

2022 Addressing

Unfinished Learning

Practical, proven, content-specific resources for instructional leadership teams

Introduction	1
Lessons learned	4
Addressing unfinished learning in math	9
Addressing unfinished learning in reading comprehension	15
Addressing unfinished learning in science	23
Supporting reading foundations	30

Introduction

School systems around the country are working tirelessly to determine how to best support unfinished learning in light of unprecedented disruptions in schooling. During the 2020–21 school year, we partnered with a set of districts to do the deep work required to answer the question, “What is the best of what we know about supporting unfinished learning in each content area?”

Encompassing everything we learned that year, we created the Addressing Unfinished Learning Toolkit. Throughout the 2021–22 school year, we’ve continued to ask ourselves that question, and we learned a lot more about how to best address students’ unfinished learning. We’ve updated this toolkit to incorporate everything we’ve learned since we published the original edition in July 2021.



Our approach

In 2020, we kicked off a two-year project to support leaders and teachers in addressing unfinished learning. Drawing on our work over the previous five years as well as the current research base, we worked shoulder to shoulder with our partners to develop and test replicable models for addressing widespread unfinished learning challenges. Our team documented, tested, refined, and codified effective practices in an effort to share what we learned and scale what worked with educators and those who support them.

Based on our research and prior learning, we centered our work with leaders and teachers on the following four strategies:

- 1. Center on focus students.** Focus students are those students who need the greatest support to access the content being taught relative to their classmates. Identifying focus students can and will be a dynamic process. We believe that by centering instruction on the needs of focus students, we will increase academic achievement for all students. This principle is grounded in the research and theory underlying Universal Design for Learning¹ and Targeted Universalism,² which both assert that addressing the needs of a minority ultimately benefits everyone. Centering on focus students disrupts the “myth of the average” student; when we design for the average, we design for no one: “People learn and develop in distinctive ways, these unique patterns of behaviors are lost in our schools and businesses which have been designed around the ‘mythical average person.’ This average-size-fits-all model ignores our differences and fails at recognizing talent.”³
- 2. Prioritize content.** Prioritizing content is the process of creating flexible time in a pacing guide for teachers to meet the needs of learners by addressing the components of math instruction that prevent access to grade-level content and the critical elements of literacy instruction that interrupt comprehension (i.e., background knowledge, vocabulary, fluency, and syntax):⁴ “
“Most teachers confront the inescapable reality that they simply don’t have enough time to cover all the material adequately, particularly if students need remediation. Teachers are caught between a rock and a hard place: Slow down

¹University of Kansas; *An Equity-Based Evolution of Universal Design for Learning: Participatory Design for Intentional Inclusivity* (2018)

²Othering & Belonging Institute, University of California, Berkeley; *Targeted Universalism: Policy & Practice* (May 2019)

³Todd Rose, *The end of average: How we succeed in a world that values sameness*. (New York: Harper Collins, 2015), back cover

⁴TNTP; *Planning for Acceleration in the 2020-2021 School Year* (April 2020).

and risk lack of coverage, or speed up and sacrifice depth of learning . . . Research suggests that pacing guides intensify pressure on teachers to cover all the material specified and that teachers attempt to meet this demand in several ways . . . Breadth of coverage trumps depth for all topics . . . Although all teachers are pressed for time, teachers with predominantly low-performing and minority students are far more likely to drop cognitively demanding activities than are other teachers. The former feel more stress and are more likely to focus on traditional forms of teacher-centered instruction.”⁵

3. **Utilize data practices.** In any year, it is essential for educators to implement data practices that reveal what supports they need to provide to whom in order to ensure that all students can access grade-level content. However, due to the effects of disrupted schooling, it is more important than ever that teachers have both a precise understanding of what their students’ needs are, how to identify opportunities to address unfinished learning, and—somewhat paradoxically—the ability to minimize time spent on assessment and maximize the direct instructional time students need to fill in those gaps. It is essential to ensure that leaders and teachers understand how to simplify and target assessments so they reveal actionable information that can be used to provide just-in-time supports to students.⁶
4. **Support teacher practice with professional learning.** Teachers need guidance from their school and district leaders on where and how to allocate their time among the broad array of challenges they will face in their classrooms, how to prioritize strategies that will lead to the greatest impact, and how to translate those strategies to everyday practice.⁷

We leveraged rapid cycles of improvement—identifying a challenge using data, planning a short intervention, measuring if it worked, and adjusting quickly (e.g., using short data cycles to improve student engagement and assignment completion)—which allowed us to adjust our core instruction implementation support based on our measurements of change in leader practice, teacher practice, and student outcomes. These cycles proved invaluable as we worked with partners to serve students who experienced a wide array of schooling scenarios during the 2019–2020 and 2020–2021 school years and who, therefore, had great variance in their learning needs.

⁵Jane L. David, “What Research Says about . . . / Pacing Guides,” ASCD (October 1, 2008), <https://www.ascd.org/el/articles/pacing-guides>.

⁶Achievement Network, *New Guidance: 3 Principles for Assessments During Instructional Recovery and Beyond* (May 2020); The 74 Million; Klompus & Odemwingie: *Time With Students Is More Precious Than Ever. A Smart Approach to Testing Can Help Educators Make the Most of It* (January 2021)

⁷Achievement Network; *Aligning professional learning to instructional priorities*; TNTP; *Planning for Acceleration in the 2020–2021 School Year* (April 2020); EdWeek; *Leader to Learn From: How This District Leader Transformed Teacher PD* (February 2021)



Lessons learned

Lesson one

Tier 1 instruction is the primary lever for accelerating learning outcomes.

The most impactful decisions in teaching and learning—particularly the ones that matter most when it comes to unfinished learning—live in the thousands of real-time decisions teachers make every day. Moving forward with grade-level content in Tier 1 instruction—the whole-class instruction students receive—presents the best opportunity to accelerate learning. Teachers need extra planning support to make Tier 1 instruction as strong as possible in the core academic subjects, and this support must be contextualized within their subject, grade level, and curriculum.

Lesson two

Addressing unfinished learning while moving forward requires teachers to spend *more* time on priority units, not less.

In our work with partners we found that, in most cases, the moves that supported more learning required teachers to *slow down*. Teachers need to be aware of where their students need additional support and when they can defer teaching non-prioritized content (i.e., content that students will cover in a later grade or where a “just-in-time” support that offers the necessary prerequisite skills/knowledge could be provided at a later time in favor of dedicating the maximum amount of instructional time to the major work of the grade.⁸

Lesson three

The way to address unfinished learning is content-specific—in other words, it depends on what you are trying to teach.

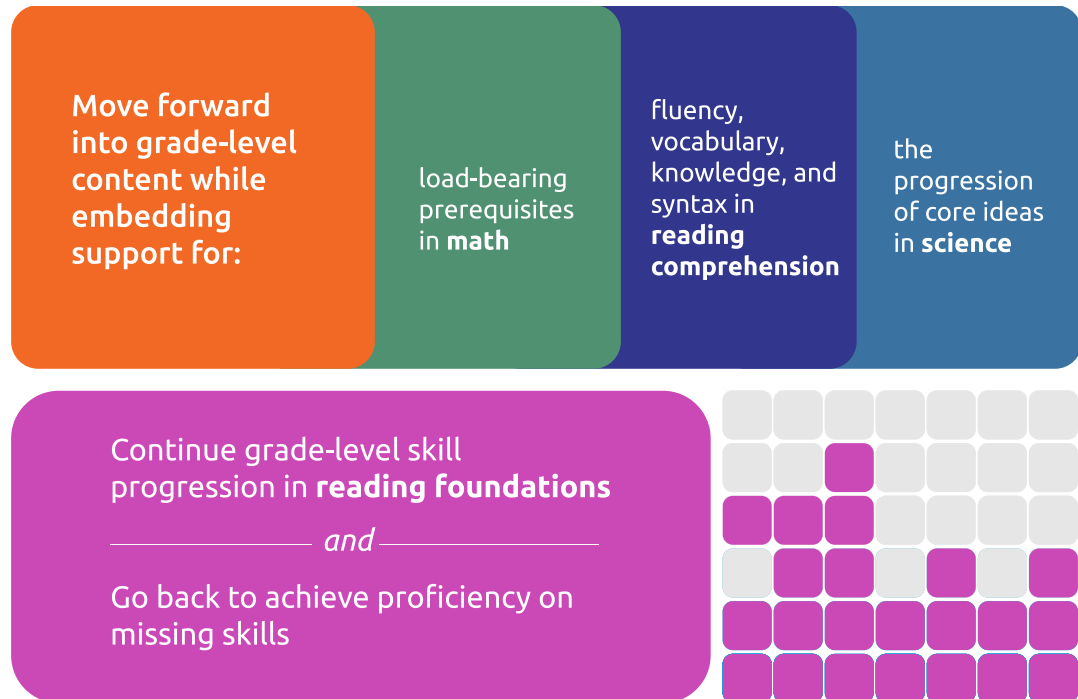
Helping children learn how to decode words is not the same as helping them learn what happens to a cold can of soda on a hot day. Searching for a single approach or headline skips over context that should shape instructional decisions. Effectively supporting unfinished learning through Tier 1 instruction requires a nuanced understanding of both priority content as well as how children learn that particular content. Educators must understand the prerequisite skills and knowledge students need to be able to access grade-level content, and what skills and knowledge can be taught through, or alongside, grade-level content.


Lesson four

Leaders need support both helping teachers develop new skills and setting up a strong academic strategy.

Teachers need strategic and explicit guidance and support from leadership teams on how to allocate their time among the broad array of challenges they will face, how to prioritize strategies that will lead to the greatest impact, and how to translate those strategies to everyday practice.⁹ Leaders will need to articulate and implement a coherent, targeted approach to assessment; offer clear guidance about priority content; and provide the professional learning teachers need to meet the challenges of this moment.

The way to address unfinished learning is content specific.





Effectively supporting unfinished learning through Tier 1 instruction requires a nuanced understanding of both priority content as well as how children learn that particular content. Educators must understand the prerequisite skills and knowledge students need to be able to access grade-level content, and what skills and knowledge can be taught through, or alongside, grade-level content.

Math





In mathematics, unfinished learning is better supported when embedded within the relevant grade-level units.

Too often math is treated like a linear sequence of learning or a checklist of skills. Our [conversations with math experts and practitioners](#) led us to think about teaching math like helping students build a house: Some walls are load-bearing and need to be strong before moving up a level; other walls can be useful for connections but should not be considered prerequisites.

Grounding principles

We know . . .	So we will . . .
A deep exploration of core content is necessary for building students' conceptual understanding.	Adjust scope and sequence for each grade to ensure time to access prioritized grade-level content.
Conceptual understanding is more beneficial to students than “tricks” for answer-getting.	Prioritize conceptual development tasks within lessons.
Coherence is essential, year to year and lesson to lesson.	Prioritize collaborative unit study to build teachers' content knowledge and understanding of coherence.
All students have the ability to access grade-level material.	Collect data to inform instructional practices that will provide the bridge students need to address unfinished learning.

Guidelines

Actions

Planning stage: Prioritizing content

Year-long guidance

- Ensure that teachers have a strong understanding of the arc of the year.
- Set clear purpose, function, and use expectations around the arc of the year.
- Prioritize content to create feasible time for addressing unfinished learning.
- Identify the number of available flex days, if any.
- Provide guidance on the strategic placement of flex days with clear expectations on planning for and using these days.
- Establish accountability points (e.g., breaks, interims, unit launches) to realign to the arc of learning.

Unit guidance

- Understand the story of the unit/module.
- Identify the load-bearing walls for the key work of the unit.
- Identify pre-assessment items.

Resources

- [Grounding principles and criteria for success](#)
- [Prioritizing math content](#)
- [Template for prioritizing math content](#)
- [Priority content in practice: 4th-grade math](#)
 - A [video walkthrough](#) of our 4th-grade example
 - The [slides](#) we used in our walkthrough
- [High-impact strategies for assessment](#)
- Student Achievement Partners' [priority content guidance](#)
- ANet's [Important Prerequisite Math Standards](#)
- Achieve the Core's [Coherence Map](#)

Planning stage: Unit/Module

- Understand the story of the unit/module.
- Develop the concept(s) and the visual model/representation(s) of the unit/module.
- Determine the problem-solving strategies used in the unit/module.
- Return to the assessments to develop the visual model/representation(s) and strategies that students may use for each assessment question.

Unfinished learning considerations

- Review student work from the pre-assessment. This reveals which load-bearing concepts and strategies students know and which will need support in order for students to be able to access the grade-level content.
- If students need support to access the grade-level content, plan to use the newly created time to support access via a bridge task, a mini lesson, or a full lesson.
- Understand the problem solving strategies used within the unit/module.

- [Unit internalization guidance and worksheet](#)
- [PLC agenda template](#)

Planning stage: Lesson

- Articulate the goal of the lesson.
- Do the math of the lesson and formative assessments.
- Determine the learning steps to build toward the learning goal.
- Determine the scaffolding needed to promote access to grade-level learning.

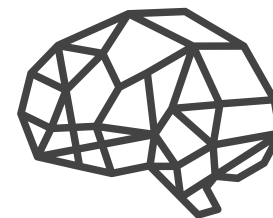
Unfinished learning considerations

- Leverage pre-unit assessment data to plan how to use the allotted extra time to support unfinished learning.

- [Lesson preparation guidance and worksheet](#)



Reading Comprehension



Unfinished learning in reading comprehension is best supported when embedded within complex, grade-level text.

Building comprehension flows from practice and experience working with grade-level complex text. Skills alone (e.g., identifying the main idea, summarizing) will not build strength in comprehension; to get better at independently comprehending complex texts, students need to engage with complex texts *with support*. To address unfinished learning in comprehension, teachers need to know the text and their students, and they will need to make strategic decisions about how to use their time.

a b c d e f g h i j k l m n o p q r s t u v w x y z

Within a given text, teachers need to identify the complex features of the text that need support. In particular, they need to attend to supporting background knowledge, vocabulary, syntax, and fluency.

- Reading does not flow from skill alone; **background knowledge** matters to our ability to understand what we are reading. The famous [baseball study](#) points to the importance of background knowledge.¹⁰
- **Vocabulary** is critical to reading comprehension. According to [research](#), "knowledge of individual word meanings accounts for as much as 50–60% of the variance in reading comprehension."¹¹
- Readers need to be ready to make a series of mental moves when they encounter a sentence they do not understand. Skilled readers make those moves by knowing how to navigate **syntax**, essentially the grammar of language.
- The most frequent performance breakdowns for students struggling with reading generally stem from inadequate practice with foundational reading or scarce opportunities to gain **fluency** with grade-level texts, both relatively straightforward to reinforce.¹²

High-quality instructional materials support these choices but teachers need opportunities, especially before each unit, to do thoughtful planning to identify key moments, as well as a wide range of data (including observation of conversation, written thoughts, and understanding of oral reading fluency) to isolate the key support needs. To provide these supports, teachers need to slow down instruction, likely covering fewer units in greater depth.

a b c d e f g h i j k l m n o p q r s t u v w x y z

¹⁰Leslie, Lauren & Recht, Donna R. Donna R., "Effect of Prior Knowledge on Good and Poor Readers' Memory of Text." *Journal of Educational Psychology* 80(1):16-20 (1988, March).

¹¹Stahl & Nagy (2006) as cited in Conway, B., "Building Knowledge Starts With Vocabulary," Pentucket Regional School District - Teaching and Learning Blog, last modified April 10, 2021.

¹²Wexler, J., Vaughn, S., Edmonds, M., & Reutebuch, C. K., "A synthesis of fluency interventions for secondary struggling readers." US National Library of Medicine National Institutes of Health (2008, June).

Grounding principles

We know . . .	So we will . . .
Students need more time on texts that have more complex features.	Adjust pacing guides to ensure time to engage in additional fluency, vocabulary, and syntax work, and the background knowledge building necessary to access these complex texts.
Students need to dive deeply into a text as opposed to trying to “cover” it all.	Prioritize units/modules to create space in the pacing guide for students to do this work.
The knowledge story must remain intact because language comprehension cannot be taught separately from content.	Make strategic decisions within and across grade levels when prioritizing units/modules.
Text complexity should increase as the year progresses according to the guidelines provided by the standards.	Ensure that the sequence of units/modules over the course of the year results in students being able to access texts moving toward the higher end of the grade-level band.
Remediating or going backward will not serve our students well.	Emphasize what students <i>can</i> do rather than what they can’t do.

a b c d e f g h i j k l m n o p q r s t u v w x y z

Guidelines

Actions	Resources
<p>Planning stage: Prioritizing content</p> <p>Part I: Seat time vs. curriculum material</p> <ul style="list-style-type: none">Identify the pacing of each module vs. the actual seat time available. <p>Part II: Curriculum audit</p> <ul style="list-style-type: none">Review the publisher’s guidance to determine if module 1 is required to establish the learning routines and procedures necessary in future modules.Review the knowledge story for each module.Review the texts for each module.Review questions, tasks, and assessments.Examine the distribution of modes of writing across modules.Prioritize modules with scientific or historical texts if there is no other dedicated time.Determine whether future grade levels depend on the knowledge built in a particular module in this grade level.Identify the modules that students and teachers have been particularly invested in.	<ul style="list-style-type: none">Core beliefs and criteria for successTemplate for prioritizing content in ELA

a b c d e f g h i j k l m n o p q r s t u v w x y z

- Avoid omitting modules that include a standard only addressed once during the school year.

Part III: Aligning pacing to meet the needs of students

- Make strategic decisions about which modules to prioritize and which to compress or omit.

a b c d e f g h i j k l m n o p q r s t u v w x y z

Planning stage: Unit/Module

- Orient to the unit/module at a high level.
- Orient to the assessments at a high level.
- Select an anchor text and engage in a text chat with your colleagues.
- Determine which pedagogical strategies are needed to promote access to grade-level learning.

Unfinished learning considerations

- Determine which of the four critical elements of literacy instruction (i.e., background knowledge, fluency, vocabulary, syntax) can be planned for during modul/unit internalization and which ones will be planned for during lesson preparation.

- [Unit/module internalization guidance and worksheet](#)
- [Background Knowledge Guidance](#)
- [Fluency Guidance](#)
- [Vocabulary Guidance](#)
- [Syntax Guidance](#)

a b c d e f g h i j k l m n o p q r s t u v w x y z

Planning stage: Lesson

- Read and know the text well.
- Start with the end goals in mind.
- Uncover misconceptions and determine necessary scaffolding.
- Establish how you will check for understanding.
- Analyze the learning activities.
- Determine the timeline.

Unfinished learning considerations

- Determine which of the four critical elements of literacy instruction (i.e., background knowledge, fluency, vocabulary, syntax) can be planned for during modul/unit internalization and which ones will be planned for during lesson preparation.

- [ELA Habits of Planning](#)
- [Background Knowledge Guidance](#)
- [Fluency Guidance](#)
- [Vocabulary Guidance](#)
- [Syntax Guidance](#)

a b c d e f g h i j k l m n o p q r s t u v w x y z

Science



Science is all about discovering and pursuing unfinished learning.



Great science instruction and scientific thinking anchors to questions, not infographics; it explores the phenomena of our world and empowers students to ask and answer new questions. Instead of being told “this is how the water cycle works,” great science instruction helps students construct their own understanding of how the water cycle works by engaging in the phenomena of our world—for example, a hail storm or a hurricane or the condensation on a cold can of soda on a hot day. It starts with questions like, “What is going on there? What do I know that can help me explain it? What do I need to know more about and how do I find that out?”; and it ends with students exploring the evidence from different interactions in order to construct a model that explains the answer.

The progression of disciplinary core ideas in science deepens over time, but engaging in science does not have the same kind of load-bearing walls as mathematics—missing the earthquake unit does not prevent a student from launching into the digestion unit. However, depending on the design of the unit, teachers may need to reinforce some core ideas so that students can engage in key activities. Across topics, engaging in authentic scientific thinking is a muscle that develops with practice. Students will come into a unit with a range of strength in this scientific thinking, and teachers need to be ready to help students find both the questions *and* the path to the answer.

When we understand this vision of phenomena-driven science instruction, it is easy to see that the way to address unfinished learning in science is simply to teach science and teach it well.

Grounding principles

We know ...	So we will ...
Effective science instruction requires consistent, dedicated instructional time.	Ensure K–8 students get daily instructional time dedicated to science.
Authentic connections with content that emphasize personal experience and/or community relevance are important.	Prioritize anchoring and investigating phenomena that are culturally relevant, connected to student experience, and applicable to their lives.
Science and engineering practices (SEPs) and crosscutting concepts (CCCs) are just as important to the content as the disciplinary core ideas (three-dimensionality).	Engage in three-dimensional instruction that requires students to engage in the SEPs and CCCs in order to access key science ideas.
Standards should be prioritized in service of coherence and curricular story lines (phenomena-based instruction).	Provide professional learning opportunities that highlight the coherent path to deepening student understanding of phenomena over time.

Guidelines

Actions	Resources
<p data-bbox="243 480 898 521">Planning stage: Prioritizing content</p> <ul data-bbox="243 570 1178 1032" style="list-style-type: none"><li data-bbox="243 570 1079 602">• Schedule daily science instructional time for K–12 students.<li data-bbox="243 618 1178 1032">• Audit and adjust curricular materials to ensure:<ul data-bbox="289 667 1178 1032" style="list-style-type: none"><li data-bbox="289 667 1058 797">• materials support students in figuring out observable, relevant phenomena rather than learning about science topics;<li data-bbox="289 813 1066 894">• the science ideas support students’ explanation of the phenomena; and<li data-bbox="289 911 1178 1032">• the incorporated phenomena connect to students’ personal experiences, are culturally and/or community relevant, and are considered through an equity lens.	<ul data-bbox="1346 480 1835 894" style="list-style-type: none"><li data-bbox="1346 480 1835 659">• A video walkthrough of how to prioritize content in middle school life science, and the slides we used in our walkthrough<li data-bbox="1346 675 1835 756">• Our set of high-impact strategies for assessment<li data-bbox="1346 773 1835 894">• NSTA’s list of Next Generation Science Standards by topic and disciplinary core idea

Planning stage: Unit/Module

- Identify the anchoring phenomena of the unit.
- Determine the progression of science ideas that support students in explaining the phenomena.
- Make phenomena observable.
- Elicit student thinking to determine current understanding.
- Integrate tasks within units to address any gaps in understanding.
- Prioritize tasks where students engage in scientific practice.

Unfinished learning considerations

- Identify the prerequisite science ideas students need to access the grade-level content introduced in the unit.
- Listen for those ideas as students make predictions and initial explanations of the anchoring phenomena.
- When tasks need to be integrated to address foundational ideas, strive to maintain the coherence of the unit by supporting students in making explicit connections between the science ideas learned and the anchoring phenomena.

Planning stage: Lesson

- Identify the investigative phenomena of the lesson.
- Summarize the key science idea(s) students will learn.
- Determine how activities support understanding of key science idea(s).
- Determine the instructional strategies that support student engagement in scientific practice and reasoning.
- Identify formal and informal opportunities to assess student progress toward key science ideas.

Unfinished learning considerations

- Consider and attend to barriers to access, such as unfamiliar technical scientific vocabulary or lack of experience with a specific scientific practice.
- Identify strategies to support students in making sense of evidence gathered during integrated tasks and connect that learning back to the lesson's learning goal.
- Use student discussions, questions, explanations, and/or models throughout the lesson to determine whether students need additional support around foundational prerequisite ideas.

More science resources

- The [Solidify workbook](#) integrates some of the best available science instructional support tools and resources into a practical, self-paced series for science leaders seeking to deepen their understanding of the instructional shifts characterizing excellent science teaching and learning.
- The [Science Classroom Observation Tool](#) provides a set of indicators describing the instructional content, teacher actions, and student outcomes indicative of excellent science teaching and learning. Best used in combination with Solidify.
- [OpenSciEd](#) publishes open-source, research-based instructional materials.
- The [STEM Teaching Tools website](#) includes resources authored and reviewed by teachers and researchers.

Supporting reading foundations

We are currently engaged in a multi-year learning pilot to research and create resources for strengthening early literacy instruction. Our resources for supporting reading foundations include guidance and tools to help leaders and teachers reimagine how they center early literacy instruction to accelerate students' development of foundational reading skills. Explore our resources below and [subscribe to our mailing list](#) to receive updates on our early literacy work.

[Addressing unfinished learning guidance](#)

This blog post and video walk through how to support unfinished learning in foundational reading skills.

[Essential Practices in Early Literacy](#)

These five essential practices help leaders reimagine how to lay the foundation for developing strong readers.

[System diagnostic](#)

This document is designed to support leaders in reflecting on how the essential practices are currently implemented in their systems and to measure their growth over time.

[Observation tool](#)

This tool outlines a set of indicators describing the instructional content, teacher actions, and student engagement indicative of excellent teaching and learning of reading foundational skills.

[Coaching template](#)

This template can be used as a note catcher for coaches as they observe classroom instruction, identify trends, and prepare for next steps in coaching and training.

[Coaching guide](#)

Aligned with the Foundational Skills Classroom Observation Tool indicators, this guide contains coaching look-fors and guiding questions to support coaches as they observe classroom instruction, identify trends, and prepare for next steps in coaching and training.

a b c d e f g h i j k l m n o p q r s t u v w x y z

