages contain EXAMPLES to support current instruction of the content standard and may be used at the discretion of the teacher and adapted to best serve the needs of the learners in the classroom.							
Section III							

Section I

Step 1: Analyzing How the Standard Relates to its Domain and Cluster

Educators should understand how an individual standard relates to the key ideas and concepts of the individual cluster as well as the other clusters of standards that comprise the domain for that grade level. Educators should also keep in mind that standards from different clusters and domains can be closely related. These standards are identified as “within grade-level connections.” Additionally, educators will want to examine related clusters in adjacent grade levels to assist in developing a solid sense of the progression of skills. Resources for understanding how the grade-level standards relate to one another include, but are not limited to:

- [Progressions Documents for the Common Core Math Standards](#)
- [EngageNY Curriculum Module](#) (and Topic) [Overviews](#) (Introductory material provided in the beginning of each module and its sections)

Note: [The PreK-Grade 5 Math Curriculum Map](#), [Grades 6-8 Math Curriculum Map](#), [Grades 9-12 Math Curriculum Map](#), the [CCLS Checklist for a Story of Units](#), [CCLS Checklist for a Story of Ratios](#), and [CCLS Checklist for Algebra I](#) each provide an at-a-glance view of where each standard is addressed in the EngageNY modules.

- [NYS Next Generation Mathematics Learning Standards Document](#)
- [Achieve the Core Coherence Map](#)

Section II

Step 2: Identifying Learning Targets

Learning targets are brief, concise statements written in student-friendly language that describe what a student can do when demonstrating mastery of the content standard. Attention should be given to the nouns and verbs used in the standard, and both should be reflected in the learning targets. The learning targets for a standard should be observable and measurable. The [Glossary of Verbs Associated with the NYS Next Generation Mathematics Learning Standards](#) contains a list of verbs that appear throughout the Mathematics Standards and are explained in the context in which they are used.

Step 3: Identifying Foundational Understanding

The NYS Next Generation Mathematics Learning Standards were developed with a purposeful sequencing of learning expectations across multiple developmental stages, ages, or grade levels. Identifying foundational understanding provides educators with an excellent insight into the relevance of a standard, its role at a particular level (focus), and how other levels continue to develop this standard (coherence). Pertinent foundational mathematical vocabulary should also be listed in this section. Resources that aid in identifying foundational knowledge include, but are not limited to:

- Coherence links for grade-specific standards found in the [NYS Next Generation Mathematics Learning Standards Document](#)
- Foundational standards and terminology listed in the [EngageNY Module Overviews](#). (Some of the foundational standards listed in the modules may have been revised and should be cross-referenced with the standards document.)
- [Achieve the Core Coherence Map](#)

Step 4: Reflecting on the Aspects of Rigor and the Standards for Mathematical Practice

The New York State Next Generation Mathematics Learning Standards present a balanced approach to mathematics that stresses equally the aspects of rigor: procedural fluency, conceptual understanding, and application. Student learning of a content standard should encompass all three aspects of rigor in a manageable and practical manner.

The Standards for Mathematical Practice are the key principles that support mathematical thinking and practice for our students, as well as the eight “Habits of Mind” that we want to become part of our students’ natural mathematical routines. The Standards for Mathematical Practice also provide guidance for teachers on how to modify their instructional approach, allowing students to gain advanced mathematical understanding through engaging and rigorous learning experiences that can be applied to their everyday lives. Student learning experiences should be intertwined with content and practice, making learning targets more attainable and meaningful. The Standards for Mathematical Practice are further explained in the [New York State Next Generation Mathematics Learning Standards Document](#), starting on page 7.

Section III

Step 5: Designing Examples to Support Current Instruction of the Content Standard and the Attainment of the Learning Targets

Educators should determine key instructional tasks that allow for the development and the mastery of the learning targets outlined in Section II. The standards are designed to encourage flexible learning, learning that is accessible for all. Therefore, these tasks should be representative of the standard, but not exhaustive. The following is a list of questions educators may consider as they begin determining appropriate examples to place in this section:

- What learning experiences will best support and develop mathematical language? What new mathematical language will be introduced?
- What type of learning experiences support the transition from the concrete, to the pictorial, to the abstract for this standard?
- What type of learning experiences highlight multiple representations/solution paths?
- Do the examples provided collectively cover the aspects of rigor?
- Does the example or sample task have multiple entry points that will allow accessibility for all learners?

- Does the example or sample task provide an opportunity for the students to engage in one or more of the Standards for Mathematical Practice?
- Does the task support and develop content by providing a culturally-relevant learning experience?
- Do any of the examples provide/demonstrate connections to other grade-level standards?
- Where does the standard go from here?

The *Unpacking Document* is not intended to be a collection of assessment items, but rather a collection of examples that can be used in conjunction with current teaching practices to help enhance student learning of a standard. Educators are encouraged to create their own examples or to utilize examples from various curricular resources that they best see fit. Unpacking learning standards is an excellent exercise in “reflective” practice and districts are encouraged to continually update and modify these documents to best serve the needs of their learners and mathematical programs.