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The Feedback on Alignment and Support for Teachers (FAST) Program

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Abstract

Over the last decade, most states have adopted new college- and career-readiness standards in math and English language arts (ELA), standards that call for the mastery of ambitious content and raise expectations for student success and classroom instruction. To support teachers in the implementation of these new, challenging standards, the Center on Standards, Alignment, Instruction, and Learning (C-SAIL) has developed the Feedback on Alignment and Support for Teachers (FAST) program. The FAST program is a virtual coaching program designed to support 4th grade math and 5th grade English language arts (ELA) teachers in fully understanding the college- and career-readiness standards in their states and implementing instruction aligned with these standards to foster learning for all students, including English language learners (ELLs) and students with disabilities (SWDs). The program includes three key program components: personalized instructional coaching, tools to support reflection, and an online library of resources.

Keywords

college and career-ready standards, implementation, professional development, assessment

Disciplines

Education | Educational Assessment, Evaluation, and Research

Comments

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Contents

Introduction

Over the last decade, most states have adopted new college- and career-readiness standards in math and English language arts (ELA), standards that call for the mastery of ambitious content and raise expectations for student success and classroom instruction. To support teachers in the implementation of these new, challenging standards, the Center on Standards, Alignment, Instruction, and Learning (C-SAIL) has developed the Feedback on Alignment and Support for Teachers (FAST) program. The FAST program is a virtual coaching program designed to support 4th grade math and 5th grade English language arts (ELA) teachers in fully understanding the college- and career-readiness standards in their states and implementing instruction aligned with these standards to foster learning for all students, including English language learners (ELLs) and students with disabilities (SWDs).

We piloted the FAST program with teachers in two schools during the 2016–2017 school year and conducted monthly interviews with teachers and FAST coaches to learn what was working and what refinements were needed to support teacher learning. We modified the program during spring and summer 2017 to address teacher and coach suggestions for improvement and tested the impact of the modified FAST program on teachers' instruction and their students' achievement through a school-level randomized controlled trial during the 2017–2018 and 2018–2019 school years.

This manual describes the components associated with the modified FAST program that was implemented in the FAST study. It begins with an overview of the program and continues with detailed descriptions of each of the program activities. It concludes with a summary of findings from the randomized trial and a discussion of implications for teacher professional learning.

Program Overview

The FAST program guided by an approach to analyzing instructional alignment that focuses on the content of instruction. The program includes three key program components: personalized instructional coaching, tools to support reflection, and an online library of resources, as described below.

Program Components

The FAST program components are

- **Personalized instructional coaching.** Teachers meet virtually with FAST coaches—experts in math or ELA—both individually and as part of school-based, grade-level collaborative teams, called Collaborative Academic Study Teams (CASTs), to discuss the content of instruction and identify ways to strengthen the alignment of instruction with state standards.

- **Tools to support reflection.** Teachers use instructional logs and video recordings of their own instruction to reflect on the alignment of their instruction with state standards during individual coaching sessions. The instructional logs and video recordings are housed in a personal teacher account within a secure, online portal.

- **Library of resources.** The online portal includes a library of resources to support teachers in designing instruction aligned with state standards for all students. This library includes instructional materials to use during lessons, professional learning resources to promote understanding of the standards, and resources to support instruction for English language learners (ELLs) and students with disabilities (SWDs).

The FAST activities span 2 years. In each year, teachers are expected to complete five 60-minute individual coaching sessions, five 60-minute CAST meetings, five video recordings of instruction, and five instructional logs. In the first year, the components of the program are introduced in stages, giving teachers an opportunity to become familiar with each component before moving to the next. Once the components have been introduced, the activities occur in cycles. Exhibit 1 shows a sample 6-week cycle.

Exhibit 1. Sample 6-Week FAST Cycle

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
20	21	22	23	24 CAST (60 min)	25	26
27	28	29	30	31 Instructional log	1	2
3	4	5	6	7	8 Video recording	9
10	11	12	13	14	15	16
17	18	19	20	21	22 Individual coaching (60 min)	23

Approach to Analyzing Instructional Alignment

To examine instructional alignment with state standards, teachers and coaches look at (a) *what* is being taught and at what level of *depth* and (b) the *extent* to which the *what* and the level of *depth* match the specifications in the state standards. To perform these analyses, teachers and coaches use the FAST frameworks, which are based on the Survey of Enacted Curriculum (SEC).[1] The frameworks for math and ELA are included in Appendices A and B.

Each framework is organized into *topics*, which describe the what, and *cognitive demands,* which describe the level of "depth". Exhibit 2 provides samples of each.

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[1] The SEC uses topic/cognitive demand pairs to analyze alignment between instruction and state standards in Grades K–12. See Porter, McMaken, Hwang, and Yang (2011). Common Core Standards: The New U.S. Intended Curriculum. *Educational Researcher*, 40(3), 103–116. The FAST framework is based on the SEC but includes only the topics and cognitive demands that pertain to the grade bands that the study targeted.

Exhibit 2. Sample Categories, Topics, and Cognitive Demands Form the FAST Frameworks

Framework section	Math	ELA
Topics	Number properties and relationships • Whole number decomposition (e.g., 113 = 1 hundred +1 ten + 3 ones; 52 = 20 +32) • Decimal decomposition • Fraction decomposition (e.g., ¾ = ¼ + ¼ + ¼; 5/6 = 2/6 + 3/6) • Equivalent and nonequivalent fractions • Equivalence of decimals and fractions • Comparison of two or more whole numbers • Comparison of two or more decimals • Comparison of two or more fractions • Etc.	Textual elements and features • Theme or main idea • Key events or key concepts • Setting • Characters • Supporting details or supporting evidence (e.g., facts, details, or examples that support main idea; description of event or character) • Organization or text structure (e.g., plot, verse, stanza, description, cause/effect, compare/contrast, problem/solution) • Point of view (e.g., first vs. third person, multiple perspectives, U.S. vs. non-U.S. perspective) • Conflict
Cognitive demands	• Recall/perform procedures • Demonstrate/communicate understanding • Etc.	• Recall/reproduce • Skills/concepts • Etc.

Teachers and coaches use topic/cognitive demand pairs to describe instruction. For example, one lesson activity may emphasize using a math procedure to generate equivalent fractions and another activity may emphasize explaining why two fractions are equivalent. The former activity would be described by "Equivalent and nonequivalent fractions" *and* "Recall/perform procedures." The latter activity would be described by "Equivalent and nonequivalent fractions" *and* "Demonstrate/communicate understanding."

The FAST framework can also be used by content experts to describe state standards. Experts in math or ELA describe each standard by indicating the topic/cognitive demand pairs the standard focuses on.[2] Exhibit 3 shows examples of standards in math and ELA and associated codes used to describe them.

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[2] For FAST, the experts were asked to code each standard, using up to six topic/cognitive demand pairs.

Exhibit 3. Sample of Coded Standards

Subject	Standard	Topic/cognitive demand pairs
Math	Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	• Equivalent and nonequivalent fractions *and* Demonstrate/communicate understanding • Fraction or decimal models *and* Demonstrate/communicate understanding • Equivalent and nonequivalent fractions *and* Justify/evaluate/generalize
ELA	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.	• Comparison of elements across texts *and* strategic and extended thinking • Characteristics of genre (e.g. fantasy, folktale, myth, legend, fable, realistic fiction, poetry, nonfiction) *and* strategic and extended thinking • Theme or main idea *and* strategic and extended thinking

To assess the extent to which a teacher's instruction is aligned with the standards, the coach and teacher can compare the topic/cognitive demand pairs used to describe instruction with the pairs the experts used to describe the standards. If they match, the content of instruction is aligned with the standards. In the FAST program, teachers and coaches analyze the alignment of instruction for a full lesson, a unit (typically lasting 4 to 6 weeks), and the full year.

In ELA, teachers and coaches also examine content alignment with standards by considering the extent to which teachers are using texts that are at the appropriate level of complexity for the grade level. For this, teachers and coaches use lexiles, which are quantitative measures of text complexity.

In addition to analyzing the content of instruction, teachers and coaches examine the extent to which students are actively engaging with lesson content at the right level of depth. The FAST program emphasizes that it is not enough for the content of a lesson, as presented by the teachers, to match the state standards. In addition, students need to engage with the content at the right level of depth through their participation in whole-group discussions and through the work they do individually or in small groups. If so, we say that the "academic responsibility" lies with the students.

Supporting Students to Master the Standards

Sometimes students haven't yet developed the skills and understanding needed to work with material aligned with their grades' standards, or they have the skills but need some support to do so. This may be true for all students, including students with disabilities (SWDs) and English language learners (ELLs). The FAST program offers a framework using *instructional accommodations* to provide—and ultimately remove—the support needed for students to move toward mastery of the state standards. This framework focuses on two types of accommodations: *instructional modifications* and *scaffolds*. (See Appendices C and D for examples of each type of instructional accommodation.)

Instructional modifications are practices for students who are working below grade level. These modifications typically change the topic or cognitive demand being taught and, as a result, lead to instruction that is not aligned with standards. For example, teachers may decide that they need to provide some students with texts from lower grades, or spend time reviewing and making sure that students have the skills from a previous grade. The FAST program encourages teachers to use instructional modifications sparingly and only to address content that is directly related to the standards at the time it is needed, rather than spending several weeks reviewing before moving into grade-level standards.

Scaffolds are instructional practices that teachers use to support work with grade-level material, but in using them, teachers have the academic responsibility. For example, if a teacher models making inferences with grade-level text for the students, the topic/cognitive demand pair aligns with the standard, but the teacher is doing the work. The FAST program encourages teachers to use scaffolds, as necessary, particularly for ELLs and SWDs, but then remove them—or support students in adopting them for themselves—as soon as possible.

The figure in Exhibit 4 shows the shifts that the FAST program encourages teachers to make from one type of instructional accommodation to the next. Teachers may use instructional modifications to ensure that students have the necessary skills and understanding to access content aligned with grade-level standards. As teachers shift to grade-level material, they may need to offer scaffolds to support students with this material. Over time, teachers should remove these scaffolds (or have students adopt them for themselves) as soon as possible so that not only are students working with grade-level content but are assuming the academic responsibility. Note that teachers

don't always have to start with instructional modifications. If students have the skills and understanding needed to engage with grade-level material, teachers may simply need to use scaffolds to support them. In that case, too, the FAST program encourages teachers to remove these scaffolds as soon as possible.

Exhibit 4. FAST Framework for Supporting Student Mastery of the Standards
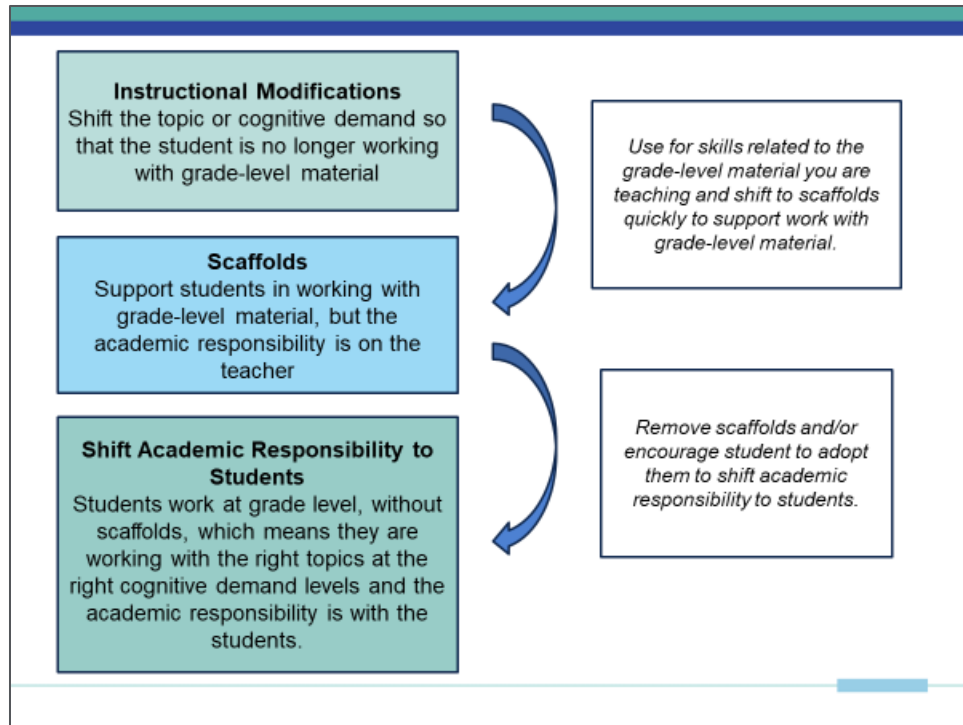
Personalized Instructional Coaching

In their work with FAST coaches, teachers examine their state standards, reflect on instruction, and consider resources to support instruction aligned with these standards. The grade-level CAST meetings are used to promote collaborative discussion of standards and instructional planning. The individual coaching sessions focus on individual instruction. Teachers work with the same FAST coach for the CAST meetings and individual coaching sessions, and all meetings are conducted virtually, using video conferencing technology.

CAST Meetings

Each of the 60-minute CAST meetings is led by the FAST coach. Teacher participants include the 4th-grade math or 5th-grade ELA teachers from a school[3]. The meetings are planned for times that work with the teachers' schedules, and all CAST meetings have the same structure. Each begins with a discussion or activity to promote team building among the teachers and between the teachers and coaches. This is particularly important, given the virtual context. After a period of team building, coaches lead an activity to support teachers in developing their understanding, initially of the FAST program components and frameworks and, later, of the standards. Teachers then discuss what they have learned and consider implications for instruction. Each meeting ends with a summary of the discussion and consideration of next steps. Exhibit 5 shows the structure of each CAST meeting segment.

Exhibit 5. CAST Meeting Structure

CAST segment	Duration	Description
Team building	10 minutes	The coach checks in with teachers to learn how the year is progressing. Teachers and coach respond to a discussion prompt, such as "What topic(s) do you find difficult to teach?"
Knowledge development	20 minutes	*Early sessions*: Teachers review and discuss standards and videos of instruction to become familiar with the FAST framework for alignment and student support. *Later sessions*: Teachers determine the topics/cognitive demands specified in the standards that they will be teaching in an upcoming unit and make connections to those addressed in prior and later grades.

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[3] School principals were invited to the first CAST meetings of each year.

CAST segment	Duration	Description
Considerations for instruction	20 minutes	Teachers discuss the way they would apply what they learned during the "Knowledge development" segment to their instruction for all students, including ELLs and SWDs. Teachers also examine resources from the online library of resources that could be used to support aligned instruction.
Summary and next steps	10 minutes	The coach summarizes the activity of the session and leads a discussion of next steps.

Individual Coaching Sessions

During the individual coaching sessions, teachers and coaches discuss the content of teachers' instruction, focusing on alignment with state standards; determine areas of focus for improving or maintaining alignment in upcoming instruction; and identify actionable next steps the teacher can take to improve in the areas of focus. The information in the instructional logs and video recordings provides the basis for conversation during the individual coaching sessions.

Like the CAST meetings, each individual coaching session is highly structured and is intended to last 60 minutes. Prior to each session, coaches log into the online portal and analyze the information contained in the most recent instructional log and classroom video recording in the teacher's account. Coaches then prepare one or two prompts to support teacher reflection on the instructional log, choose two or three short clips from the teacher's video-recorded lesson to support reflection on the video, and create reflection prompts for the video clips. For more information regarding the logs, videos, and coach's analyses, see the "Tools to Support Reflection" section.

Once they have created the prompts and chosen the clips, coaches prepare a new "Coaching Session Summary" document. This "Coaching Session Summary" is accessible in the online portal to the teacher who is the focus of the feedback and that teacher's coach. It guides the conversations between the coach and the teacher. When a new "Coaching Session Summary" is created, it automatically self-populates with a list of the areas of focus and next steps that were identified in the prior coaching session and includes space for coaches to add their reflection questions and choice of video clips. Exhibit 6 provides an example of the "Coaching Session Summary" form, including the coach observations.

Exhibit 6. Coaching Session Summary with Sample Coach Observations (Math)

Areas of Focus and Action Steps for Previous Log Period

Areas of Focus	Action Steps
Standards Alignment	Review Standard RL.5.2 and consider topic/cognitive demand pairs associated with this standard.
Standards Alignment	Consider modeling as a strategy to begin to move instruction in the classroom toward higher level of cognitive demand.
Standards Alignment (resource)	Here is a sample mini-lesson from Learnzillion that uses a particular text "Adventures of Isabel" to analyze theme. This lesson could be adapted for poems of your choice, but gives some ideas for student questions associated with the topics and cognitive demand pairs in this standard: https://learnzillion.com/lesson_plans/10052-lesson-9-analyzing-poetry-for-theme/
Standards Alignment (resource)	Here is a sample lesson with suggested text by Jaqueline Woodson that provides the opportunity to explore how the speaker in a poem reflects on a topic. This lesson plan breaks down activities to have students discuss in groups, but this could also be modeled or teacher-led: http://www.readwritethink.org/classroom-resources/lesson-plans/exploring-perspectives-desegregation-using-31133.html?tab=1#tabs

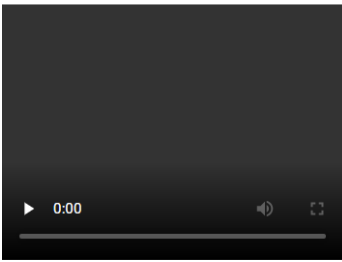### ⊟ Video Observations for Current Log Period

Lesson	02/15/2019 – Vocabulary

Observation 1

Title:	Teacher introduction of activity	Start Time:	00:09:35	End Time:	00:12:22

▶ 0:00   🔊   ⛶

Coach Prompt :

In this clip you were giving students directions for the vocabulary activity they are completing in groups. The standard addressed is RL 5.4: Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes. How does instruction in this clip address the standard in terms of topics and cognitive demand? What are some next steps to continue to align to the standard?

Instructional Log Observations for Current Log Period

Instructional Log	02/04/2019 - Unit 1-3	Open Instructional Log Report

Coach Observations

I noticed an emphasis on the Skills and Concepts level of cognitive demand in the Listening and Speaking category. I thought we could look at topics and cognitive demand this category in relation to the standards. Then I though we could take a look at the Vocabulary category and build on the standard from your video and continue to reflect on RL.5.4.

Teachers are encouraged to review the prompts and video clips that the coach added to the "Coaching Conversation Summary" prior to their meeting. Teachers can then add their own reflections to the "Coaching Session Summary" in preparation for the meeting with their coach.

When coaches and teachers meet, the coach opens the "Coaching Session Summary" document and shares the screen with the teacher so that they are looking at the same thing. The conversation begins with a review of the areas of focus and next steps identified in the previous coaching session, as well as a review of the teacher's progress in meeting these next steps. Teachers and coaches then examine the instructional logs and reflections they posted to the "Coaching Session Summary." They identify areas in which the teachers' instruction aligns with state standards, those in which it does not, and the way teachers can improve alignment. Coaches add a summary of the discussion to the "Coaching Session Summary." Finally, they discuss the video clips and their reflections on the video and identify ways that teachers can improve. Coaches also document the content of this conversation in the "Coaching Session Summary."

At the end of meeting, the coaches and teachers identify areas of focus to improve or maintain alignment, as well as actionable next steps associated with these areas. Coaches add these to the "Coaching Session Summary." After the meeting, coaches search for relevant resources from the online library and add them to the "Coaching Session Summary." Both teachers and coaches can review the document in the portal after the meeting.

Tools to Support Reflection

As described in the "Personalized Instructional Coaching" section, the individual coaching sessions use the instructional log and video recordings of instruction to reflect on instructional alignment and identify areas for improvement. Not only do these tools provide a basis for discussion with coaches, but they offer opportunities for teachers to reflect on the alignment of their instruction with their state standards. This section provides more detail on these components of the FAST program.

Instructional Log

The instructional log is housed in the online portal and is used to support teacher reflection on instruction for the year and for a given unit. As soon as teachers complete an instructional log, they can view visual representations of the information about their instruction that they provided in the log. These representations can be used to examine alignment with state standards, and they form the basis of discussion with coaches.

Setting up the logs for the year. Prior to implementation, so that teachers can analyze alignment over the course of a unit, as well as in individual lessons and for the full year, we work with the teachers' school district to divide the content to be covered during the year into 4- to 6-week units of study that align with the district pacing guide. We then create files that contain the names of the units, master codes for the full year's set of standards, and master codes for the set of standards associated with each unit. These files are loaded into the online portal.

Entering information into the instructional log. To complete an instructional log, teachers enter the date and label the log with one of the unit names that were preloaded into the portal (Exhibit 7). Teachers choose the unit for which they are reporting instruction.

Exhibit 7. Creating a New Instructional Log

Date and Unit

Please enter the end date for the instructional log and indicate the unit covered by that log.

End Date [ ]

Unit [▼]

[SUBMIT] [CANCEL]

After teachers have created a new instructional log, they enter the number of instructional days represented by the log. (These do not include weekends, vacation days, snow days, days taken away by assemblies, etc.) Teachers then progress through the sections of the log by clicking on each survey section link. Exhibit 8 shows the survey section links for math.

Exhibit 8. Sections in the Instructional Log (Math)

Survey Sections	Status	Survey Sections	Status
Number Concepts		Instructional Accommodations	
Number Properties and Relationships			
Whole Number/Decimal Operations			
Fraction Operations			
Models and Representations			
Measures			
Measurement Relationships and Operations			
Geometric Concepts			
Finance			

When teachers complete the survey sections on the left, they report the level of emphasis they gave to each topic/cognitive demand pair in the FAST framework during the log period. Exhibit 9 shows an example for math.

Exhibit 9. Reporting Topic and Cognitive Demand in the Instructional Log (Math)

When teachers complete the "Instructional Accommodations" survey section , they are asked to report on the extent to which they used instructional modifications for a target median student, ELL student, and SWD student.[4] Exhibit 10 shows an example for math.

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[4] Teachers use the following rules to identify the target students: the median student is the student who falls in the middle of the prior year's state test scores and the ELL and SWD students are those who are most representative of the students in these groups in the class.

Exhibit 10. Reporting Instructional Modifications in the Instructional Log (Math)

Instructional Accommodations

Teachers use a range of instructional accommodations to support student learning, including those that attend to the needs of struggling students.

Please indicate the extent to which you used each of the instructional accommodations to meet the needs of your students and support student learning with the median target student, the English language learning (ELL) target student, and the student with disabilities (SWD) target student **during the current log period**.

1. When doing word problems, remove the words or context and ask students to solve the 'naked' math problem

Median Target Student	○ Never ○ Rarely (e.g. a quarter of the word problems) ○ Sometimes (e.g. half of the word problems) ○ Often (e.g. three-quarters of the problems) ● Always	Explain(optional):
ELL Target Student	○ Never ● Rarely (e.g. a quarter of the word problems) ○ Sometimes (e.g. half of the word problems) ○ Often (e.g. three-quarters of the problems) ○ Always	Explain(optional):
SWD Target Student	● Never ○ Rarely (e.g. a quarter of the word problems) ○ Sometimes (e.g. half of the word problems) ○ Often (e.g. three-quarters of the problems) ○ Always	Explain(optional):

Because work with different types of reading texts and writing types is an important feature of current college- and career-ready standards, ELA teachers are also asked to report on the percentage of time they dedicate to informational and literary texts in their reading instruction, as well as the percentage of time dedicated to narrative/literary, opinion/argument, and explanatory/ informational types in their writing instruction. These questions are shown in Exhibit 11.

Exhibit 11. Reporting Time Spent on Reading/Writing Types in the Instructional Log (ELA)

Instructional Survey

Reading and Writing Types

Reading Types

Over the course of the 2016-17 school year, approximately what percentage of your 5th grade reading instructional time was spent on the following types of texts?

Literary Text [   ] %

Informational Text [   ] %

Writing Types

Over the course of the 2016-17 school year, approximately what percentage of your 5th grade writing instructional time was spent on the following types?

Narrative/literary [   ] %

Opinion/argument [   ] %

Expository/informative [   ] %

[SUBMIT] [CANCEL]

In addition, ELA teachers are asked to enter information about the reading texts they used during the log period, as shown in Exhibit 12. Teachers click the Search for Lexile Measure link to determine the lexile(s) of the text(s) they used.

Exhibit 12. Reporting Text Information in the Instructional Log (ELA)

Please complete these questions regarding the literary text you spent the most time during this log period.

You must enter either an author or a source (e.g., magazine title, basal reader, etc.), but you do not have to enter both. This information is to help us identify the material, so if you can provide complete information we will not have to seek clarification later.

To determine the lexile measure of your text, click *Search for Lexile Measure* and enter the text information into *The Lexile Framework for Reading* website.

Exact Title:

Author (optional):

Source (optional):

Lexile Measure: Search for Lexile Measure

*If you cannot find the
lexile measure for the
text on the website,
enter "0".*

Instructional Log Report and Reflection. When teachers finish entering information about their instruction into the instructional log, a report that shows alignment with standards and use of instructional modifications immediately appears in their portal account. To view the report, teachers choose "Instructional Logs" under "Reports." Teachers can view a cumulative report, which provides information accumulated across all logs completed that year, or a unit report, which provides information accumulated across all logs completed in that unit, as shown in Exhibit 13. To create a report that includes information from more than one log, the system automatically weights the information from a single log by the percentage of total instructional days reported overall that is represented by that log. Information from logs that cover more instructional days is weighted more heavily than information from logs that cover fewer instructional days.

Exhibit 13. Viewing Instructional Log Reports (Math)

Please choose a report to view. You can either view your cumulative report, or a report associated with a particular unit.

Cumulative Report

Go

Unit Report

Go

Units:
Unit 1-3: Place Value and Whole Number Operations ⌄

When teachers open their reports, they see a color map. This color map provides a picture of teachers' reported instruction on the left and a picture of their state standards, or the target, on the right, as shown for math in Exhibit 14. The topics are represented in the rows and the cognitive

demands in the columns. The numbers in the cells represent the percentage of reported instruction (on the left) and the percentage of the content in the standards (on the right) dedicated to each topic and cognitive demand pair. The darker the cell, the more emphasis reported for instruction (on the left) or specified in the standards (on the right). Teachers use these maps to reflect on the alignment of their instruction with their state standards.

Exhibit 14. Sample Color Map (Math)

	Instruction (over 33 days)					Topic Categories	Target (over 170 days)					
Total	Recall/Perform Procedures	Demonstrate/ Communicate Understanding	Justify/Evaluate/Generalize	Solve and Interpret Findings from Word Problems			Recall/Perform Procedures	Demonstrate/ Communicate Understanding	Justify/Evaluate/Generalize	Solve and Interpret Findings from Word Problems	Total
14.11	4.98	4.15	2.49	2.49		Number Concepts	3.20	4.80	0.00	0.00	8.00
42.74	11.62	11.62	9.96	9.54		Number Properties and Relationships	4.00	11.20	4.80	0.00	20.00
9.12	6.22	1.24	0.83	0.83		Whole Number/Decimal Operations	4.00	4.80	1.60	3.20	13.60
0.00	0.00	0.00	0.00	0.00		Fraction Operations	2.40	4.00	0.00	4.00	10.40
34.02	9.54	9.13	8.30	7.05		Models and Representations	2.40	21.60	0.00	0.00	24.00
0.00	0.00	0.00	0.00	0.00		Measures	2.40	1.60	0.00	1.60	5.60
0.00	0.00	0.00	0.00	0.00		Measurement Relationships and Operations	1.60	1.60	0.00	2.40	5.60
0.00	0.00	0.00	0.00	0.00		Geometric Concepts	8.00	4.00	0.80	0.00	12.80
0.00	0.00	0.00	0.00	0.00		Finance	0.00	0.00	0.00	0.00	0.00
	32.36	26.14	21.58	19.91		Total	28.00	53.60	7.20	11.20	

As teachers and coaches examine the color map prior to and during the individual coaching session, they progress through a series of questions, which can be used to analyze alignment with state standards. These questions include the following:

- Where do the instruction and target cells align?
- Where are white cells where they shouldn't be?
- Where are colored cells where there should be white cells?
- Which cells are lighter than the corresponding target cells?
- Is there a change from past reports?
- How does this inform future planning?

In addition to the color map, the ELA report includes pie charts that show the percentage of total instructional time teachers reported spending on the different reading and writing types, as shown in Exhibit 15. The coach and teacher discuss ways of ensuring equal time on each reading type and equal time on each writing type.

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Exhibit 15. Sample Pie Charts Showing Percentage of Instructional Time Spent on Different Reading and Writing Types (ELA)
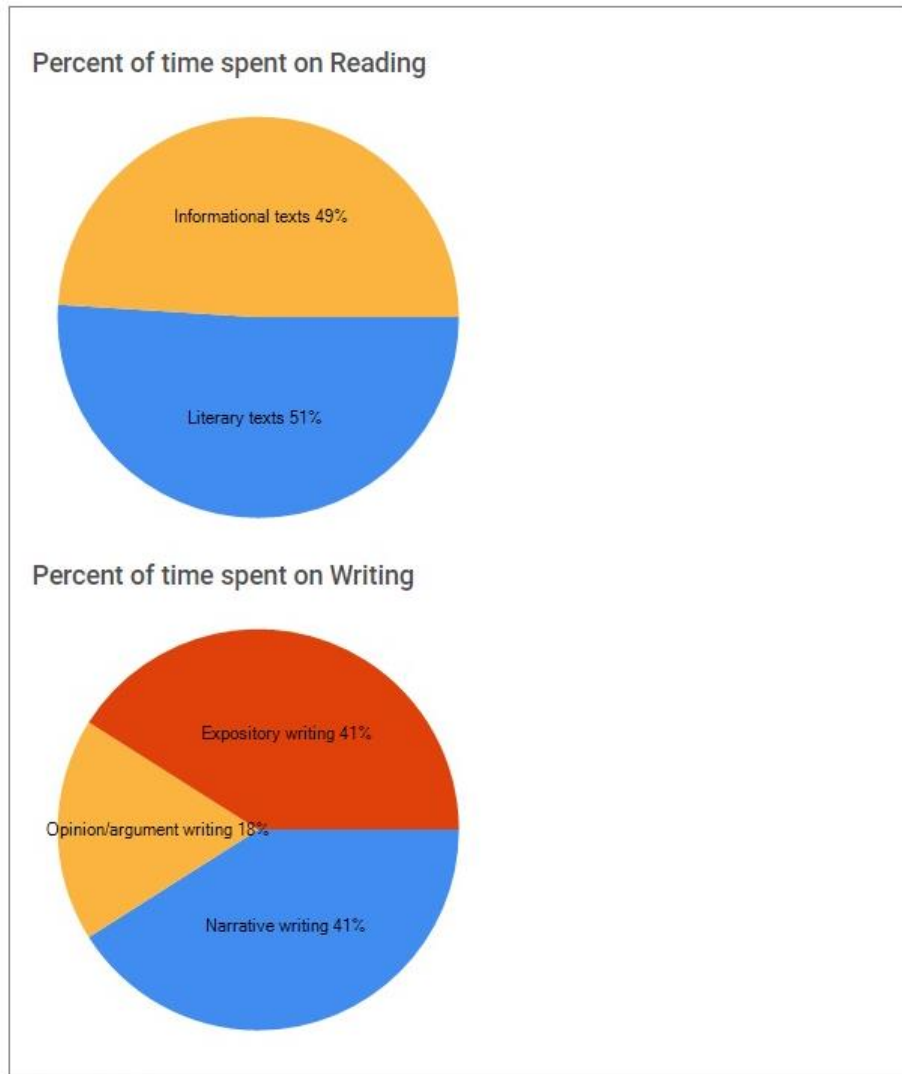
In addition, each ELA teacher sees a line plot in their instructional log report that shows the lexiles of the texts they used over time, as shown in Exhibit 16. The line plot shows the lexiles entered for up to two literary texts and up to two informational texts that were used during the log period. To make it easier for teachers to reflect on the extent to which they are using grade-level literary texts as well as grade-level informational texts, the lexiles for the two type of texts appear in different colors.

Exhibit 16. Sample Lexile Report (ELA)
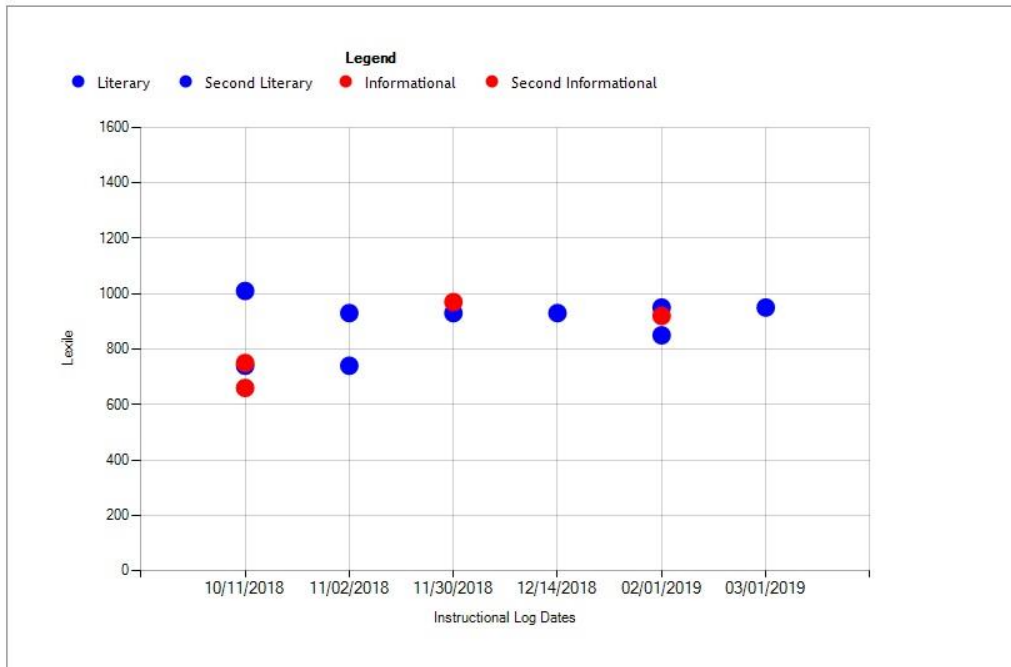
Finally, the report for each math and ELA teacher includes a bar chart that shows the extent to which the teacher reported using instructional modifications with the target median, ELL, and SWD student. Exhibit 17 shows a math example. During the coaching sessions, the coach and teacher discuss ways of moving from modifications to scaffolds and, ultimately, to independent work for these students.

Exhibit 17. Sample Instructional Modifications Report (Math)
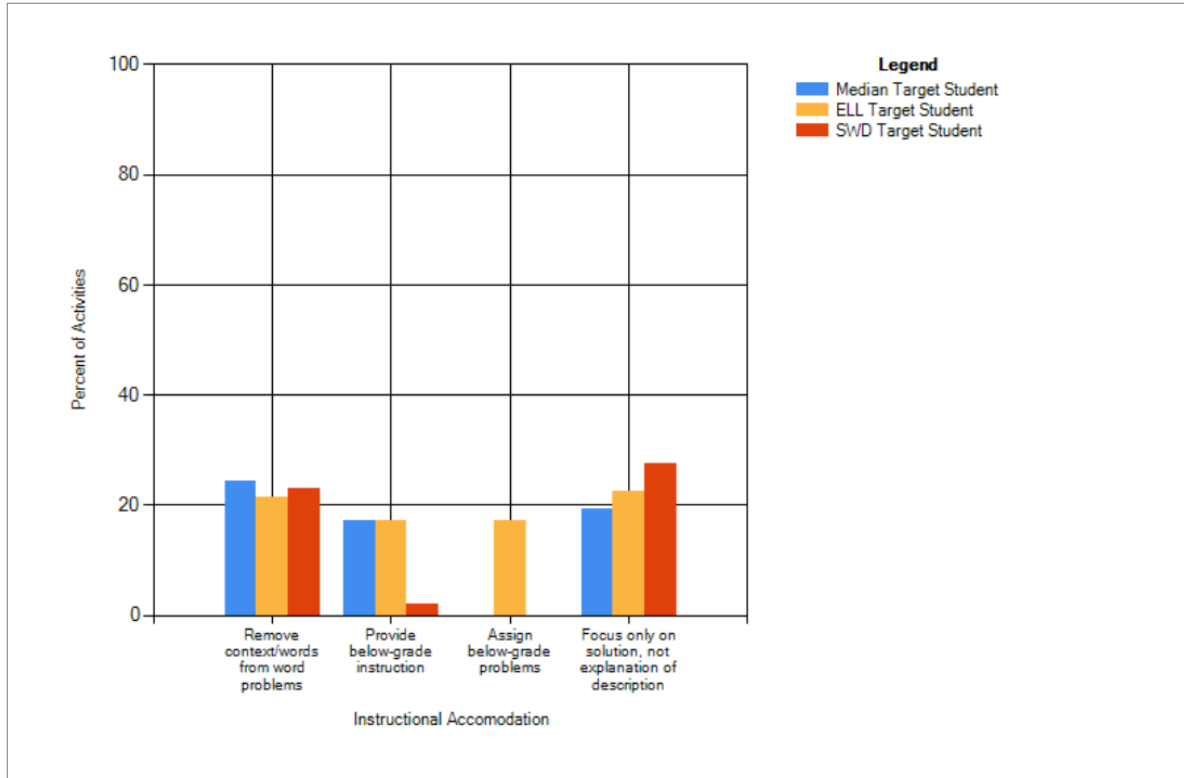
Video Recordings of Classroom Instruction

The video recordings of classroom instruction provide opportunities for teachers to calibrate their reporting in the instructional logs with the coach's perspective on instruction. In addition, the videos enable teachers to reflect on the alignment of their instruction with state standards, the extent to which the academic responsibility during instruction lies with their students, and the extent to which they are using instructional accommodations with their students. To support calibration and reflection, teachers video record lessons and share information about these lessons in the online portal. Coaches then review the video and pick two or three short clips to highlight strengths and areas for improvement and pose reflection questions associated with these clips for the teacher. These are discussed during the coaching session.

Video collection and sharing. The process begins with the teacher choosing a lesson to record. Teachers are encouraged to choose lessons that

- Are at least 30 minutes in length

- Have a clear instructional purpose, addressing a specific standard or standards
- Focus on introducing students to new materials and are not focused on test review
- Do not include large swaths of time devoted to test taking, silent work, or test review,
- Ideally include at least some time devoted to whole-group instruction or conversation.

Once they record a lesson, teachers upload the video to a secure cloud space. A FAST team member then reviews the video to be sure the sound and picture are clear and attaches it to the teacher's online portal account.

In addition to uploading the video, teachers are also asked to enter information about the video-recorded lesson in the portal. Specifically, teachers indicate the standard(s) addressed in the lesson and complete an instructional log for the lesson. In addition, teachers upload worksheets that were used in the lesson and indicate whether the worksheets were used with the target median student, target ELL student, or target SWD student. After finalizing the information, teachers can review a video report that shows a summary of the information they entered as well as a link to the documents they uploaded and their video recording. Exhibit 18 shows a sample for ELA.

Exhibit 18. Sample Teacher Video Report (ELA)

Lesson Date	2/13/2019
Lesson Topic	Wriitng
Standard addressed	5.2A

Topics/Cognitive Demand Covered

Topic	Cognitive Demand	Level of Emphasis
Planning, including use of procedural facilitators (e.g., graphic organizer, rubric, checklist, map)	Recall/Reproduce	3
Purpose, task, and audience	Recall/Reproduce	3
Logical organization, structure or format	Skills/Concepts	4
Introduction (e.g., topic, claim, reader engagement)	Skills/Concepts	4
Drawing on information from sources	Skills/Concepts	4
Behavioral norms in conversation or discussion (e.g., not interrupting, raising your hand, staying on topic, listening)	Skills/Concepts	4
Consideration of others' ideas	Skills/Concepts	4

Lexile

Literary Lexile	Informational Lexile
	530

Instructional Accommodations

Instructional Accommodation	Median Target Student Percent of Activity	ELL Target Student Percent of Activity	SWD Target Student Percent of Activity
Reduce question complexity	75	0	75
Provide less complex text	75	0	75
Focus on factual information	75	0	75
Replace writing with verbal response or scribe	75	0	75
Reduce expectations for participation in speaking and listening	75	0	75
Focus on high frequency or basic general vocabulary	75	0	75

Lesson Documents

Document Name	Used For	Options
Martin Luther King Jr text	Median target student, Student with disabilities (SWD) target student	View
Cell Phone Mania	Median target student, Student with disabilities (SWD) target student	View

[*Video appears here*.]

Coach video analysis. Coaches review the teacher video reports, using a structured protocol to analyze the extent to which (a) the observed instruction aligns with the standard the that teacher has indicated the lesson addresses, (b) the level of emphasis on topic/cognitive demand pairs in the observed instruction matches the level the teacher has entered, (c) the academic responsibility lies with the students, and (d) the teacher uses accommodations.

To complete this work, coaches log into their accounts in the online portal. There, they can review the lesson date, standard, and video. They can also view handouts that the teacher has uploaded for the lesson (Exhibit 19).

Exhibit 19. Coach Video Analysis Screen
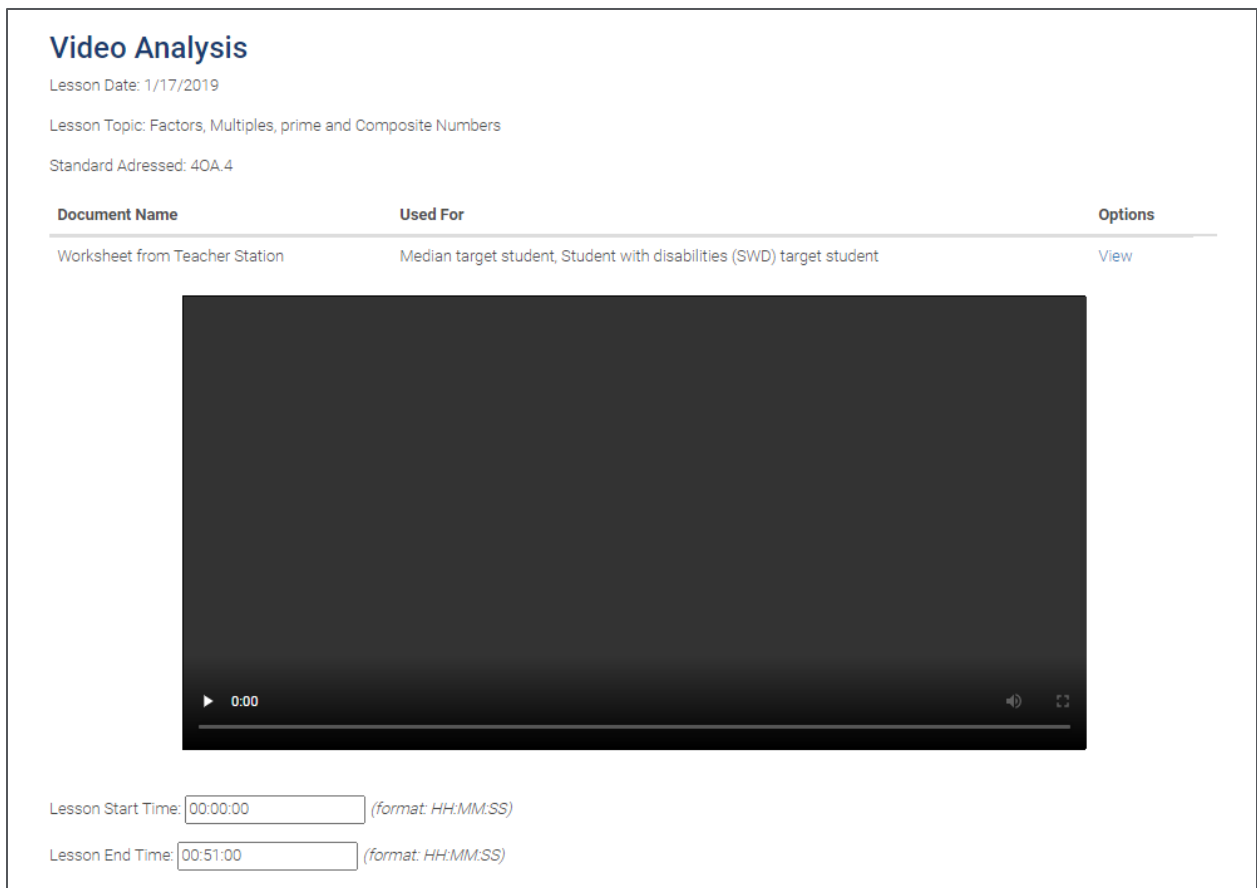
Coaches enter the lesson start and end time and then, on a new screen, conduct their analyses. Here coaches

- provide a brief description of the lesson;
- indicate whether the lesson addresses the standard;
- indicate who owns the academic responsibility in the lesson (teacher, student, shared, or none);

- document notes as they watch the lesson;
- identify the topic/cognitive demand pair(s) form addressed in the lesson; and
- identify video clips that they may want to use to support teacher reflection.

Exhibit 20 shows sample screen shot for this analysis in math.

Exhibit 20. Sample Coach Lesson Analysis (Math)

Lesson Activity

Activity Description: Factors, Multiples, Prime

Start Time: 00:00:00   (format: HH:MM:SS)

End Time: 00:51:00   (format: HH:MM:SS)

Address Standard: ◉ Yes ○ No

Academic Responsibility:
○ Teacher
○ Student
◉ Shared
○ None

Notes:

wrapping up unit (4 stations for post test)
00:00:25 - 4:33 (standards alignment clip could be pulled from this)
What is a factor? Pair...number that we multiply. every single number has the factor 1
factor pairs let us know if the number is prime or composite '

Topic, Cognitive Demand, & Focus

Category: [▾]

Topic: [▾]

Category	Topic	Cognitive Demand/Focus
Number Concepts	Factors, multiples, and divisibility	Recall/Perform Procedures / 4 Demonstrate/ Communicate Understanding / 4 Justify/Evaluate/Generalize / 1 Solve and Interpret Findings from Word Problems / 0
Number Concepts	Odd/even/prime/composite numbers	Recall/Perform Procedures / 3 Demonstrate/ Communicate Understanding / 4 Justify/Evaluate/Generalize / 1 Solve and Interpret Findings from Word Problems / 0
Number Properties and Relationships	Relationship between multiplication and division	Recall/Perform Procedures / 1 Demonstrate/ Communicate Understanding / 0 Justify/Evaluate/Generalize / 0 Solve and Interpret Findings from Word Problems / 0

Nominated Clip

Start Time	End Time	Description	Notes
(format: HH:MM:SS)	(format: HH:MM:SS)		

Start Time	End Time	Description	Notes
00:27:30	00:30:40	Academic Responsibility	Can the boys lead the question and how to solve it ? Since they have such a strong grasp of the content, how can more responsibility be placed on them?
00:47:00	00:49:50	Standards Alignment	how do we know it is composite? What is our definition of composite? Has more than 1 factor pair or more than 2 factors. Find its factors and tell if it is prime or composite. So what do we know? It is prime? Why? He went through every number.What makes it prime? Define.

In addition to analyzing the video, coaches identify short video clips of approximately 3 to 5 minutes in length to discuss with the teacher to reflect on alignment of instruction with the stated standard, the extent to which the academic responsibility lies with students, or the use of instructional accommodations. Coaches choose two to three clips per video that illustrate areas of strength and areas of growth to share with teacher and promote reflection. These clips are added to the "Coaching Conversation Summary" document that will be used in the next individual coaching session.

For each video clip, coaches write a prompt to promote teacher reflection. Each prompt is intended to describe the activity illustrated in the clip, remind the teacher of the standard being addressed, and ask the teacher to reflect on the way the instruction in the video clip addresses the standard. Exhibit 21 shows the structure that coaches use in preparing their prompts.

Exhibit 21. Video Clip Prompt Structure

Prompt type	Prompt structure
Standard alignment	During this clip, the students are [describe activity]. The standard being addressed is [name standard]. In what way does the instruction in the clip align with the standard in terms of topic and cognitive demand? How could instruction be modified to represent even more alignment with the standard [in this lesson or future lessons]?
Academic responsibility	In this clip, the students are [describe activity]. The standard being addressed is [name standard]. As we consider alignment with the standard, we want to pay attention to academic responsibility, or who is doing the work. In what ways does the instruction ensure that academic responsibility rests with the students? How might instruction be modified [in this lesson or future lessons] to provide more opportunities for students to "do the work"?
Instructional accommodations	During this clip, students are engaged in [describe activity], with a focus on [name standard]. One of the ways to provide scaffolds to support students in working with grade-level material is [list scaffold]. How does the instruction in this video use this scaffold to support students in reaching [name standard]? What are possible ways to remove or support students in adopting this scaffold over time?

As described in "Individual Coaching Sessions," teachers are encouraged to review the clips and respond to the coaches' prompts prior to their meeting with the coaches. Teachers and coaches discuss the teachers' reflections and next steps during the coaching sessions.

Online Library of Resources

The online library of resources is housed in the online portal and provides (a) resources to support teachers in aligning their instruction with state standards and (b) a series of how-to videos to help teachers navigate the portal.

Resources to Support Alignment

The resources to support alignment are referenced in work with the coach during CAST meetings and individual coaching sessions. They are aligned with state standards and include the following:

- *Professional resources* that "unpack" the standards to enhance teacher understanding of expectations for students
- *Instructional resources* that teachers can use in instruction, which include lesson plans and structured lesson activities
- *Supports for ELL and SWD students* that teachers can use to support ELLs and SWDs

In addition, the portal contains resources for improving *classroom management*. Coaches may recommend these resources if implementation of instruction aligned with state standards is hampered by lack of classroom management.

How-To Videos

The how-to videos were created by the FAST team and show teachers ways to navigate the various components of the FAST program and online portal. The videos include

- how to complete an instructional log;
- how to complete a video form;
- how to analyze an instructional log report; and
- how to use the "Coaching Session Summary."

Research on the FAST Program

This manual describes the FAST program as implemented in a two-year randomized trial conducted as part of C-SAIL. The study addressed the following three research questions:

- How was the FAST program implemented?
- Did the FAST program lead to greater alignment of teachers' content coverage with state standards?
- Did the FAST program lead to increased student achievement as measured by state assessments?

With respect to implementation, we found that the activities were well-implemented, and coaches addressed each of the planned activities in the CAST meetings and coaching sessions. But treatment teachers participated in fewer activities than planned: on average, they participated in less than half of the planned FAST activities across the two years in the FAST study. With respect to the second and third research questions, we found that the program had a positive impact on teachers' alignment with state standards but not on student achievement (See the C-SAIL website https://www.c-sail.org for more information.)

We are continuing to conduct analyses that may cast light on why the program had an impact on instruction but not achievement. The lack of impact on achievement may be due, in part, to challenges encountered in implementing the program. Due to competing initiatives and limited time available for professional development, treatment teachers participated in less than half of the planned FAST activities across the two years in the FAST study. Despite the lower-than-expected participation level, teachers who participated in the program reported finding it valuable for improving the alignment of their instruction to state standards and demonstrated stronger instructional alignment than similar teachers who did not participate in the program.

The FAST program materials are available for districts and schools interested in using them to support the alignment of instruction with state standards. Districts might use the full program or certain components of the program, either in its current form or a modified form. For example, districts and schools might consider ways of using video-based coaching or the structure of the CAST meetings to support teachers in reflecting on the alignment of their instruction to state standards. Districts and schools might also consider ways of making use of the instructional logs to improve instruction. In addition, the FAST frameworks that are used to guide analyses of

instructional alignment for 4th-grade math teachers and 5th-grade ELA teachers can be adapted to other grade levels and/or subjects. If interested, the FAST study team can provide more information on the program, including the technology used and the approach to developing the FAST framework. Contact Toni Smith (tsmith@air.org) for more information.

Appendix A: Math FAST Framework

Topics

Number Concepts

- Place value
- Whole numbers
- Decimals
- Fraction as part of a whole
- Fraction as a number
- Fraction as the sum of unit fractions
- Fraction as division
- Mixed numbers
- Exponents
- Factors, multiples, and divisibility
- Odd/even/prime/composite numbers

Number Properties and Relationships

- Whole number decomposition (e.g., 113 = 1 hundred +1 ten + 3 ones; 52 = 20 +32)
- Decimal decomposition
- Fraction decomposition (e.g., ¾ = ¼ + ¼ + ¼; 5/6 = 2/6 + 3/6)
- Equivalent and nonequivalent fractions
- Equivalence of decimals and fractions
- Comparison of two or more whole numbers
- Comparison of two or more decimals
- Comparison of two or more fractions
- Comparison of two or more fractions by creating equivalent fractions
- Comparison of two or more fractions using benchmark fractions
- Comparison of two or more fractions having the same numerators or the same denominators
- Opposites, reciprocals, identities
- Numerical patterns (e.g., 3, 5, 7, 9 . . .)
- Multiplication as multiplicative comparison
- Addition as additive comparison
- Relationship between addition and subtraction
- Relationship between multiplication and division
- Properties of operations (e.g., distributive property)

Whole Number/Decimal Operations

- Add whole numbers
- Add decimals
- Addition strategies based on place value and properties of operations (not including the standard algorithm)
- Standard algorithm for addition
- Subtract whole numbers
- Subtract decimals
- Subtraction strategies based on place value and properties of operations (not including the standard algorithm)
- Standard algorithm for subtraction
- Multiply whole numbers
- Multiply decimals
- Multiplication strategies based on place value and properties of operations (not including the standard algorithm)
- Standard algorithm for multiplication
- Divide whole numbers
- Divide decimals
- Division strategies based on place value and properties of operations (not including the standard algorithm)
- Standard algorithm for division
- Remainders
- Multistep operations with whole numbers (e.g., add 4, then subtract 3)
- Round to specific place value
- Multistep operations with decimals (e.g., add 0.3, then subtract 1.2)

Fraction Operations

- Add fractions with like denominators
- Add fractions with unlike denominators
- Subtract fractions with like denominators
- Subtract fractions unlike denominators
- Multiply a whole number by a fraction
- Multiply two fractions
- Divide fractions
- Combinations of operations on fractions (e.g., ½* ¾ + ¼)

Models and Representations

- Whole number multiplication models
- Whole number division models
- Fraction or decimal models

- Number line
- Line plot
- Pictures
- Tallies
- Bar graphs
- Line graphs
- Pictographs
- Dot plot
- Stem-and-leaf plot
- Tables
- Strip diagrams
- Input/output table
- Expressions (e.g., 6 + 6; x + 8)
- Equations or inequalities containing only numbers (e.g., 3 + 5 = 8; 10 = 13 – 3)
- Equations or inequalities with an unknown (e.g., 2x = 6)

Measures

- Length
- Perimeter
- Circumference
- Area (of a 2-dimensional figure)
- Surface area (of a 3-dimensional figure)
- Volume (includes liquid volume)
- Angle measure
- Time
- Temperature
- Money
- Mass
- Customary system
- Metric system

Measurement Relationships and Operations

- Conversions from one unit to another within the same system
- Conversion from one system to another
- Length as additive
- Area as additive
- Volume as additive
- Angle measure as additive
- Add units to calculate length
- Add square units to calculate area

- Add cubic units to calculate volume
- Protractor to measure angles
- Ruler to measure length
- Thermometer to measure temperature
- Formula for area of a quadrilateral
- Formula for area of a triangle
- Formula for volume of a cube
- Operations with measurement units (e.g., add units of length; subtract volumes)

Geometric Concepts

- Point
- Line
- Line segment
- Ray
- Angle
- Right angles
- Adjacent angles
- Parallel lines
- Perpendicular lines
- Coordinate plane
- Two-dimensional figures
- Quadrilaterals
- Triangles
- Right triangles
- Symmetry
- Shape patterns (e.g., dot patterns)

Finance

- Fixed expense
- Variable expense
- Profit
- Financial institutions
- Savings options
- Allowance

Cognitive Demands

Recall/Perform Procedures

- Recite basic math facts
- Recall mathematics terms and definitions
- Recall formulas and computational procedures

- Do computation procedures or algorithms
- Follow the steps in mathematical procedure or apply a formula
- Follow procedures to organize or display data
- Follow procedures to sketch or draw geometric figures
- Identify geometric concepts and shapes

Demonstrate/Communicate Understanding

- Communicate understanding of mathematical concepts
- Represent mathematical concepts, relationships, and/or operations
- Explain findings, interpretations, and results from data analysis
- Explain relationships among concepts and procedures
- Show or explain relationships among models, diagrams, and/or other representations
- Extend mathematical procedures used in one context to another (e.g., extend understanding of whole-number addition to decimal addition)
- Apply understanding of one mathematics concept to make sense of another
- Distinguish, categorize, and compare categories of mathematical and geometric concepts

Justify/Evaluate/Generalize

- Determine the truth of a mathematical proposition
- Justify a mathematical solution, conclusion, or claim
- Write formal or informal proofs
- Identify faulty arguments or misrepresentations of data
- Make and investigate mathematical conjectures
- Determine the reasonableness of mathematical solutions (e.g., by using mental strategies or estimation)
- Recognize, generate, or create patterns
- Find a mathematical rule to generate a pattern or number sequence

Solve and Interpret Findings from Word Problems

- Solve standard, or "textbook," word problems
- Solve real-world problems
- Solve nonroutine word problems
- Interpret answers to real-world problems in context

Appendix B: ELA FAST Framework

Topics

Foundational Skills

- Phonics (letter–sound correspondence)
- Decoding (applying phonics knowledge)
- Word recognition: patterns within words (e.g., word families)
- Word recognition: high-frequency or sight words
- Reading fluency: speed and pace
- Reading fluency: accuracy
- Reading fluency: expression (e.g., phrasing, intonation, and inflection)

Reading

Textual elements and features

- Theme or main idea
- Key events or key concepts
- Setting
- Characters
- Supporting details or supporting evidence (e.g., facts, details, or examples that support the main idea; description of event or character)
- Organization or text structure (e.g., plot, verse, stanza, description, cause/effect, compare/contrast, problem/solution)
- Point of view (e.g., first vs. third person, multiple perspectives, U.S. vs. non-U.S. perspective)
- Conflict
- Technical elements (e.g., bullets, instructions, forms, sidebars)
- Electronic elements (e.g., hypertext links, animations)
- Graphical elements (e.g., maps, graphs, charts, illustrations)
- Structural elements (e.g., index, table of contents, headings, electronic menus, icons)
- Media formats or techniques (e.g., film, audio recordings, video)
- Characteristics of genre (e.g., fantasy, folktale, myth, legend, fable, realistic fiction, poetry, nonfiction)

Author's craft

- Diction and word choice
- Figurative language (e.g., symbolism, simile, metaphor, allusion, personification)
- Voice
- Tone
- Imagery

- Irony
- Use of action or dialogue
- Development of argument or claim
- Authors' purpose
- Aesthetic aspects of text (e.g., beat, rhyme, alliteration, appeal to emotion, creation of mood)
- Influence of time, place, and culture on the author and their texts
- Influence of other source material (e.g., play by Shakespeare or the Bible) on an author's work under study

Comprehension

- Fact and opinion
- Comparison of elements within texts
- Comparison of elements across texts
- Use of evidence from a source to support an inference
- Integration of evidence from multiple sources
- Cognitive strategies (e.g., skimming, scanning, questioning, predicting, summarizing, visualizing)
- Metacognitive processes and self-regulation of strategy use (e.g., reflecting on one's thinking/comprehension, self-correction, fix-up strategies)
- Meaning of words or phrases in text (e.g., technical, connotative, and figurative meaning)

Language

Vocabulary

- Academic vocabulary
- Word relationships (e.g., categories, synonyms, antonyms)
- Signal words (e.g., however, in addition, moreover)
- Structural analysis (e.g., compound words, inflectional forms, suffixes, prefixes, and root words)
- Multiple-meaning words and phrases
- Context clues to infer word meaning
- Word origins
- Figurative, connotative, or technical words or phrases
- Reference tools for vocabulary (e.g., dictionary, thesaurus, glossary, both in paper and online)

Conventions

- Verb tense
- Parts of speech (e.g., noun, pronoun, adjective, verb, adverb, conjunction, preposition, interjection, adverb)
- Capitalization
- Punctuation
- Sentence construction (e.g., simple, compound, declarative, exclamatory)
- Spelling

Language in context

- Adjusting sentence structure for variety to respond to context (e.g., combining, expanding, reducing sentences)
- Choosing words to reflect purpose, task, or tone
- Using language that matches the context

Listening and speaking

- Comprehension of spoken language
- Expression of own ideas
- Consideration of others' ideas
- Speaker's point of view, reasoning, and evidence
- Diction and tone as determined by purpose (e.g., telling a story, show and tell, making a report, conversations with peers, small groups)
- Logical organization of presentation
- Elaboration/detail within presentation
- Effective nonverbal skills (e.g., gesture, eye contact)
- Behavioral norms in conversation or discussion (e.g., not interrupting, raising your hand, staying on topic, listening)
- Use or understanding of diverse media formats (e.g., film, audio recordings, video recordings, PowerPoint/Prezi)

Writing

Writing processes and strategies

- Planning, including use of procedural facilitators (e.g., graphic organizer, rubric, checklist, map)
- Conducting research on a topic
- Drawing on information from sources
- Revising (i.e., substantial changes to text)
- Editing (i.e., surface changes to text, including use of dictionary, thesaurus, style manual)
- Publishing, including use of technology
- Keyboarding skills
- Collaboration and sharing in the writing process (e.g., working with, discussing, and giving feedback on writing)
- Metacognitive processes and self-regulation in writing (e.g., reflecting on one's thinking, self-correction)

Writing components

- Purpose, task, and audience
- Introduction (e.g., topic, claim, reader engagement)
- Logical organization, structure, or format
- Elaboration/detail (e.g., ideas, facts, examples)
- Coherent conclusion

- Narrative/literary techniques (e.g., dialogue, pacing, characterization, point of view)
- Opinion/argument elements (e.g., thesis, argument, claim, opinion, reasons, evidence)
- Expository/informative strategies (e.g., definition, classification, cause/effect, compare/contrast, problem/solution)
- Poetic elements (e.g., rhyme, meter, line, verse, stanza)
- Sentence variety
- Style and technique (e.g., voice, tone, pacing)
- Figurative language (e.g., metaphor, simile, personification, symbolism, hyperbole)
- Word choice
- Transitional words or devices
- Citations and references
- Formatting (e.g., paragraphing, line breaks, headings, spacing, margins, bold, italics)
- Multimedia components

Cognitive Demands

Recall/reproduce: Develop literal understanding of text or speech; complete simple writing tasks. May include the recall, recognition, or location of information or following instructions.

For example:

- Identify or describe explicitly stated main ideas or details
- Identify or describe literary elements (e.g., characters, setting, sequence of events)
- Identify text features in writing (e.g., headings, subheadings, captions)
- Locate information in text or graphics
- Identify terms or vocabulary or match vocabulary to definition
- Use word structure or relationships to determine word meaning
- Apply grammar, punctuation, or spelling rules
- Respond to simple prompts in which the focus is recalling information
- Recite facts or information

Skills/concepts: Integrate information stated in text to develop an interpretation, apply concepts, or make connections; complete basic writing tasks. May include the comparison or contrast of information, examining ideas across texts, or understanding the implications of a text.

For example:

- Interpret text to determine character motivation, character traits, or theme
- Draw conclusions from a text and provide evidence to support ideas
- Organize information on ideas/topics or connect ideas within or across texts

- Use context clues to determine word meaning
- Summarize major ideas/events in a text
- Respond to writing prompts that require a basic organizational structure (e.g., complete paragraph, narrative structure, story structure)
- Deliver a brief speech with little preparation
- Build on others' ideas during a discussion

Strategic and extended thinking: Examine information critically; complete complex writing tasks. May include critically evaluating, analyzing, or synthesizing information.

For example:

- Examine relationships among textual elements and explain reasoning
- Synthesize or analyze elements/characteristics from multiple works or multiple parts of extended texts
- Evaluate an author's purpose, craft, or technique
- Evaluate the validity of information or quality of evidence in a text
- Develop logical arguments and cite supporting evidence
- Gather, analyze, and evaluate information to infer meaning
- Write text that displays a logical progression of ideas
- Deliver a speech aligned to purpose, task, and audience

Appendix C: Math Instructional Accommodations

Teachers use a range of instructional accommodations to support student learning, including those that attend to the needs of struggling students. These can include students working at the median, students who are English language learners (ELLs), and students with disabilities (SWDs). Through the FAST program, teachers will work with their coach to reflect on ways of supporting students to work with grade-level material. These include the following:

- **Instructional modifications.** These are practices that can be used with students who are working below grade level. The focus is on giving students opportunities to work with the below-grade-level material *that is directly related to the grade-level material* and eventually move toward work with grade-level material, with scaffolding from the teacher. These practices typically change the topic or cognitive demand, resulting in instruction that is not aligned with standards. By moving from instructional modifications to scaffolding, teacher move from unaligned instruction to aligned instruction.

- **Scaffolding.** Scaffolding is a practice that can be used to support students with grade-level material but that typically require the teacher to take on more of the academic responsibility. While the use of scaffolds supports work with grade-level material and is thus aligned with state standards, teachers should consider ways of either *removing* or encouraging students to *adopt* these scaffolds to promote independent work with grade-level material.

Examples of each of these practices in math are highlighted in the table on the following two pages.

Instructional Accommodations

Modifications

These are practices for students not ready for standards-aligned instruction. Modifications typically result in unaligned instruction because they change topic and/or cognitive demand. Teachers should consider ways to move from using modifications toward scaffolding. Modifications do the following:

- Provide instruction that only exposes certain students to a portion of a standard, as opposed to the whole standard (with no intention of exposing these students to the entire standard).
- Remove the word problem and simply ask "naked" math problems.
- Provide simpler problems (which should get at the same overarching skill).
- Remove the requirement for an explanation or description of solution methods.
- Provide explicit instruction in and practice with underlying/foundational skills. These skills cover concepts from earlier grade standards.

Scaffolds

These are practices to support student work with grade-level material. While aligned, scaffolds typically result in teachers' taking the academic responsibility. Teachers should consider a way of either removing the scaffolds or supporting the students in adopting the them to support independent work with grade-level material.

Scaffolds that can be adopted by students:

- Have students explain/justify their reasoning in different ways—words, pictures, equations; teach students to visually represent the information in the math problem.
- Have students identify keywords and reference charts to break down/dissect the words and/or determine the appropriate operation.
- Have students explain their thinking verbally before they write; have students verbalize decisions and solutions to a math problem.
- Encourage students to reread a word problem, visualize it, draw pictures or read the word problem, eliminate unnecessary information, solve the problem, rewrite the questions, and put a blank in for the answer or apply ELA strategies (main idea, supporting details).
- Teach students to solve problems using multiple/heuristic strategies.
- Start to see word problems falling into categories and as specific problem types; make connections among word problems.

Scaffolds the teacher can use but should remove over time:

- Provide guided notes for vocabulary.
- Explicitly tell students connections between representations if they are struggling to see these connections themselves.
- Provide number line, ruler, multiplication table, and calculators.
- Tell students which strategy to use for open- ended questions or tasks.
- Talk students through a problem and set it up for them.
- Scaffold an explanation—potentially asking guiding/bounded questions or provide a frame for the explanation.
- Only focus on one representation or solution method but expose them to multiple possibilities.
- Expose students to an entire standard during whole-group instruction, but only cover a portion of the standard during practice/reinforcement.
- Accept a partial explanation.
- Provide more time—more time to practice or for additional exposure to instruction in a smaller group.

Instructional Accommodations

- Use flowcharts to support procedural fluency.
- Provide explicit error correction and have the student repeat the correct process.
- Use precise, simple language to teach key concepts or procedures.
- Use explicit instruction and modeling with repetition to teach a concept or demonstrate steps in a process.
- Provide repeated opportunities to practice each step correctly.
- Have students explain new concepts in their own words, incorporating the important terms you've taught.
- Break tasks into smaller steps.
- Skills can be taught together or can be broken up, across several days (e.g., determining the larger 2-digit number by comparing 1 place value (10s) and then determining the larger, 2-digit number by comparing 2 place values (10s and 1s).
- Provide explicit pre-teaching of core content as a supplement to core instruction.

Scaffolds that should be removed, but are identified specifically for ELL students:

- Process, understand, produce, or use pictorial or graphic representation of the language of the content areas.
- Fill in graphic organizers, charts, and tables.
- Communicate ideas by drawing.
- Provide templates and word banks.
- Support students in analyzing the text of a word problem by allowing them to match words and phrases (e.g., "more than," "less than," "take away") involving money and value to operations (e.g., +, -), using illustrated word cards and realia with a partner.
- Ask yes/no questions.

Appendix D: ELA Instructional Accommodations

Teachers use a range of instructional accommodations to support student learning, including those that attend to the needs of struggling students. These can include students working at the median, students who are English language learners (ELLs), and students with disabilities (SWDs). Through the FAST program, teachers will work with their coaches to reflect on ways of supporting students to work with grade- level material. These include the following:

- **Instructional modifications.** Practices that can be used with students who are working below grade level. The focus is on giving students opportunities to work with the below-grade-level material *that is directly related to the grade-level material* and eventually move toward work with grade-level material with scaffolding from the teacher. These practices typically change the topic or cognitive demand, resulting in instruction that is not aligned to state standards. By moving from instructional modifications to scaffolding, teacher move from unaligned instruction to aligned instruction.

- **Scaffolding.** Scaffolding is a practice that can be used to support students with grade-level material but that typically require the teacher to take on more of the academic responsibility. While the use of scaffolds supports work with grade-level material and is thus aligned with state standards, teachers should consider ways of either *removing* or encouraging students to *adopt* these scaffolds to promote independent work with grade-level material.

Examples of each of these practices in ELA are highlighted in the table on the following pages.

Instructional Accommodations

Modifications

These are practices for students not ready for standards-aligned instruction. Modifications typically result in unaligned instruction because they change topic and/or cognitive demand. Teachers should consider ways to move from using modifications toward scaffolding.

- Reduce the complexity of the questions for student response.
- Modify the rubric.
- Shorten assessment.
- Cross out options for multiple choice questions.
- Allow partial answers (asking for definition of vocabulary rather than use of word in context).
- Provide a less complex text (same topic or different topics).
- Focus on factual/literal information without analysis or extension.
- Allow students to answer verbally rather than in writing; scribe for students.
- Reduce expectations for the quality or type of engagement in speaking activities.
- Focus on building high-frequency or basic general academic vocabulary.

Scaffolds

These are practices to support student work with grade-level material. While standards-aligned, scaffolds typically result in teachers' taking the academic responsibility. Teachers should consider a way of either removing the scaffolds or supporting the students in adopting them to support independent work with grade-level material.

Scaffolds that can be adopted by students:

- Discuss reading with students. The responsibility of the conversation should shift from teacher to students over time. Eventually, students are responsible for asking and responding to questions with the teacher acting as facilitator.
- Model reading and writing and using self-regulation strategies: The goal of modeling is student adoption of the practices modeled.
- Model use of textual aids such as glossaries, vocabulary lists, and supporting graphic displays. Over time students use these independently to supplement text.
- Provide graphic organizers (summary frames, writing structure, Frayer model, Get the Gist, brain map, KWL chart, etc.). Over time the students should determine which graphic organizer to use to support understanding and adopt the practice.
- Break reading into smaller pieces or stop periodically during reading to check for understanding. This starts with teachers' breaking up the text for students with comprehension checks. Eventually, this should become a regulation strategy that the student adopts.
- Break vocabulary down by prefix, suffix, root.
- Break instruction into smaller steps.

Scaffolds the teacher can use but should remove over time.

- Complete work together. Although the student is experiencing the work with the teacher, the responsibility is not solely on the student.
- Use small groups or pairs (mixed ability). Teacher intentionally groups students together according to their ability to support one another. Eventually, students will need to be able to perform independently.
- Provide additional time.
- Share reading with students. The teacher and a student read the piece together and the teacher checks for comprehension as they go and provides information.

Instructional Accommodations

- Read text aloud in place of having students read. This is only a scaffold when it is being used to provide comprehension support for a student or group of students. Teachers do and should read aloud regularly to all students, often as a way to support vocabulary development.
- Point students toward a portion of text for the answer.
- Allow students to answer verbally rather than in writing.
- Use a portion of the text rather than the whole text.
- Restate the prompt as a sentence frame.
- Allow students to provide verbal responses before writing.
- Use fewer sources to support writing.
- Provide questions for discussion ahead of time.
- Provide definitions for vocabulary words.
- Increase exposure to vocabulary through small-group instruction.
- Use realia or manipulatives for vocabulary.

Scaffolds that are identified specifically for ELL students:

Adopt

- Use Spanish dictionary/Google Translate
- Highlight "red flag words" in questions (words to help figure out meaning).
- Give explicit instruction for before, during, and after reading strategies.
- Connect native language to English.
- Connect reading opportunities to daily living opportunities.

Remove

- Explicit instruction on skills identified as needed from assessment
- Vocabulary-building activities that include pronunciation and definition
- Peer pairing (high and low)