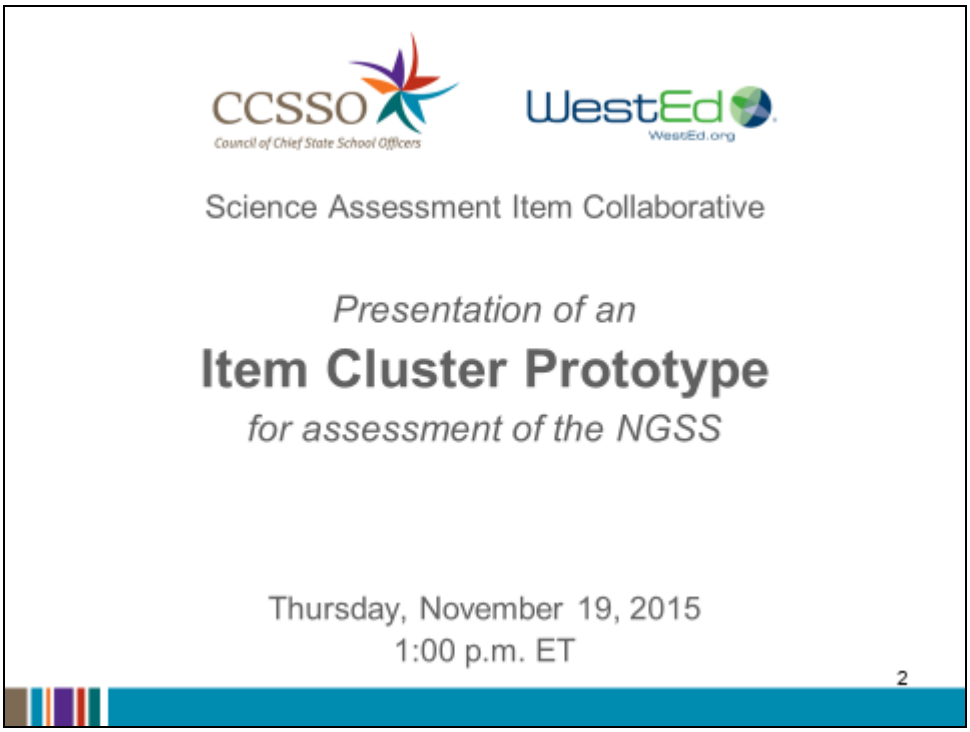
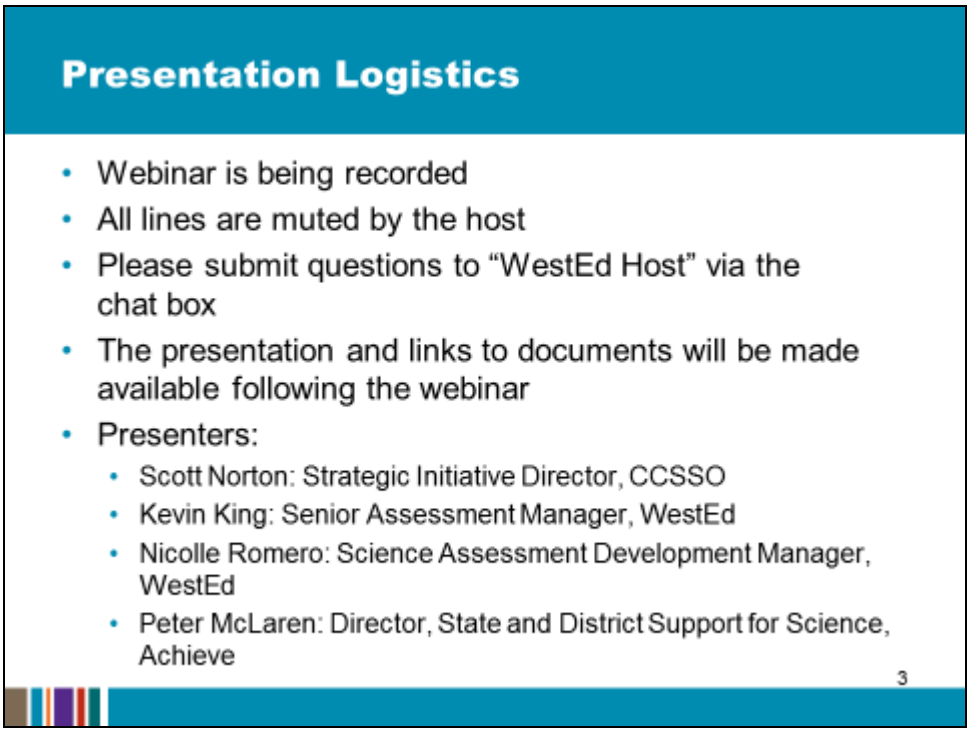
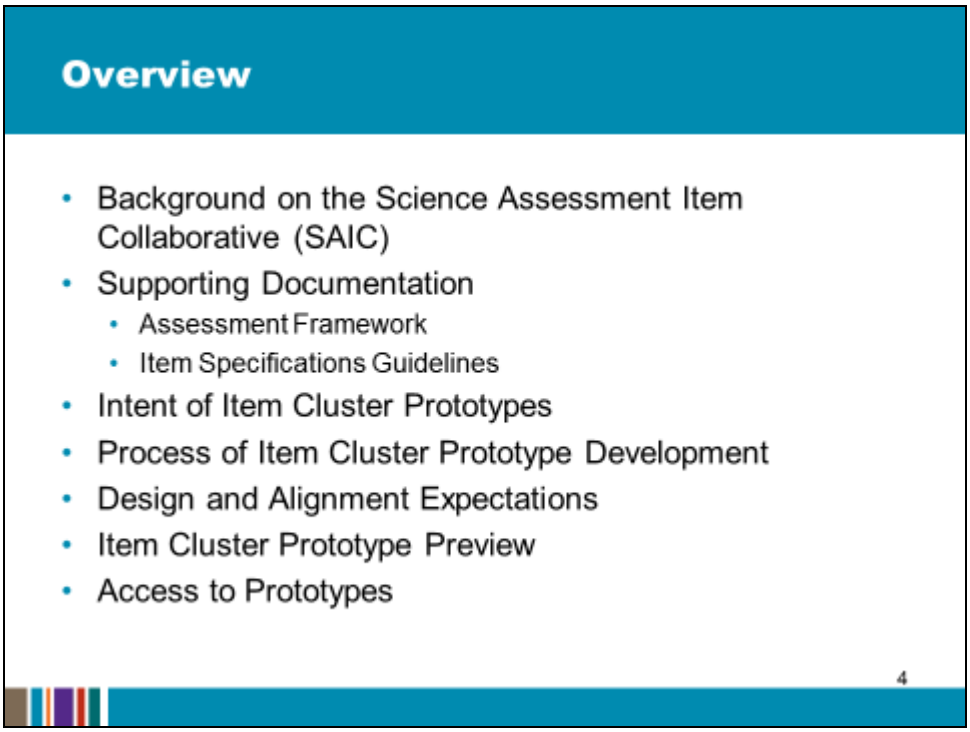


Kevin King: Good morning and good afternoon. On behalf of CCSSO and WestEd, we are excited today to present an item cluster prototype for assessment of the NGSS. My name is Kevin King. I'm from WestEd, and I will be your host today and presenting some of the topics. By all the beeps and the list of the chat participants, it is exciting to see the number of folks who are interested in this topic. As you will hear us discuss today, we are excited to advance this discussion related to measurement of the NGSS.



First, I'd like to briefly cover some logistics for our webinar today. We want you to be aware that the webinar is being recorded, and it will be made available shortly after the presentation, probably in a day or two. We'll talk about that at the end of our presentation. All lines are muted by the host. As you can imagine, and for most of us who've been on these WebExes, we need to keep the background noise down. If you have questions, please submit them to WestEd Host. It's in the chat box, way up at the top, via that chat box, and we will do our best to address those questions as we go. I will warn you in advance that we're really in presentation today because we have a lot to get through in our short hour, and we want to honor that time.

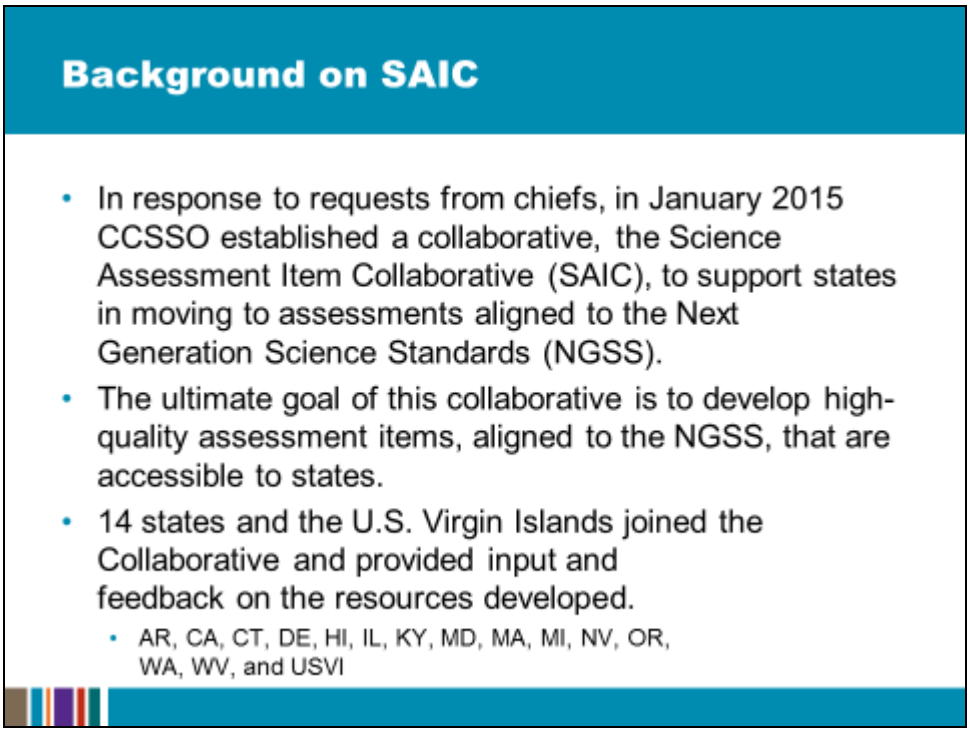
The presentation and links to documents that will be discussed will be made available following the webinar, both through the CCSSO website and the CSAI website. Then, finally, our presenters for today: Scott Norton, the Strategic Initiative Director for Standards, Accessibility, and Accountability at CCSSO is with us; myself, Senior Assessment Manager at WestEd; Nicolle Romero, Science Assessment Development Manager at WestEd; and Peter McLaren, Director of State and District Support for Science at Achieve.



Now we'll go over an overview of the topics we'll cover today. Then we'll get into some backgrounds on the collaborative. First, we're going to talk about background of the collaborative to bring everybody up to speed on the call and the process of the development of resources that the collaborative has done. We're going to look at an overview of some of the supporting documentation and how it is related to the item cluster prototype. We're going to talk about the design and structure of the prototype documentation itself. Then, finally, at the end, we're going to let you know how you can access the materials.

We will not be walking, step by step, through the full item cluster. I just want you to know that upfront, as we feel that's best for you to do once you're able to access it online. What we do want to do today is to set the stage and craft a best informed way to process the information because it's not just an item with a single alignment. There's a lot of features to it, and that's what we tee up today, as well as some of the background.

With that, I'm happy to turn it over to Scott Norton from CCSSO, who's going to talk about the collaborative itself and how we've gotten to the point we are. Scott, I turn it to you.

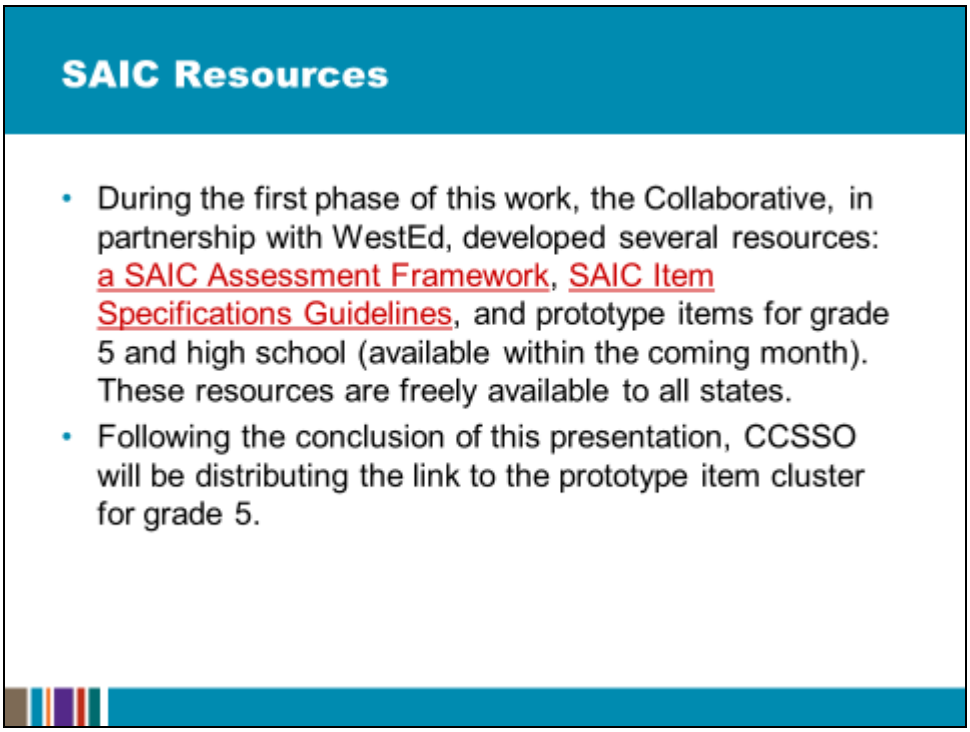


Scott Norton: Hey, everybody. It's Scott from CCSSO. Thanks for the intro, Kevin. I'm going to spend just a couple of minutes talking about the background and even look into the future just a little bit. First, I do want to mention who was invited to the call. We're not doing a rollcall, but we invited, of course, the CCSSO and WestEd folks. They're on. We invited the phase one—we'll talk about that—participating states. We invited SCASS staff members. Some of you are familiar with that, a part of CCSSO's work. We also invited assessment directors and welcomed them to invite their vendors or partners, if they wanted to. It's an open call, and I just wanted to acknowledge who was on.

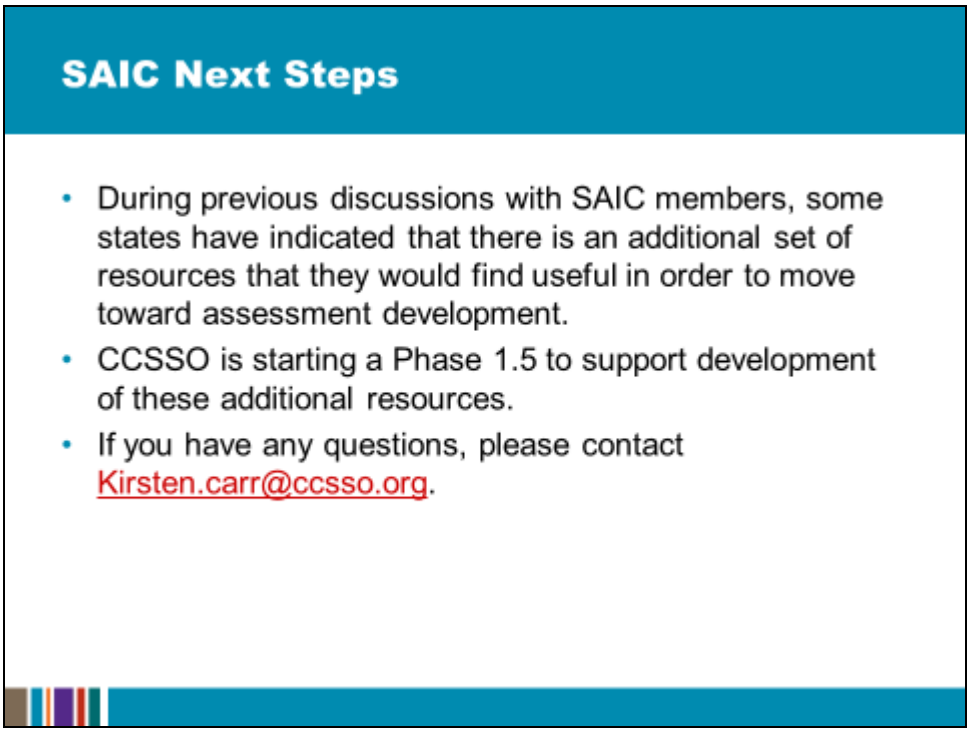
A little while back—I really credit the state chiefs for this work. They had a vision that states could work together to develop science items, and particularly Terry Holiday, then the Commissioner in Kentucky, charged CCSSO with figuring out how to do that. The ultimate goal is that, to develop high-quality assessment items aligned to the Next Generation Science Standards that could be accessible to states. Of course, there are steps to get there. You can't just jump right into that, as all of you well know.

We put out a call, and 14 states stepped up, plus the Virgin Islands, paid their own money to form the collaborative. They have provided input and feedback on the resources that were developed. You can see the list of states there at the bottom of the screen, and we really applaud their work. We'll just mention, I said,

"collaborative." This is not consortium like the others for the obvious differences that we'll maybe talk about those a little bit more, but it is a collaborative. It's a grouping of states that have come together for a common purpose.



To get there, CCSSO hired WestEd, and they've been the contractor for this work and have done a great job, and we appreciate all their hard work. We hired WestEd to get the thing going, and, ultimately, three documents were developed: the assessments framework, the assessment item specifications guidelines, and then the prototype items that you'll be hearing about today. We'll get all those up on our website and also the other website that Kevin mentioned.

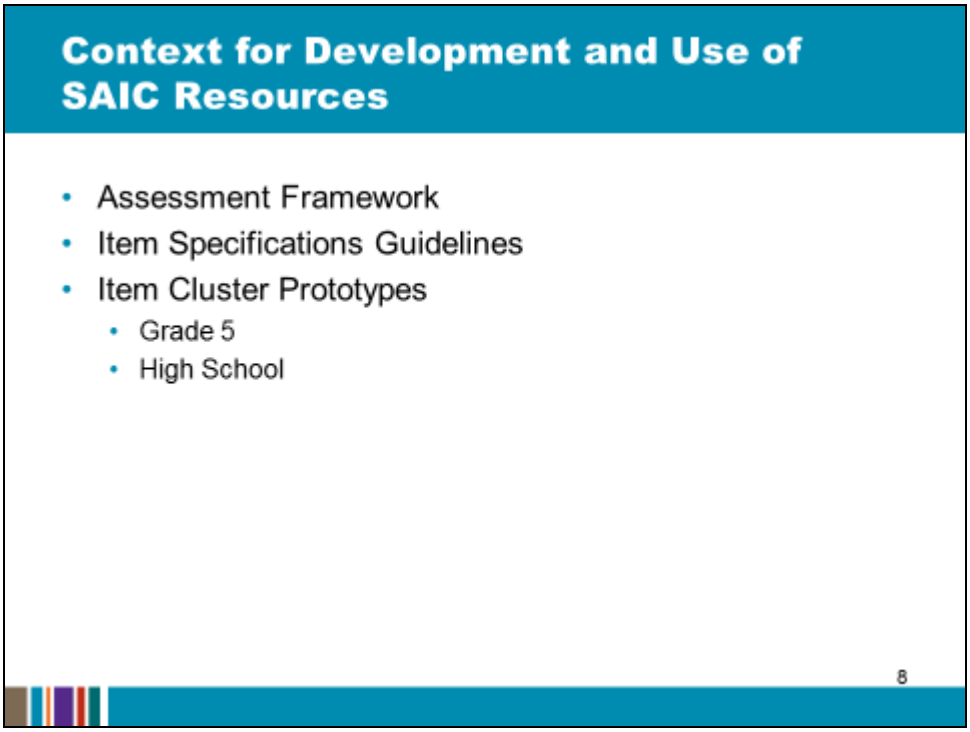


We will say, to this point, those documents have been developed. We think it's really a very important step for states to get to that point. These materials are going to be freely accessible to anyone who wants to use them. Having said that, we do know this is just the first big step. It is a big step, but it's the first step, and things could change along the way. We know it's more the beginning of the process than the end, and iterations will happen. In state-led work, that happens. It evolves, and I think we're all familiar with that.

We will plan, or we are planning, to take the next step, so just a little bit of background. Phase one was the development of those documents I mentioned. Phase two would be item development, so 1.5 means we think there's a little bit more work to be done. A few states have expressed interest. That is an open call if other states would like to participate. You can email Kirsten Carr, whose name is right here, Kirsten.carr@CCSSO.org, and we believe we'll be kicking off that phase point one work fairly soon. That would be followed, I would say, by phase two work. That would be item development. We haven't talked much about that yet, so I'll hold off on that, but, for now, this is where we are.

I just want to mention one more thing, and you saw it at the beginning. We also have Peter McLaren from Achieve on the line. Many of you know Peter, who was formerly Rhode Island, the good work he did there. He's very familiar to you. Peter has agreed

to be the Science SCASS Supervisor. I think a lot of you know that the former Science SCASS Advisor, I should say, Steven Pruitt, has moved on to be the Commissioner in Kentucky, so Peter has stepped in to do that. He's also worked on this project through Achieve. Peter's on. We'd love to have him come in a little bit before we move on.



Peter McLaren: Thanks, Scott. I appreciate it. I'm really excited. I'm looking at the participant list. I see a lot of old friends that I've worked with through this Council of State Science Supervisors, and certainly through the SCASS. To let you know where we are with this project, Achieve is serving in the role of quality control. The science team here at Achieve has done a lot of work in looking at these resources, but I want to just go back to the initial slides, not to change the slides, but talk about what the subject was of the slide.

I want to really just start off by celebrating the work of the states. As Scott was saying, this was a state-generated project to be able to look at how NGSS-aligned items around summative assessments could be developed. It was hard work. It is hard work. It's still ongoing. The collaboration of the states, the input, their patience, their time, their energy, along with the efforts of CCSSO and WestEd in developing what we are going to be talking about today, is an incredible step forward. I guess what we really

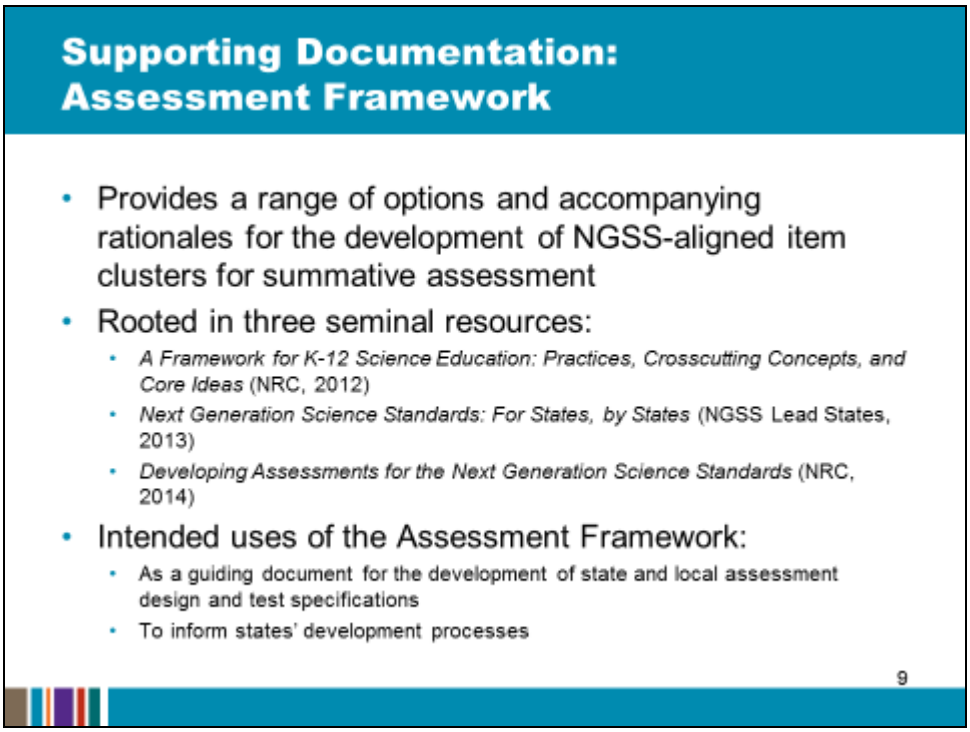
want to be able to say there, that this is a step forward, but it is not the final step. This is our best thinking as we move forward.

Let's just look at the assessment framework, for example, just to talk a little bit about that. The three major documents that really influenced that design of the assessment framework, obviously, the NRC framework, the NGSS standards, and the Board on Testing and Assessment development assessments for the next-generation science standards. Those three documents were incredibly influential behind those things. We want to make sure that when we talk about this assessment framework that it's part and parcel with the item specification guidelines. You need to have both of those together to be able to make some sense out of where we're going with the prototypes.

Just to close, if I could, what we really want to be able to do is really concentrate on the fact that states are coming together and putting their best thinking forward, along with a thought partner designer with WestEd, to be able to make some firsthand progressions into the challenging aspect of three-dimensional assessment. I'm really proud of the work that we've all done, but I also know that we have our sleeves rolled up, and we're going to do more good work. We've got a lot of people that are involved with this, and, together, I think that we're going to be able to really look at this be able to make some great progress together.

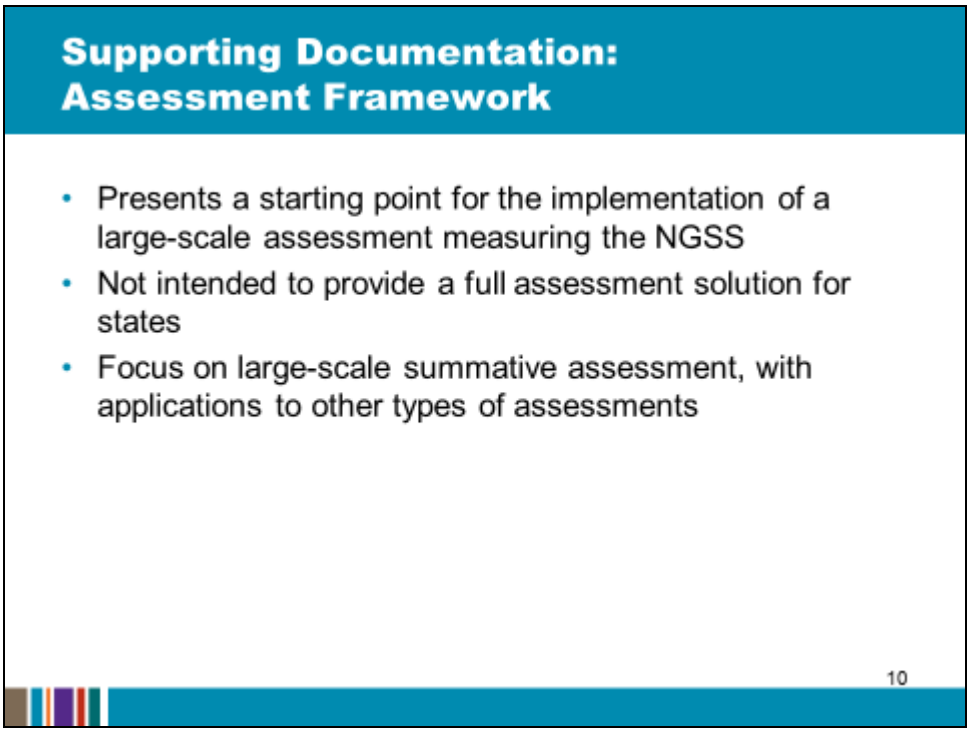
With that, I want to turn it back over to Kevin. He's already advanced the slide. He's going to talk a little bit more in detail about the assessment framework, but, again, I just want to say how proud we are to be part of this work, and, again, working with states towards this project.

Kevin King: Excellent. Thank you, Peter, for those introductory remarks. To piggyback on what Peter said, I don't know if the best analogy is a marathon or the iron man. I never get to anybody midway through that race and think—do you not celebrate that they just ran 13 or 14 miles?—but you remind them that there's some uphills and some more miles ahead of them. That's really where I see we are at with this work, and what I think I heard, and I hope I heard, from Peter is that there's been a lot of good thinking involved in this. Frankly, I really get excited that we see the materials. We are privileged to present these materials, but we are privileged to have worked side by side with state individuals to collaborate and to develop them, and that's what we're really seeing today.

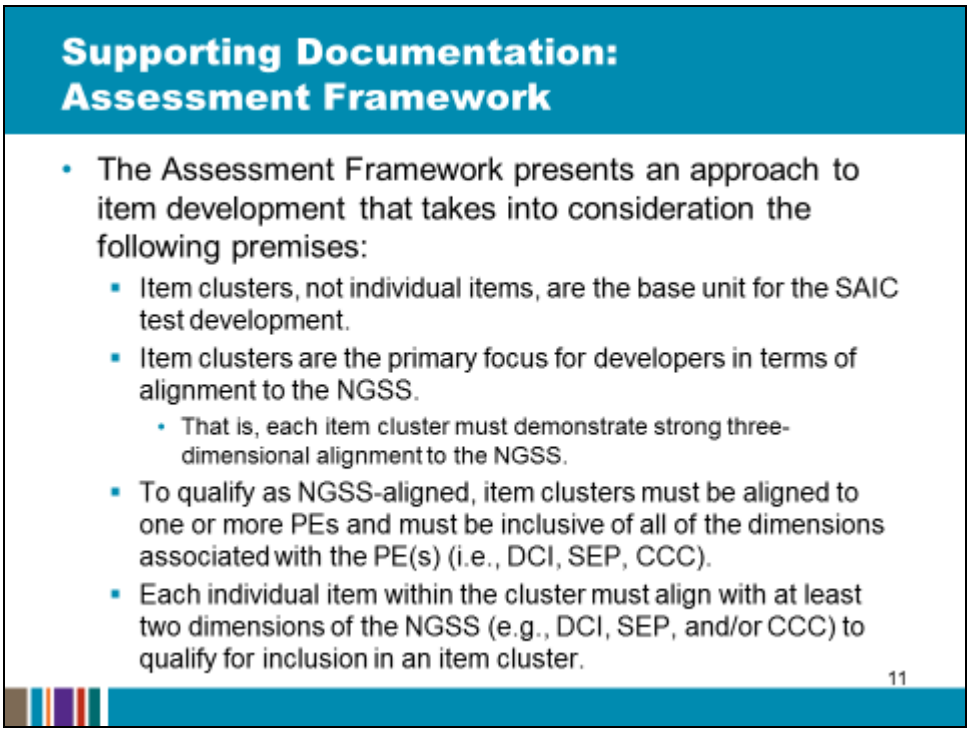


We wanted to start off with—and Peter went there already—looking at, one, these seminal resources for folks in the NGSS world and community. These really are the seminal resources that we want to keep going—that we go back to, go back to, and go back to, just as in the design of next-gen standards. Right? They are an implementation, or an embodiment, my word, of the K-12 framework.

I see the prototype that we're going to be talking about today as an embodiment of the assessment framework. We had to be careful with our language. Where the states came together and said, "Well, this is what we value. This is what we want to present." Then what will that look like? The "what will that look like?" is the prototype that we're going to present to you today, emphasis, obviously, being on it is a prototype to advance the conversation. We are very proud of it. We are confident in it, but we also know that it is a model to inform future work. Frankly, the framework and the prototype itself were designed with the intent—Scott mentioned the collaborative versus a consortium. They were designed with the intent that it would be great if folks out there took them full-bore and moved on with them, but, in the same sense, we know that states all sit in different situations. The intent is it's for them to take parts of them, and for the documentation, the framework, and the prototype to be guiding documentation as the states move forward in their local assessment design and test specifications.



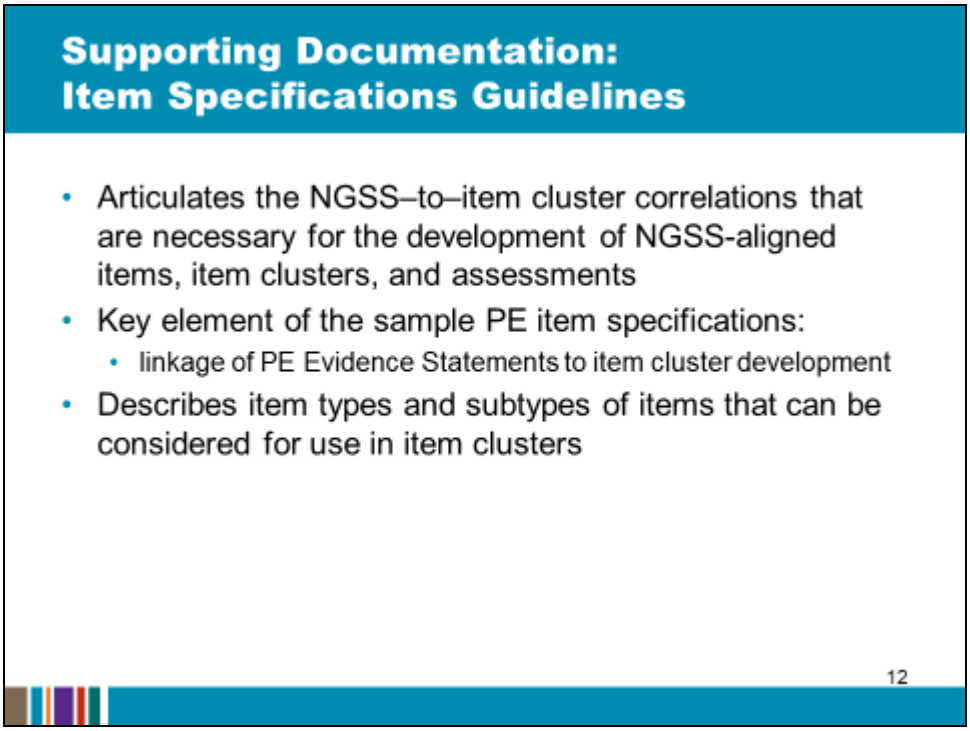
The assessment framework itself presents a starting point for the implementation of large-scale assessment measuring the NGSS. You'll hear this a lot. The collaborative was committed to focusing on large-scale assessment. It's not intended to provide a full assessment solution for the states. We know that the those reports mapped-out the breadth from classroom up to summative accountability assessments and what should be addressed. The states felt, to advance the conversation, that they had to spend some time focusing on large-scale summative assessment. That does not mean at all that the other aspects of a full assessment system are being negated. This discussion here is just on the one piece, the one leg of the stool, if you'll have it.



The assessment framework presents an approach to item development that takes into consideration the following premises. This is significant when you evaluate the prototype for its utility in measuring the NGSS. We're well aware that everybody's going to come to looking at it to see what you think is most appropriate, but the collaborative's focus was really to be grounded in the framework itself and what the framework said we should attempt to develop and to work on. That really is our backdrop, and we've put in front matter and appendices in the prototype to remind folks that those were some of the foundational premises, again, up for debate and discussion in the community, whether those were on target or not.

Some key premises that we outline here, there's the concept of item clusters, not individual items, are the base unit for NGSS test development. The later bullets get at this, that that's how we really can get at a true NGSS alignment. Item clusters are the primary focus for developers in terms of alignment. That is that each item cluster must demonstrate strong three-dimensional alignment to the NGSS. To qualify as NGSS-aligned, item clusters must be aligned to one or more performance expectations and must be inclusive of all the dimensions associated with those performance expectations. That's the disciplinary core ideas, the crosscutting concepts, and the science and engineering practices.

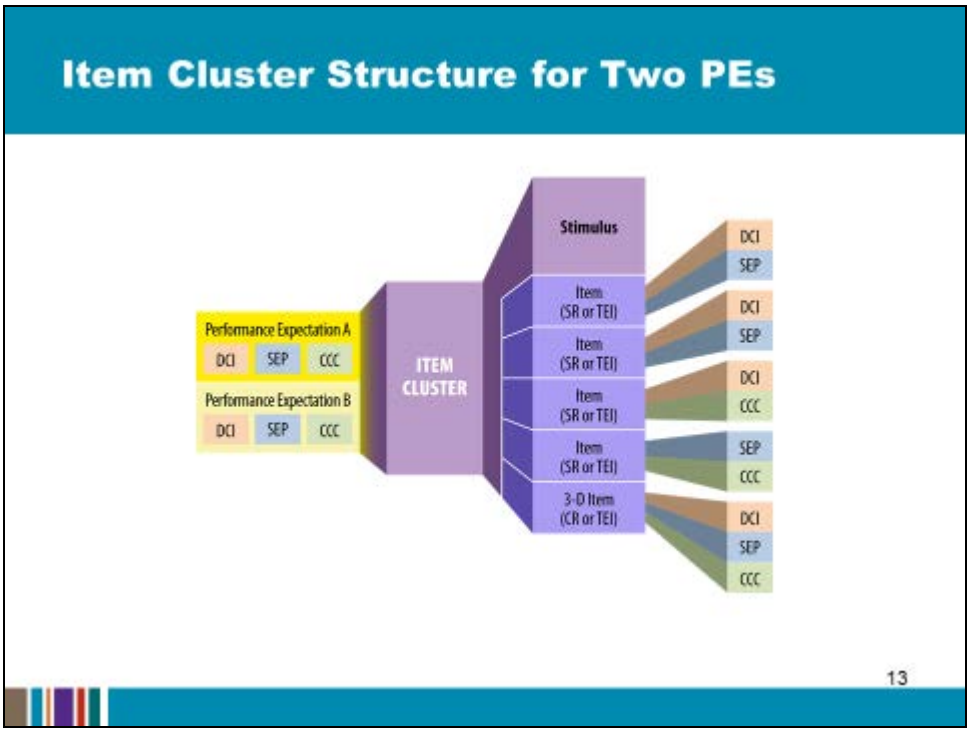
Each individual item within the cluster must align with at least two dimensions of the NGSS to qualify for inclusion, so the emphasis here, the item cluster overall achieves three-dimensional alignment. Items must achieve at least two-dimensional alignment to be considered for inclusion here, but every item within a cluster doesn't have to achieve three-dimensional alignment. There's a delicate balance in that, but there's also some practicalities that the collaborative attempted to work through.



The other supporting document is the item specifications guidelines, and they really are an extension of the assessment framework. They were just sort of developed in parallel. The item specifications guidelines picks up where the assessment framework leaves off. It articulates the NGSS to item cluster correlations that are necessary for the development of NGSS-aligned items, item clusters, and assessments.

One of the key elements of the sample performance expectation item specs are the linkage of PE evidence statements produced in the general manner of NGSS, with a lot of hands working to it, but the NGSS statements that were produced and available alongside the NGSS. This really was a basic expectation of the prototype, and as we've all learned in our assessment development world, we're still working out the kinks of meeting both expectations in the item specifications guidelines, as well as in the assessment framework. We had to start with a target, and then, through the

prototype, we developed lots of lessons learned, as a collaborative, of where the challenges were and where they were not. We hope that we have accurately represented that within the matter of the items itself.

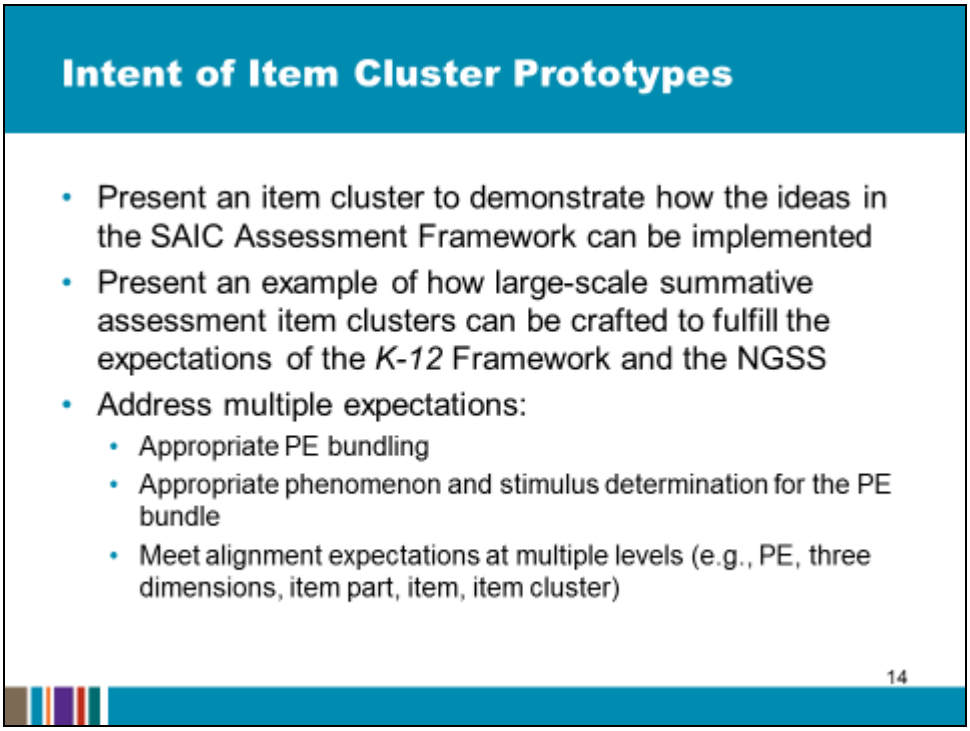


This diagram really was one of the first things that the collaborative developed and set as its target to focus on. It represents a model of an item cluster. There's three key pieces of this, and again, I'm not going to give you the whole chapter of where this is at in the assessment framework. You'll see a later picture of this related to the specific prototype. The three key pieces that this emphasizes, it is on the left-hand side in the yellow, that performance expectations most likely need to be bundled, usually, to support an item cluster. That helps in coverage of the performance expectations, and it really helps in crafting an item cluster and stimulus that really embraces the idea from NGSS that the PEs are not in isolation.

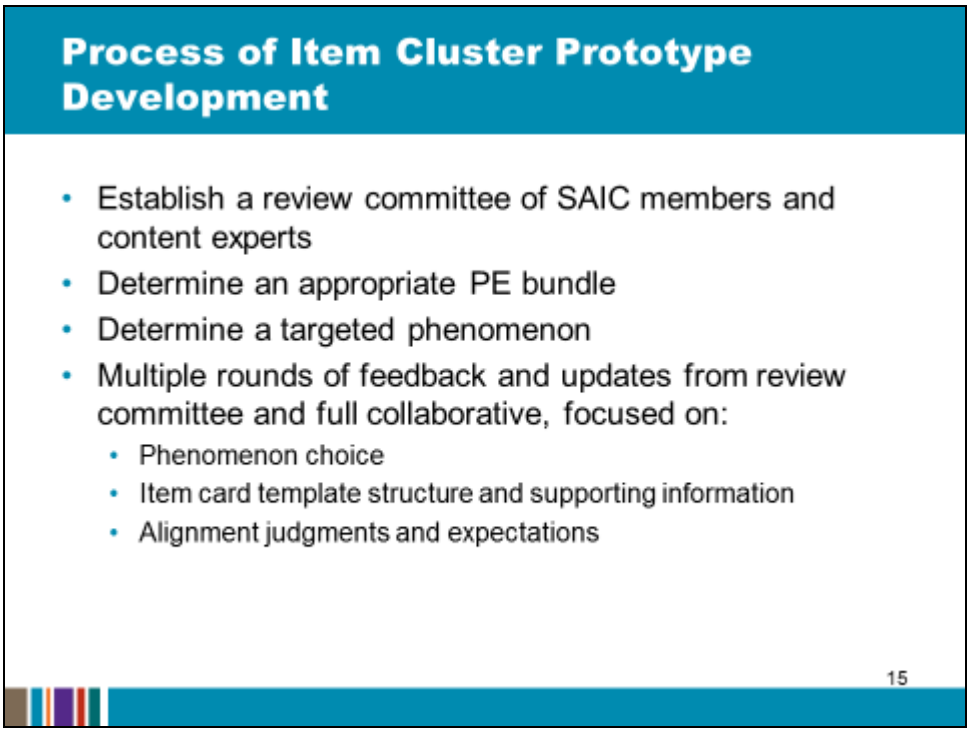
The middle aspect of this slide, that purple, really is not intended to be absolutely prescriptive. We're not saying you have to have five items in an item cluster, but we know that those items need to be linked to a stimulus. The stimulus needs to be based in a phenomenon which is drawn from the performance expectations themselves. Then on the far right, again, is just a sample of how you can group together, at the really high level, items that have two-dimensional alignment throughout the cluster. Again, the

states felt very confident that you have to have at least one item in a cluster that is aligned to all three dimensions, so single items aligned to at least two, the overall cluster aligned to three dimensions, and that you really need a pinnacle item to align to the three dimensions.

Again, one example of things that we have learned as we've gone along is that that three-dimensional item, typically, we envision them as a constructed response or a technology-enhanced item, does not necessarily have to be at the end of an item cluster. It can be spread throughout. Then "SR" is selected response. One of the things that the item specifications guidelines explicates is our recommendation of types of items and subtypes of items.



I'm going to glance over this slide really quick because a lot of this has been touched on through the introductory comments. The item cluster is being presented to demonstrate how the framework can be implemented. It is an example of how large-scale summative assessment item clusters can be crafted, and we are hopeful that it can be the basis of ongoing conversation in the science and assessment communities on how to achieve NGSS assessments.



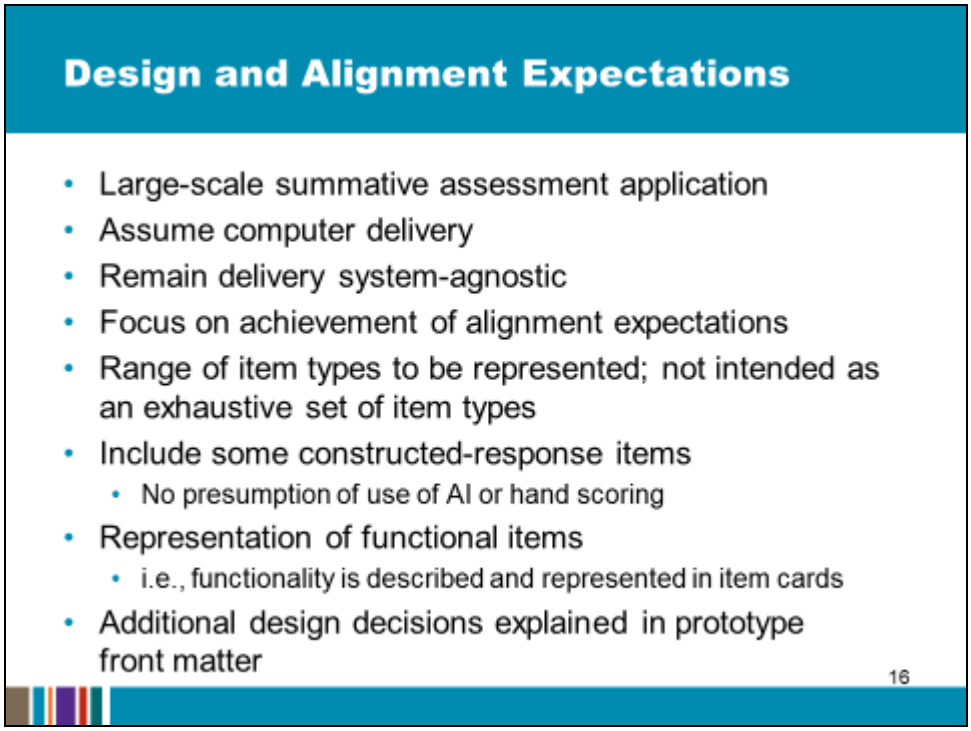
Without going through each nitty-gritty of the process of item cluster development—and this should come as no surprise to a lot of folks in our community—this was a very, very iterative process between content experts, measurement experts, and the states themselves and state members themselves. We worked through a variety of tricky things as we were working on actually mocking-up what does this prototype have to look like. Alignment and how everybody was viewing alignment, defining alignment, expecting things to meet their comprehension of alignment was an ongoing theme of the production.

We actually worked a lot on, "How do we document? How do we provide all the information that's necessary in the prototype without overwhelming folks?" It's almost like people need a preliminary course in the K-12 framework, NGSS, to really interact with the prototype. That really was our basis, was to not go to the really base expectation of telling folks what a PE is and expecting folks to come into the conversation with some of those basics. Even then, you're going to see in the documentation, there's a lot of information there. Some of that's because it's a prototype and we want to be explanatory with the information, and some of it is because it's key information to make judgments and conclusions based off of the item.

The actual item themselves, everybody knows the challenges presented in developing quality items, and then, again, everybody's

expectations of that preconceived expectation of what needs to be achieved in these NGSS assessments. Frankly, what messaging are we sending to the field as we present both the assessment framework and the prototype itself, and wanting to make sure that that messaging was consistent with the expectations of the NGSS and the K-12 framework, and not to present something that was contradictory to that.

A lot of voices are represented, but as noted in the front matter of the document, there wasn't always absolute consensus in the discussions, and so we've tried, with some of the documentation, to represent significant places where there was not consensus. One classic example you'll see in a grade five item is how we handled mass versus weight. That's not supposed to be distinguished. We chose those PEs because we didn't want to shy away from that issue, but not everybody agreed on exactly how it should be addressed, and so we presented it, and then we explained why we presented it as we did.



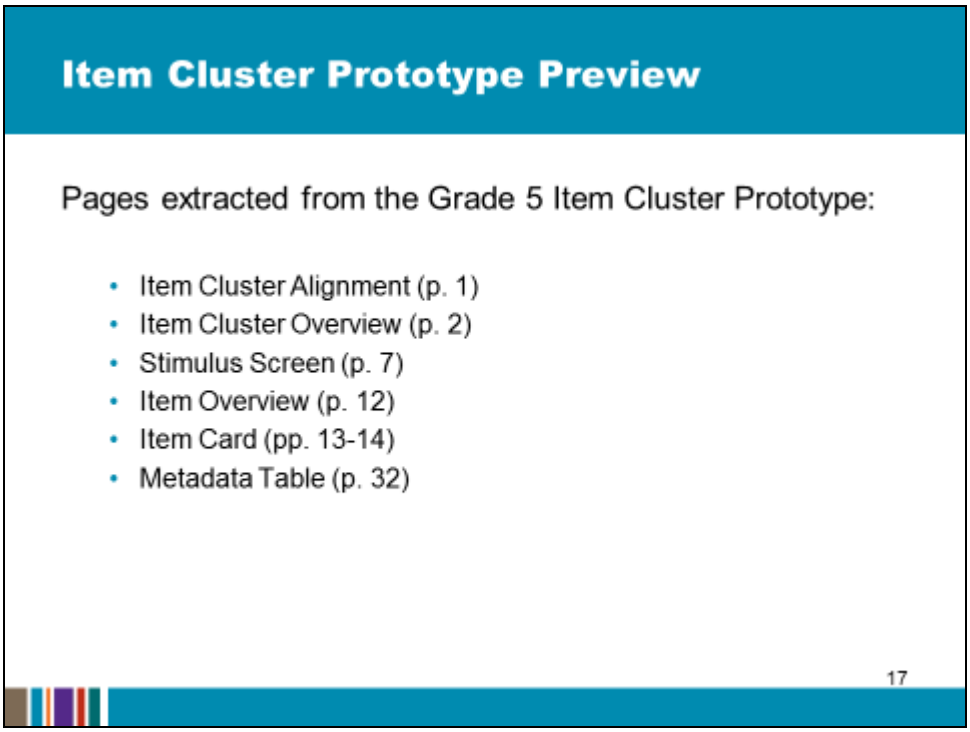
Lastly, before I hand it to Nicolle, we just wanted to give a few high-level design reminders for everybody as they look at the prototype. Number one, again, this is designed for large-scale summative assessment applications. Even though we believe a lot of these lessons learned can inform classroom embedded assessments, interim assessments, some of the formative assessment tools, the focus here is large-scale summative.

We assumed computer delivery, not necessarily saying that every state is going to be there, but the assumptions of this prototype was computer delivery. We attempted to remain what we called delivery-system agnostic. We did not want to design the prototype to advocate for one vendor's system of delivery versus another vendor's, and so we used our best knowledge of the field to present delivery system tools that aren't unreasonable for most of the large-scale assessment delivery systems out there.

We've talked about this already. We focused on achievement of alignment expectations.

Some folks will raise the question, "Well, what was the role of accessibility and accessibility role reviews in the prototype?" The response to that is that we maintained general accessibility expectations and perspectives. These did not go through a full accessibility review. In large part, it was the thinking of the state that we were tackling enough as it was. Not that accessibility issues are not important. They are in the forefront of development, but for a first foray, we needed to limit some of what we were directing head-on to get these things out in less than six months, which is about our timetable.

You can see a range of item types being represented. It's not intended as an exhaustive set of item types. Again, the item specifications guidelines list a general recommendation, but even that is not intended as an exhaustive list. We did include some constructed response items, and we made no presumption on where the field was at, where states were at with their concerns or not, as far as artificial intelligence scoring of those or hand scoring. The representation of functional items, what we're going to produce and deliver at the end of this call is a static PDF file. We wanted to, early on in this process, to make these items functional to where you could go in and you can move, and the technology-enhanced items were actually functional. We would love to do that in the future, but, again, the focus here was to present a model and an implementation of the assessment framework that could extend conversations. We wanted to really get that done and to move the field forward because we know that there are states represented on the call right now who are going back to the office tomorrow. They're looking at and trying to develop actual items with actual teachers for delivery, and then for operational use in the next couple of years. We tried to find some of those tensions. There were additional design decisions that we explain in detail in the prototype front matter itself that we're not going to go to here.



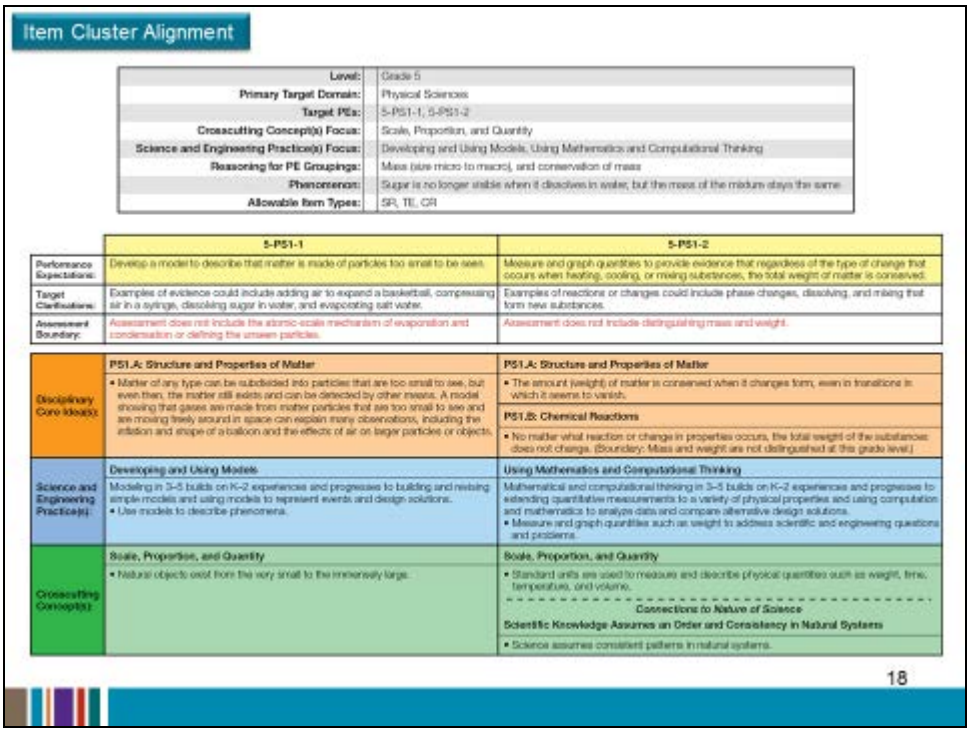
As I set this up for Nicolle and I take a breath, Nicolle's going to walk you through the pieces of the prototype. Earlier when I said there's a lot of information, this prototype, the full documentation is 40 pages of PDF text. There's front matter. There's some appendices. There's a lot of tools that we tried to put into it to help folks use it. Our hope and our goal today is, one, tee-up the background that we already have, but, also, give everybody some context of: How do you approach this? One of my thoughts on this is a reminder for everybody to use our different reading strategies that we all employ, in other words, not necessarily just start the thing and start on the first page and read right through the whole thing. Possibly look at some of the front matter, some of the metadata table, as you interact with and process through the prototype.

With that, it is my pleasure to hand it over to Nicolle Romero. She is our Science Assessment Development Manager at WestEd and has been integral in the documentation, as well as the design, of the prototype and making sure that it meets diverse groups of expectations, again, focused on achieving accurate measurement of student understanding of the NGSS. Nicolle, I hand it to you.

Nicolle Romero: Thank you, Kevin. We did essentially take a selection of pages extracted from the grade five item cluster prototype, and, again, these references to the pages are to the actual pages in that PDF document. Essentially, we're going to walk through an item cluster

alignment, and you'll recognize many of the texts from the NGSS itself. We're going to step through an item cluster overview which provides a high-level holistic overview and really enables you to see the forest from the trees.

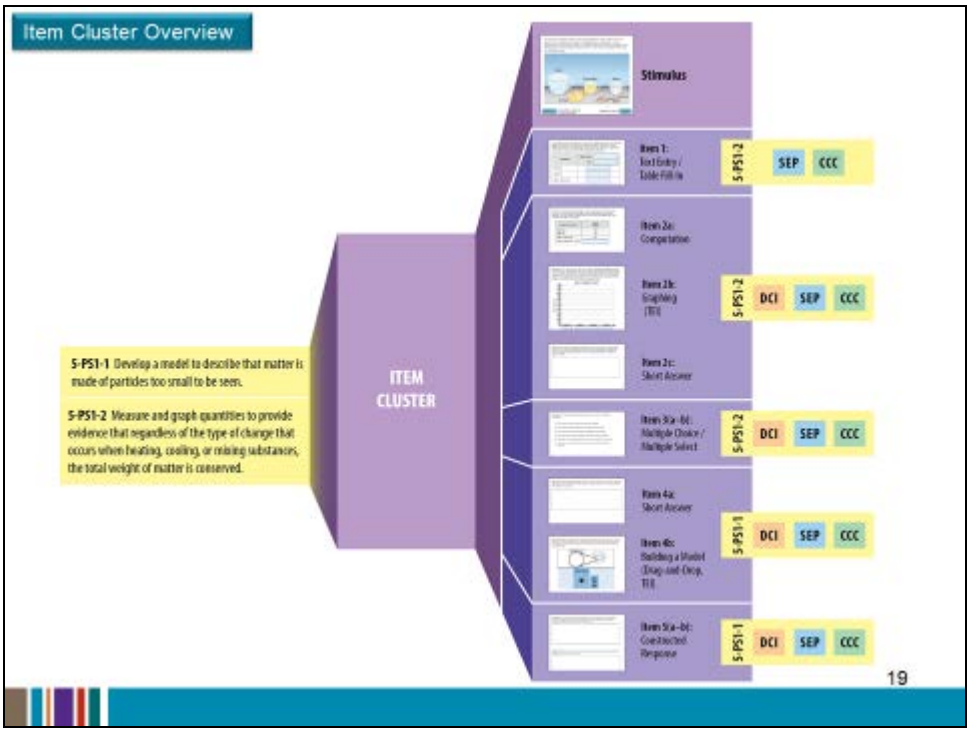
We're going to step through a stimulus screen, and this is just one sample stimulus screen from a sequence, an item overview, essentially, a student view, an item card, and a metadata table. Again, this is just a selection from the full PDF. We do encourage everyone, if you download that document and read through it, to really take a moment and really scan through so you can see all of these pieces and the components and how they come together. Again, that will give you the perspective of seeing the forest and then to dive in deeply.



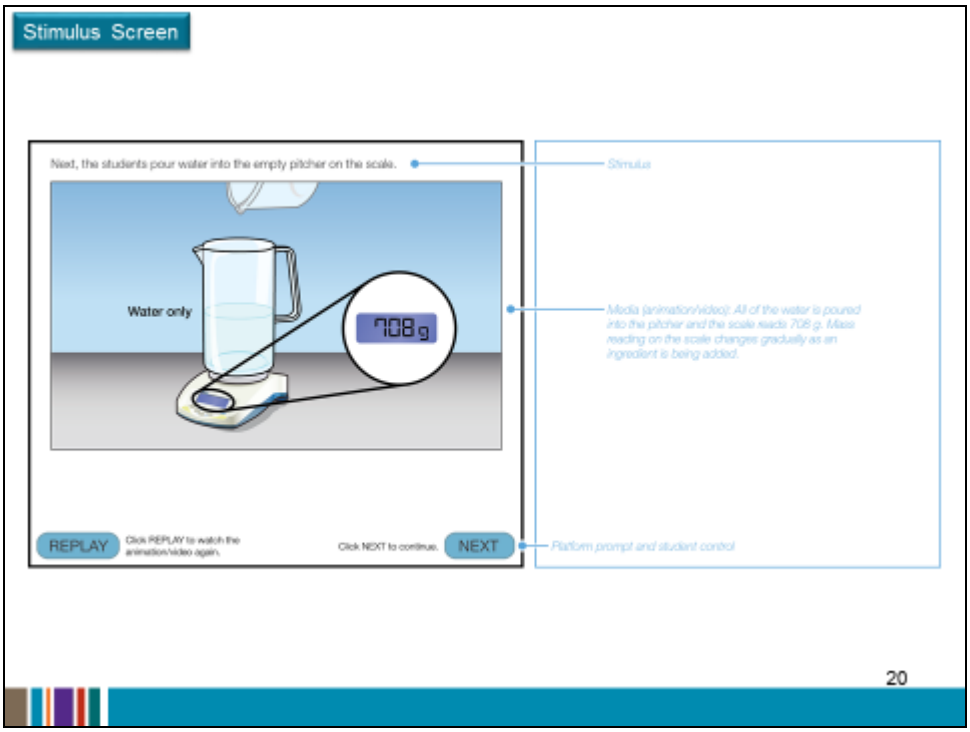
This screen is the item cluster alignment. Again, many of you familiar with the NGSS will recognize the two PEs that are shown at the bottom here for 5PS1-5 and 5PS1-2. These were the two PEs that were bundled and were targeted for this particular item cluster and in the prototype.

At the top, really, most of the salient information around the item cluster. One thing I did want to point out here is the identification of a phenomenon. Really, the phenomenon is the focus of the item cluster. We essentially want to focus on that so we can see how the student makes sense of this phenomenon through the lens of our

three different dimensions. You'll see that as a theme through the entire item cluster.

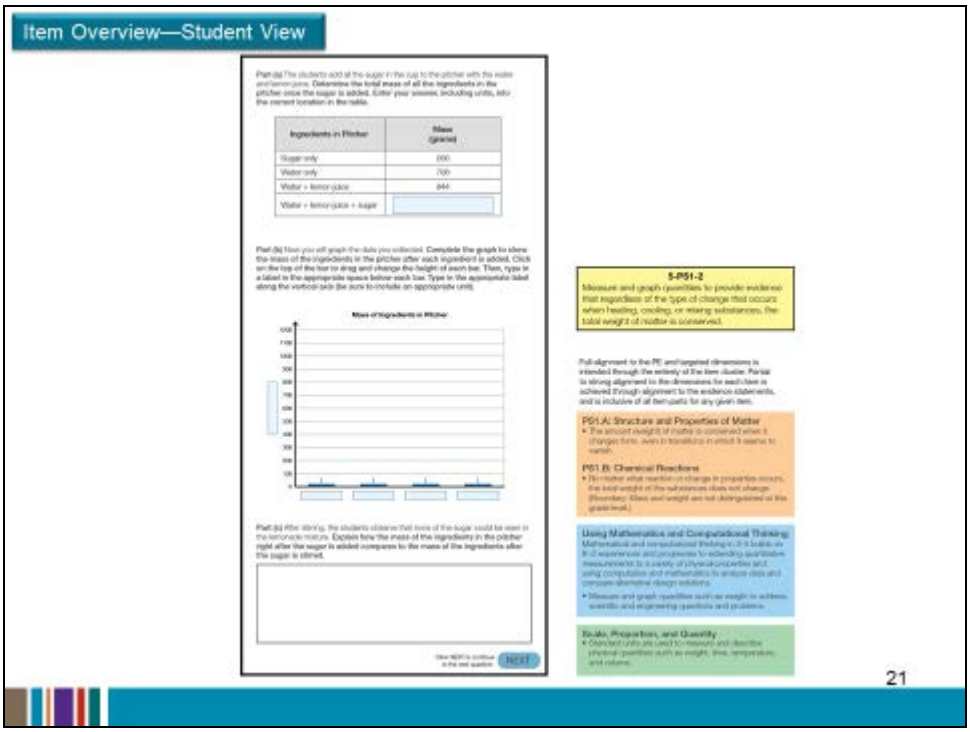


The item cluster overview, you'll see that this is familiar because we did extract a page from the assessment framework where we provide the same graphics, but in a more generic or theoretical approach to item cluster development. We wanted to also include this overview so you can see, moving from theory to practice, basically, this holistic view of the item cluster and how it comes together to achieve that three-dimensional alignment to the NGSS, and more specifically to the two PEs that were bundled together and selected. You'll see that there are thumbnails provided. These are not, of course—it's not inclusive of every page of the entire item cluster, but instead samples from the stimulus, and then also from each of the items.



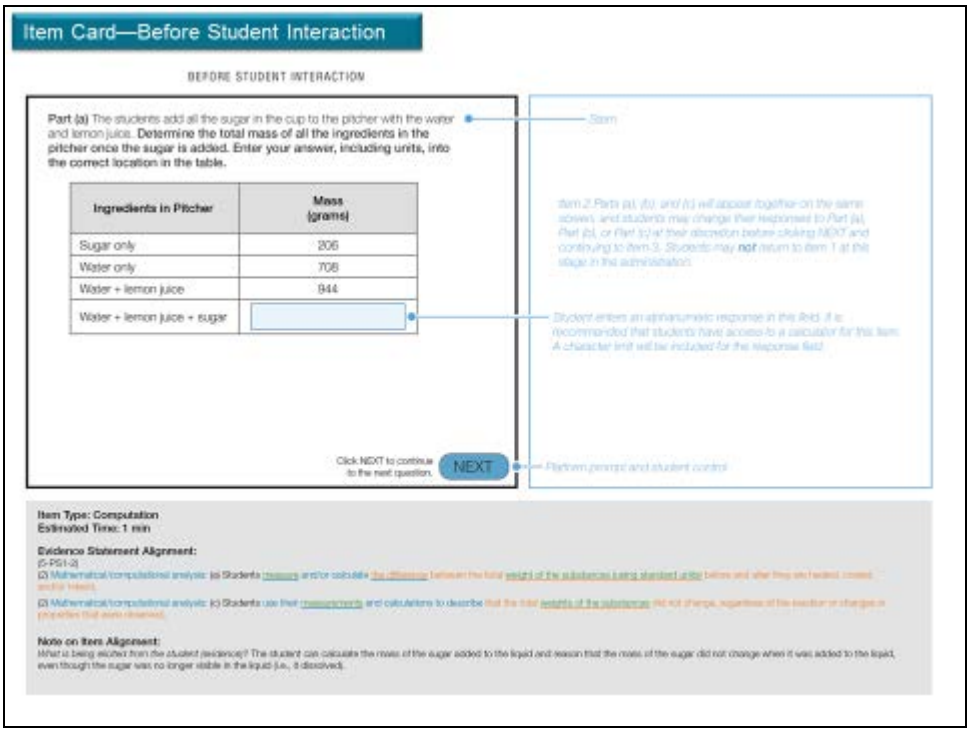
This is a sample stimulus screen again. It's a single still, and it's meant to be taken from a full sequence of either an animation, video, or a simulation. Again, the prototype is not prescriptive. We understand that states will choose to deliver the stimulus by different modes and by different means, and we do attempt to stay somewhat delivery agnostic.

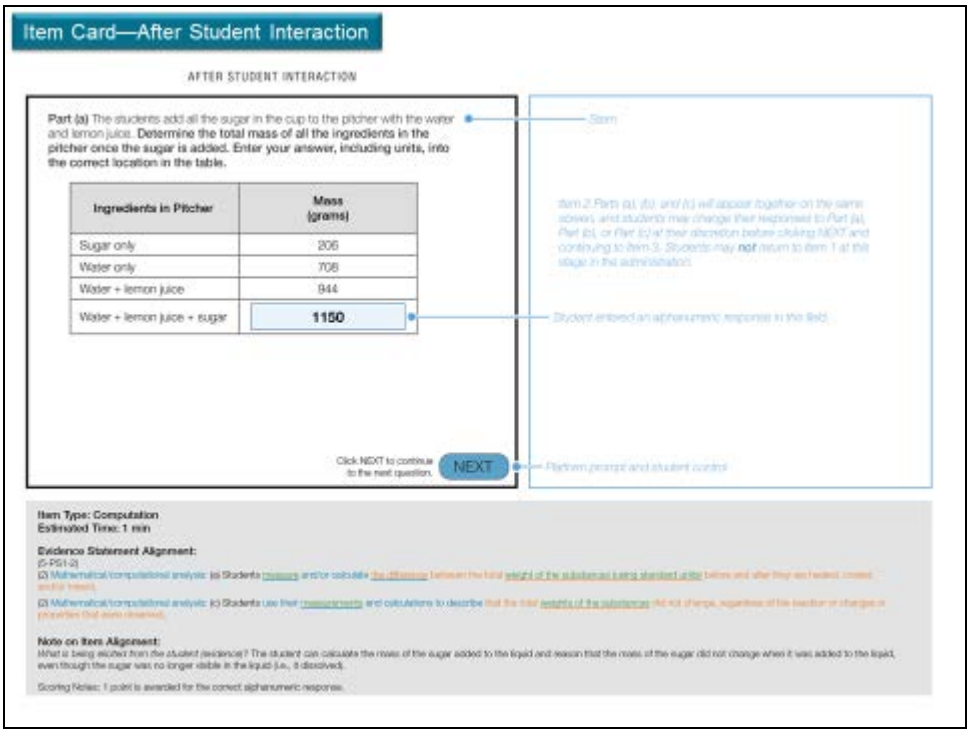
On the right-hand side, you'll actually see our UI notes, or user interface notes. That gives us the opportunity to convey to the reviewer the intent and the different pieces, whereas, the left is really more of the student view. We'll step through in more detail some of these UI notes and what they accomplish as well.



Now, the item overview, so this is essentially a clean student view. This was requested about mid-development because, as you can imagine, there's quite a bit of information that we are attempting to include at the item level and at the item part level. At the item level, you can see the alignment that's achieved on the right-hand side. I do want to remind everyone that that alignment is achieved at the item level and is inclusive of all the item parts. That's why we wanted to include this screen, to really convey that information and to articulate that alignment decision, and also which is reflected through the assessment framework.

Now a couple of other pieces. We discussed the UI notes, so they are not presented here. Any information on functionality would actually be provided in that more detailed view on the item card itself.





This is a sample item card. Again, additional information is provided. Essentially, it's made up of three separate parts, so in the upper left, you'll see that there is a title, so that's before and after student interaction. You'll see that throughout the PDF. You'll see both of these screens, and it's meant to give the viewer

the option to see both the before interaction and then the intended student interaction.

The item card template is broken up into three distinct areas. We've touched on a few of these. The first is this upper left screen, or portion of the screen, and that is really the student view. Next, in the upper right, this is the UI portion. You'll see that this theme is repeated in both the stimulus screens and also the item card screens. We'll delve into more detail in just a moment of how those UI notes are divided.

The next portion in every item card is this portion at the bottom that really captures more of the detailed salient information at the item part level.

I'm going to step through each of these. I know we're moving quickly, and I would like to basically go through and again point out the key parts, knowing that this is just a single sample, but you'll see this repeated through all of the item cards in the prototype.

At the top here is the before or after student interaction. Below that, you will see the stem, and oftentimes the stem can be broken up into more than one portion. You'll see that that's labeled with the UI notes. Below that, any type of multimedia. It can be a graphic, a table, a video. Essentially, that's called out, and the interaction that's expected from the student is also called out in this UI note.

This is an example of a field that a student would populate. We do pay special attention to make sure we call those out so you understand the interactions for each of the different technology enhanced items. Again, platform prompt and student controls, these are delivery system agnostic. We've really made every attempt to explain what we were leveraging in terms of that online delivery, but at the same time, remaining delivery system agnostic.

A little more specificity with the UI notes. If you're familiar with wireframe, the UI, again stands for user interface. It gives the opportunity to convey more information beyond the student view or any of the metadata captured at the bottom. Essentially lets us point out key units or components that are repeated across item cards, but also any special instructions or information that is relevant and important to understanding the functionality of the item itself. You may notice many of the TEIs are currently on

other assessments, so we're not claiming that any of these are, per se, novel, but you'll see some additional functionality that we felt was necessary to truly assess the NGSS. We wanted to call those out, as well, through these UI notes.

There are some UI notes, again, that are general, and we do provide these as soon as it is relevant in the prototype itself. Some of these are around navigation, so a student may move freely between parts, and they can change responses to parts because they are interacting with all of the parts within an item at a single point in time, but they can't navigate back to another item once they've submitted it. This is one example of leveraging that online delivery, but we did want to call that out because it is an assumption that is made during the prototype.

These are component-specific labels. Again, these are specific to just particular items, and you'll see that they are repeated across the item cards. Again, these are component-specific, and you'll notice the leader lines, that they are referencing specific aspects of that student view.

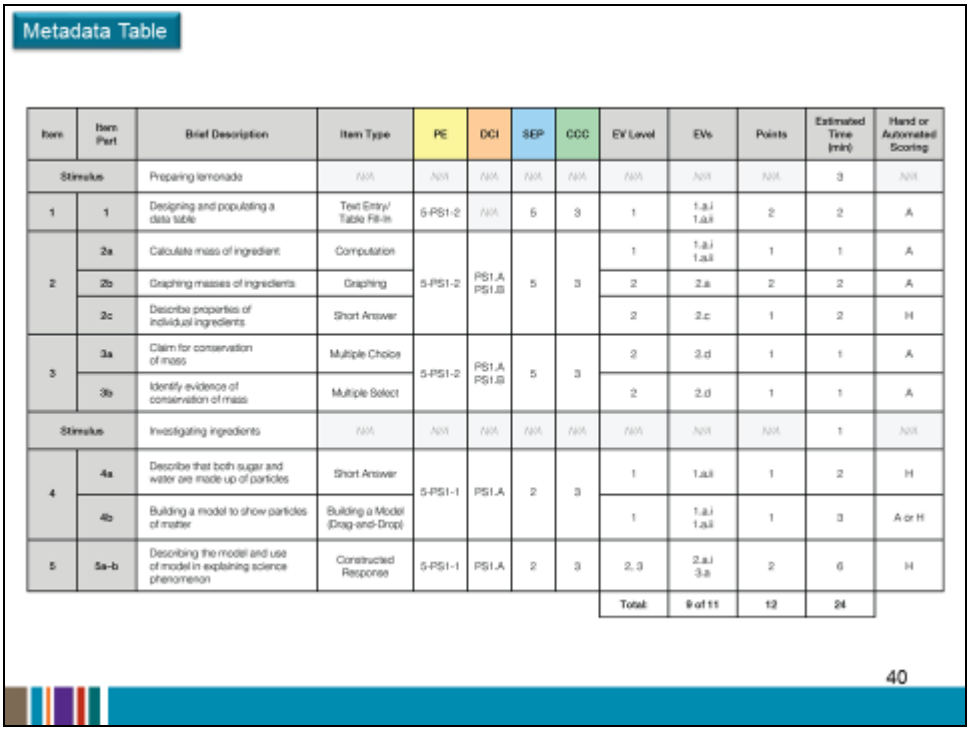
Finally, at the bottom of the item card, if you can imagine, real estate is somewhat scarce. We wanted to make sure that we could convey as much of that information around alignment goals and expectations, as well as some of the metadata that normally travels along with a traditional item. At the top here is the item type, so, essentially, if it's a specific TEI item, we would call that out and the estimated time. Again, these are estimates, and we know next steps would include cog labs, but these are our best estimates, and you'll see how that is checked carefully across the item cluster due to the some of the assumptions that we wanted to maintain, as well.

The next piece, below that, these are the evidence statements. As Kevin mentioned, it was the goal of this particular prototype to align item parts to a specific evidence statement. You'll see both the PE that that evidence statement is associated with; you'll also see the color coding that was provided, which is additional information for the three dimensions. That color coding was provided by Achieve, as well. Some of the items you'll see have evidence statements from both PEs, and that is called out specifically in order to track that, as well.

Below that are our notes on item alignment. In terms of being very deliberate about the format and what evidence is being elicited from the student, you'll see notes and best practices and thinking

behind the intents of this item and the alignment goals. You'll see that, for each item part, sometimes it explains how item parts can come together to more fully address single evidence statements, but, essentially, you'll see more of our thinking behind that process and the intended evidence that is being elicited from students.

Below notes on item alignment are the scoring notes. This one is fairly straightforward. It's just the case with some of the more complex items that needed to be a little more worked out and explicated, so you'll see additional information on scoring notes at the bottom. One note is that scoring notes are provided on the after student interaction screen, but not on the before student interaction, as well as any information about the rubric or the key.



Item	Item Part	Brief Description	Item Type	PE	DCI	SEP	CCC	EV Level	EVs	Points	Estimated Time (min)	Hand or Automated Scoring
Stimulus		Preparing lemonade	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	N/A
1	1	Designing and populating a data table	Text Entry/ Table Fill-In	5-PS1-2	N/A	5	3	1	1.a.i 1.a.ii	2	2	A
2	2a	Calculate mass of ingredient	Computation	5-PS1-2	PS1.A PS1.B	5	3	1	1.a.i 1.a.ii	1	1	A
	2b	Graphing masses of ingredients	Graphing					2	2.a	2	2	A
	2c	Describe properties of individual ingredients	Short Answer					2	2.c	1	2	H
3	3a	Claim for conservation of mass	Multiple Choice	5-PS1-2	PS1.A PS1.B	5	3	2	2.d	1	1	A
	3b	Identify evidence of conservation of mass	Multiple Select					2	2.d	1	1	A
Stimulus		Investigating ingredients	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
4	4a	Describe that both sugar and water are made up of particles	Short Answer	5-PS1-1	PS1.A	2	3	1	1.a.ii	1	2	H
	4b	Building a model to show particles of matter	Building a Model (Drag-and-Drop)					1	1.a.i 1.a.ii	1	3	A or H
5	5a-b	Describing the model and use of model in explaining science phenomenon	Constructed Response	5-PS1-1	PS1.A	2	3	2, 3	2.a.i 3.a	2	6	H
								Total:	9 of 11	12	24	

The metadata table, so if you can imagine—I know many on the call are intimately familiar with the format of a metadata table. Oftentimes, this is used at the level of tracking a test form, but we found that it was an invaluable tool throughout the development process in terms of tracking some of our alignment goals and also some of the more salient information that roll up to the item cluster level.

I'm going to walk through briefly. Again, this metadata table is provided at the end of the PDF, but I will say that, in terms of development, it's something that is a critical tool right from the start. We're going to walk through fairly quickly and just point out

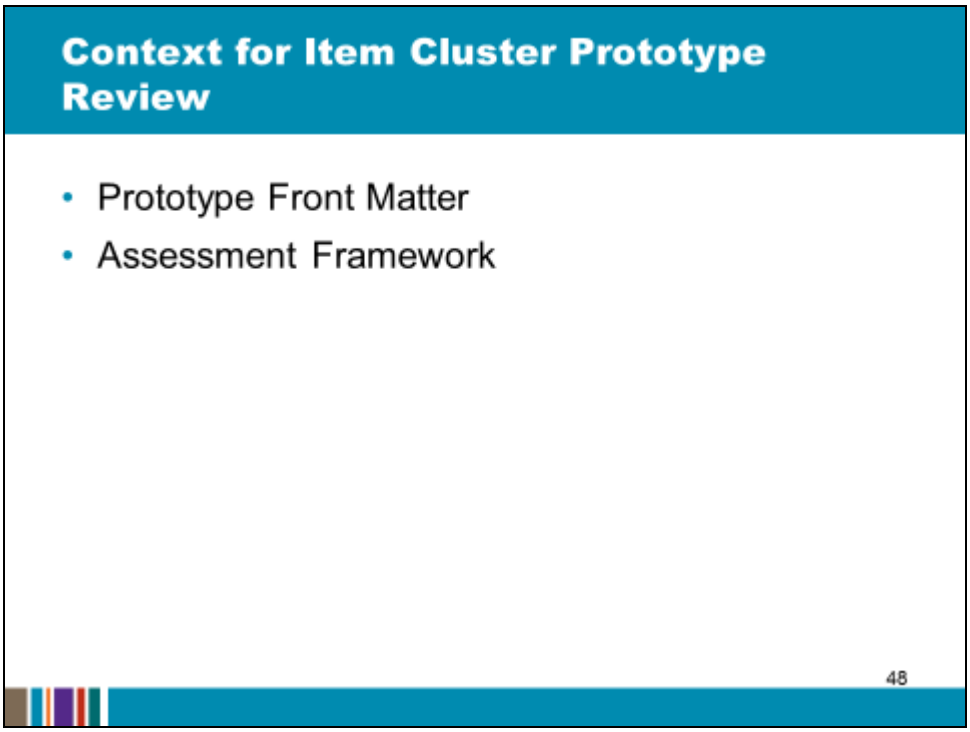
some of these column headers. First is a brief description of the item. The next column is the item type. Again, most of this information is pulled directly from the item cards and it's just a way to have that kind of holistic overview of the item cluster at a glance. The next four columns, the first is the PE, in terms of intended alignments, and then, also, the three dimensions for the PE itself.

It should be noted that, for example, with the crosscutting concepts, there is additional information in terms of that tiered structure at the high level of the crosscutting concepts. You'll find more of that information on specific item cards, but, again, we wanted to provide a summary here.

The next two columns are focused on the part level. Again, the alignment goals were to the evidence statements. You'll see that, following a row over, you'll notice that it is at the part level that we're providing the evidence statement level and then, also, the evidence statement itself in terms of those alignment goals.

Our last three columns here are again pulled directly from item cards, but provide that summary of the points per item part. The estimated time, which includes the stimulus, and also the total at the bottom is inclusive of that time, as well, and if it was intended to be hand or automated scoring. Again, there is quite a bit of flexibility there, and we don't assume AI versus hand scoring for all items.

After reading through, this is an example of reading across for a particular row. This is for Item 2, and you'll see it's broken up into three parts. A brief description of each part is provided, the item types per part. The alignment information is at the item level, so you'll see that's aligned to 5PS1-2, achieves three-dimensional alignment, and then, also, the evidence statement level and the evidence statement itself at the item part level.



Again, I would like to, before handing it back, invite everyone to read through the front matter that's provided in that grade five item cluster prototype. It provides quite a bit in terms of insight into the structure of the template. It delves into some of our content-related decisions, and it really details more of those additional considerations around alignment, the use of technology, and the assumptions under which the item cluster was developed. I know, with that quick selection, it was just a preview of the prototype. That will provide much more detail in terms of the intended use of the template and additional details on the development process.

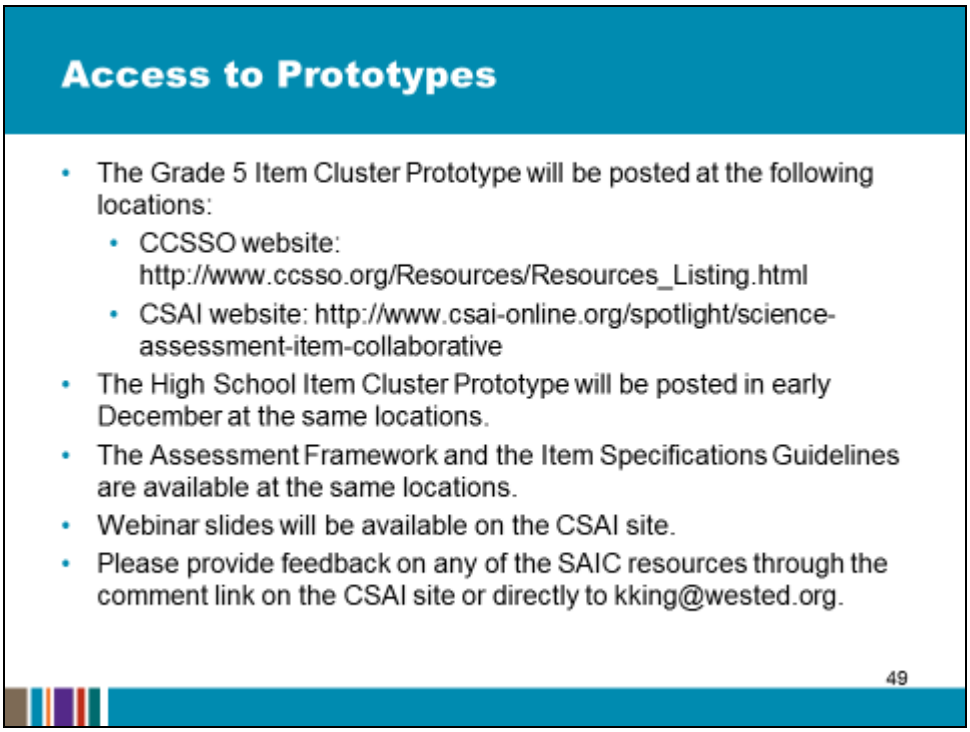
With that, Kevin, I will toss it back to you.

Kevin King: Thank you, Nicolle. Boy, for everybody, that's like drinking from a fire hose, and that's a little bit of accessing into the prototype itself. It is not, again, that we want to overload folks with information, but we want to be complete in what we expect how the items should be functioning, or would be functioning. Really, really, that metadata sheet really homes in on the focus for the collaborative all along, has been first and foremost on alignment and establishing the beginning place to start thinking about test design, worked around item clusters, instead of just independent items.

We have a good bit of experience in the field in that. We've been doing this in language arts. We have it in math and social studies, and previously in science, just not necessarily to this full degree. Also, again, how to weigh in and fold into the three dimensions and make sure that we are measuring them as they were intended to be instructed to, as they were intended for students to learn and understand science, which really is the steps forward that the K-12 framework took the science community, and the NGSS has really extended the science community.

The front matter and the framework, again, please remember to take the prototypes themselves in the context of the next-gen science standards, in the context of the K-12 framework, and in the context of the assessment framework. Finally, before I go to my last slide, a reminder that we are excited as we move this conversation forward in the field. I speak confidently for CCSSO, for Achieve, and for WestEd that we are happy to participate in that conversation and to help move the field forward to ultimately meet the needs for the states.

I remember, years ago, I was sitting with some science supervisors, and they were like, "Can somebody put something out there that was developed after NGSS was implemented and adopted that we can begin the conversation about how to meet large-scale summative assessment expectations at the same time of meeting the measurement and learning expectations of the NGSS?" We see this as the beginning of that conversation, and for states who have been involved in the collaborative, continuing that conversation.

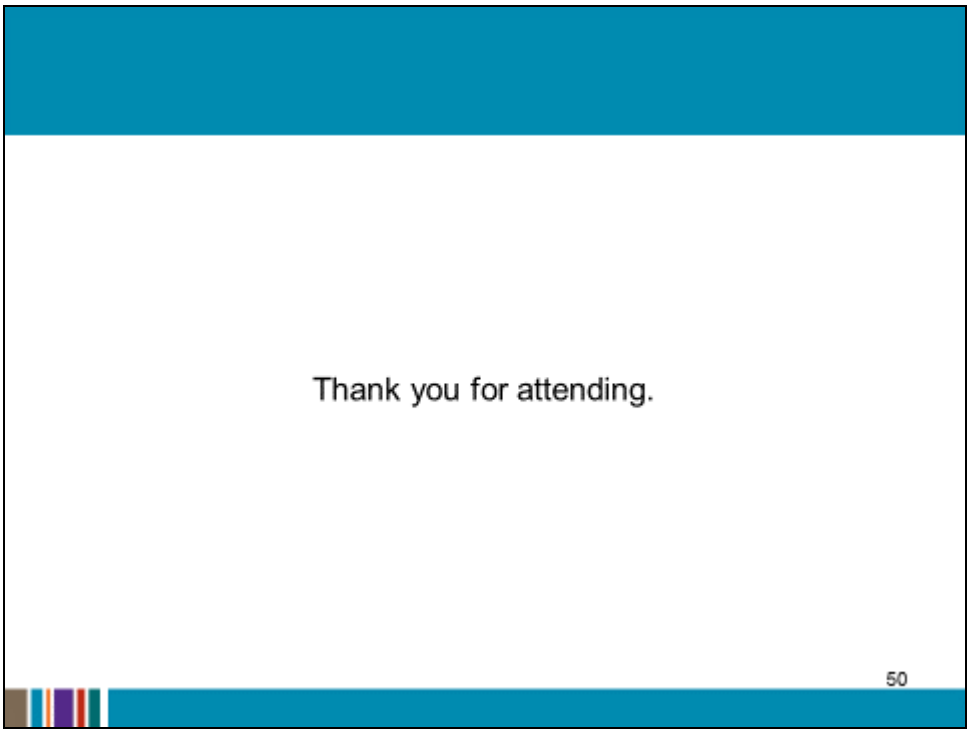


I am very excited to share this slide with you. During the webinar itself, both at the CCSSO website, which you can access through that link on the screen, as well as the CSAI, Center for Standards Assessment and Implementation, hosted by WestEd, at that website, you can presently access the assessment framework, the item specifications guidelines, and the PDF of this grade five prototype.

Some footnotes for you before you all run to those websites. The high school item cluster prototype is expected to be posted in early December. It will be posted at the same locations. The framework and guidelines are there. These webinar slides also will be available on the center's website. They're actually there right now, if you wish to use them, and a recording of this webinar will be posted at the center's website in the next day or two.

We have set up a possibility that, at minimum, you can provide feedback on these resources through the Center on Standards and Assessment Implementation website, or if you want to come directly to me, you're welcome to. Don't feel obligated to because I'm happy to have my inbox reasonably managed right now, but the center's website gives you a direct link, and we'll be monitoring that for any feedback you have so that it can inform the discussion moving forward.

I want to thank you for your comments as you've submitted them throughout, and I've tried to respond, both as we've gone through the presentation, as well as in chat. We are actually done a little bit early, which I cannot believe. We are again excited to present this documentation on behalf of CCSSO and the collaborative states, and we are excited to continue the conversation forward. With that, we will conclude our webinar today with a thank you for attending and a thank you for your visit and for looking at the resources themselves. Thank you again, have a great day, and we look forward to continuing the conversation.



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