

CHAPTER 3.

TASKS FOR STUDYING

CALIFORNIA'S COMMON CORE MATHEMATICS STANDARDS

The Overview Task and all five Study Tasks are detailed in the sections that follow. For each task, we provide a brief description, an explanation of the intended outcomes, and directions for facilitating the task in a group or staff setting. Talking Teaching Network schools complete these tasks collaboratively, in some cases as an entire staff and in others during regular meetings of groups of teachers, e.g., grade level teams and departments. Directions are written with these kinds of group or staff sessions in mind and are intended for teachers and administrators who facilitate the sessions. All directions are drawn from the pilot work completed with these tasks at Network school over the past year. All worksheets and handouts referenced in the sections below can be found in the Appendix to this Study Guide. The tasks to be described are as follows:

- Overview Task: Why Is This Happening? The Rationale Behind the Common Core Initiative
- Study Task #1: Browsing the New 2010 Common Core Mathematics Standards
- Study Task #2: Interpreting Common Core Standards for Mathematical Practice
- Study Task #3: Analyzing the Common Core Math Content Standards by Type
- Study Task #4: Analyzing the CC Math Content Standards within Domains and across Grade Levels
- Study Task #5: Coding Common Core Math Content Standards for Implications

Overview Task: Why is this Happening? The Rationale Behind the Common Core (Chapter 2 Jigsaw)

3.0.1. Overview Study Task: Brief Description of the Overview Study Task and its Development

The overview and context of the Common Core State Standards Initiative is an important story for teachers and others to know. In our work over the past twenty plus years, it has been important to provide teachers with detailed explanations and rationales for why they were being asked to make changes or integrate new initiatives. As we began to work directly with teachers in the study of the Common Core Standards it was of paramount importance to first establish the Common Core Standards as an important reform initiative that would have lasting effects for years to come. It was also critical to establish the Common Core in a historical context. The Common Core is not revolutionary, but rather evolutionary. It is the next logical step in the history of standards based reform in the United States. Once told, this story places the study of the new standards in its proper context: the Common Core is not some newly conceived idea, but rather the next best effort to establish world-class standards, informed by and built upon earlier efforts to do the same. Simply diving into the study of the standards themselves would ignore much of what is important for teachers and others in schools to know about the Common Core Standards Initiative. Teachers consistently report the value of knowing the history and context of standards-based reform efforts in the United States, the perspective that story lent to the Common Core initiative, and why it is happening.

3.0.2. Overview Study Task: Intended Outcomes/Understandings of the Overview Study Task

After studying Chapter 2, teachers should have a clear understanding of the history of the standards based reform movement in the United States, the evidence that spurred the National Governors Association (NGA) to act and initiate the development of the Common Core State Standards in the form of states self-reported proficiency levels and their NAEP achievement levels, and how, specifically, the NGA responded to this evidence and drew together a representative group to develop the new Common Core Standards. As a

result, most teachers and administrators view the study of the Common Core in a slightly different light: this is, indeed, the major reform initiative for the foreseeable future and is built upon the prior major reform initiative – NCLB and development of State Standards. The Common Core isn't new, it's "next". It is the next link in the chain that connects over twenty years of efforts to define what students in the United States should know, and be able to do in Mathematics and English Language Arts.

3.0.3. Overview Study Task: Directions for Engaging in the Overview Study Task in Grade Level Teams

- Form Study Groups. Chapter 2 is divided into three sections, therefore teachers should be divided into study groups of three in order to jigsaw the chapter.
- Explain the Purpose of the Overview Task. It is important to provide the context and rationale for the why this is happening. Teachers will appreciate the opportunity to have time to study and learn about the larger issues surrounding the Common Core and why the Common Core makes sense at this point in time. In introducing the Overview Task, you might tell teachers something like:

Too often teachers aren't provided with the rationale for why they are being asked to do certain things. With each major initiative, teachers are required to do something new and/or different. It makes sense that if teachers are being asked to make a change that they are also provided with the sound reasoning why the change is happening. Today we will complete the Overview Task that will provide information about the history of standards-based reform in the U.S., the evidence that demonstrated the limitations of No Child Left Behind and the current state standards, and the response to this evidence in the form of the Common Core State Standards Initiative. Hopefully this will provide the rationale for why the Common Core is important and worth taking the time to study and implement well.

- Assign the Sections of Chapter 2 within Study Groups. Have each group of three teachers divide the three sections of Chapter 2 among themselves (The History, The Evidence, and The Response) so that all sections of the Chapter have one person who will read and study just that section and then be prepared to teach their section to the others in the group.
- Read and Study the Sections of Chapter 2. Allow teachers time to individually read and highlight their assigned section of Chapter 2. They should identify the most important points made in the sections they are responsible for reading so that they can explain the section to the others in their group.
- Discuss each Section of Chapter 2 within Study Groups. Allow study groups time to share what they have read and studied in their sections. Have them share within each study group starting with section 2.1 The History, then 2.2 The Evidence, and then 2.3 The Response. They should focus specifically on what they highlighted as the most important points for the section they read and studied. This will allow each member of each study group to hear the most important points of each section of Chapter 2 in a reasonable amount of time and to piece together the rationale for why the Common Core is happening.
- Share Observations of Chapter 2 Across the Whole Group. Allow teachers to share their observations of Chapter 2. Start with those from each study group that read section 2.1. Prompt teachers to share what they thought was most important and/or interesting in section 2.1. As a result of their reading, studying and discussing they should be prepared to share the most important points that explain section 2.1 to the entire group. Discuss each subsequent section the same way in order until each of the three sections of Chapter 2 have been discussed by the whole group.
- Close Down the Session. Close the session by explaining that the review of Chapter 2 is important in creating the proper context for studying and transitioning to the Common Core. Teachers should have a

firm grasp on the answer to the question, “Why is this happening?” Finally, share that all subsequent study sessions will focus on the actual standards—reading, studying and interpreting them, and that the next study session will focus on browsing the entirety of the Study Guide in order to understand the approach to studying the Common Core as well as browsing the standards.

Study Task 1: Browsing the Study Guide and Standards

3.1.1. Brief Description of Study Task #1 and its Development

The Common Core Math Standards are longer, more complex, and have a different organization than California’s current math standards. They provide more in depth explanations and illustrations of math concepts and require the proper context for teachers to really dig in and study them and not become overwhelmed by the sheer volume of words they contain. To this end, we found it helpful to simply start the study process by browsing the standards and the Study Guide. This approach provided teachers with a first exposure to the new math standards that was non-threatening and positioned teachers well to complete subsequent study tasks.

The tasks for studying the Common Core Math Standards were developed working directly with teachers. As such, we received direct and immediate feedback on the value of any given task. The overview of the Study Guide and it’s contents (the first portion of Study Task #1) proved useful in providing teachers with a schema for the totality of their work in studying and beginning to transition to the Common Core Math Standards. The Browsing of the Math Standards (the second portion of Study Task #1) provided teachers with an opportunity to gain an initial familiarity with the new standards without undue pressure to master or produce anything other than preliminary thoughts and observations of the Common Core Standards for their grade level or course. Teachers responded positively to the opportunity to first browse the standards in this fashion.

3.1.2. Intended Outcomes/Understandings of the Study Task #1

As a result of the browsing tasks, teachers should gain a general familiarity with the standards and form general impressions about the nature of the standards themselves. After the browse task many teachers recognized the Standards for Mathematical Practice as new and useful in describing the “habits of mind” that students should develop while doing math. Pilot teachers also noted that the Math Content Standards tended to be more descriptive than the 1997 Math Standards and that the additional verbiage was often attempting to explain math content more extensively and precisely. K-8 teachers also noticed a greater focus at their respective grade levels, registering familiar things moved to higher grades allowing them more time to master the fewer things that the Common Core focuses on at each grade level. Traditional path high school pilot teachers tended to notice the opposite: more standards in Algebra I, Geometry and Algebra II. Each of these impressions and the many more that were made were helpful in sizing up what the Common Core Math Standards are - and are not - separate from the various interpretations and characterizations circulating on the internet and in the popular press. The browsing of the Common Core Math Standards is critical as it allows teachers to form their own first impressions based on their own review and study of the standard themselves.

While browsing the Common Core Standards is a low intensity first exposure to the Common Core Math Standards, it is a structured activity and there are some “points of interest” that all teachers should note as they first study the standards. These points of interest are outlined in section 3.1.3 of this chapter and provide direction for facilitating the browsing of the math standards productively.

Study Task #3: Analyzing the Math Content Standards by Type

3.3.1. Brief Description and Development of Study Task #3.

The 2010 Common Core Math Content Standards include a variety of types of standards: some articulate arithmetic or mathematical facts to be memorized and known, some describe specific procedures to be learned and used, some explain mathematical concepts to be understood, applied and connected to one another, and some standards combine facts, procedures, and/or concepts. For this study task, teachers study their grade level or course standards domain by domain and code each standard into the following categories: Fact, Procedure, Concept, and/or Combination. The goal with this task is not necessarily to arrive at definitive classifications of the standards by category but to study and discuss them in terms of the different teaching and learning they require.

Study Task #3 was developed in conjunction with pilot groups of K-12 teachers who consistently made two major observations while studying the Common Core Math Standards. In contrast to California's prior math standards (1997), the Common Core standards contained (1) more explanation and more examples (more verbiage, in general) and (2) more mathematical terms and language. After an initial read and review, teachers (especially, K-5 teachers) tended to characterize the Common Core Math Standards as "dense," including both the Standards for Mathematical Practice and the Content Standards. However, subsequent reading and discussion, including when we started categorizing standards by type, proved to be more instructive, as teachers penetrated the seeming density of the standards and became more and more comfortable with the mathematical terms and language. Teachers commented that they were accustomed to math standards that primarily articulated what students should know and be able to do, and the Common Core standards devoted noticeably more words to articulating what students should understand. Over time, we developed Study Task #3 to explicitly support among other teachers the same kind of observations made by pilot teachers.

3.3.2. Intended Outcomes/Understandings of Study Task #3.

Assuming teachers are completing study tasks in their prescribed order (first Browse, then interpret Standards for Mathematical Practice, then Analyze Content Standards by Type), Study Task #3 is the first opportunity for teachers to study, in depth, the standards for their grade level or course(s). After completing Task #3, they should possess a general familiarity with the Domains and the particular Strands within each Domain (or Conceptual Category for High School) that are addressed at that grade level or in that course. They should also possess an awareness of the different types of content the standards articulate, including facts, procedures, concepts, and combinations.

As stated above, teachers do not need to arrive at definitive classifications of the standards, but rather an awareness of, and perhaps a respect for, the mathematical content the standards attempt to articulate. In particular, they should arrive at an awareness that some standards attempt to articulate things students should come to understand about mathematics, and that such standards may not readily translate into concrete things students should be able to recite or do. In the best case, teachers complete Study Task #3 with the awareness that some, if not many, standards require additional study and discussion. As one of the pilot teachers commented after completing Task #3:

I don't know that we coded all the standards right, but it was an interesting way to study them. It got me reading much more closely as I tried to determine what each standard was really getting at. (Middle School Pilot Teacher)

3.3.3. Directions for Engaging in Study Task #3 in Grade Level or Course Teams.

- Organize Participants by Grade Level (K-8) or Course (High School). Unlike Study Tasks 2 and 3 (Browse and interpret SMPs), Study Task #3 is a grade- or course-specific task. Teachers will want to analyze standards for the grade or course(s) they teach. As such, the study session should be planned with this organization in mind. All staff might participate in the same session but sit and work in proximity to others at their grade level or to others who teach the same course. Alternatively, Study Task #3 can be conducted individually for each grade level or for teachers of each course, either by design or in conjunction with teachers' regular collaboration time.
- Within Grade Level or Course, Organize Participants into Pairs or Triads. Study Task #3 is best conducted with participants working in pairs. If the grade level or course group has an odd number of teachers, pair up as many individuals as possible and incorporate one triad. Pairs (or pairs and a triad) is more productive than teachers working individually as teachers will want to discuss with one another their views about each standard: Is it a fact, procedure, concept, or combination? However, pairs (or pairs and a triad) tend to work better than larger groups because it is easier for teachers to pace themselves at their desired rate, it allows for partners to examine and discuss the standards more closely (because they can point to and locate items for discussion more easily), it takes a bit less time than doing the task in larger groups, and it also gets more participants directly involved in the discussion of each standard. In larger groups, some individuals might take a more passive role.
- Explain the Purpose of Study Task #3. In facilitating the series of study tasks (1-5, or some portion of the series), it is always helpful to explain the purpose of the task to be completed and locate it in relationship to the other tasks in the series. For example,

Thus far, we have studied and discussed why this is happening (Overview Task), we've browsed the new standards (Study Task 1), we've studied, discussed and interpreted the K-12 Standards for Mathematical Practice (Study Task 2), and in this study session, we'll examine closely and discuss the standards for our own grade level or course in terms of what each standard is really getting at: Is it articulating a fact to be memorized, a procedure to be learned, a concept to be understood and applied, or some combination of those types. The point today is not to categorize all standards precisely but to use the categories (or types) to help us think about each standard and what kind of teaching and learning it requires. Study Task #3 will provide us with sufficient familiarity about our grade or course standards to then move on to Task #4 where we will trace domains of standards across grade levels and Task #5 where we will study our grade or course standards in terms of our current curriculum and teaching (What are we currently covering? What will need refinement, and what will need development?).

- Review Study Task #3 Handout: The Types of Standards. Distribute the Study Task #3 Handout to participants and review and discuss the five coding categories for different types of standards. (The handout is available in the Study Guide Appendix; but it is best to have a duplicated copy available for each participant so they can keep it in front of them while they study and code their standards.) The session facilitator might read the definition for each code aloud and then discuss them with participants, or have participants read silently, discuss with their partner, and then open it up for general discussion. Emphasize to participants that the definitions provided are by no means definitive, and they should not worry about getting the coding of each standard exactly correct. Rather they should work more informally, using the codes to help them study and better determine what each standard is trying to articulate. The definitions that appear on the Study Task #3 Handout are provided below.