**Robert:** Good morning everyone. My name is Robert Pelychaty and I work at the Department of Education, otherwise known as desi. And my current role is the manager of inclusive assessment. And what does that mean is it means I work with a variety of educators, education specialists here and we work to make the S assessments that are required by state and federal law accessible and approachable to all our students, specifically students with disabilities and English learners. If you're here today, it means you're registered to learn how to deliver and administer a specific co component of the alternate assessment. The alternate assessment is only for students with significant cognitive disabilities who meet that definition. And this particular training is focusing on how to assess the domain of science, science, technology, engineering for those students I or who are in grade five eight and in high school. And with us today we have our MCAS alt trainer extraordinaire, Debra Hand. As many of you may have remembered or may know that Deb was considered the coordinator for the MCM CAS ALT for several years. She's very knowledgeable, she's a vast expertise and is requirements and provide training to educators for several years. And she's also joined by some educator consultants, Patty Soprano and Sheila Chamberlain. They'll be in the wing, so to speak, behind the scenes, providing responses to questions that occurred during the presentation. And last but not least, we have two other kind of groups supporting us. We have Kevin Ro here. Kevin is working at coa. COA is our contractor. Now what does that mean? It means COA provides a lot of technology and logistics support to help administer the alternative assessment. It's where you order the materials, how you get to use forms and graphs, cognitive, we thank them for their work and making this an approachable assessment. We also have two A SL interpreters today for those individuals who request the ASL interpretation. But without further ado, I don't wanna take up too much of your time. I'm gonna turn it over to Deb. I kind of like consider Deb like our keynote speaker and I wanted to introduce her today and I thank her for agreeing to provide some quality training to our educators for this assessment aspect of the assessment.

**Deb:** Thank you Rob. So as Rob mentioned, this is for grades five eight in high school. So we're just gonna do a quick poll to see how many of you have, which grades are here. We have a lot of grade five, eight or eight or five or high school. So Kevin's gonna pop up the, we don't know who you are when these polls are done, so don't worry about that. There's about 170 of you. So almost evenly split. This is interesting. Used to be when we were in person there would be a lot fewer high school. So as you can see it's 37% grade five, 44% in grade eight and 42% high school. So very evenly distributed. So thank you for doing that, appreciate you taking the moment to do that. So welcome. So we're gonna talk about, first about the features of the science and tech engineering. Now, if you did this last year, it, nothing has changed. There's nothing new. But there may be a lot of you who are new to the MA alt process. And so you came on Monday and we talked about the update and we looked at ELA language reading and math and we said that the science and technology was gonna be separate because of the unique requirements. So you don't need to see me, I'm gonna go away so you should be able, able to hear me. But let's talk about the features of the science and tech. First of all, there's something called the core idea and that's based on the discipline. So for an example, energy is the core idea for physical science. What we also have is a, what The reason that this is different is because the core idea has a range of instructional approaches and that's embedded in each core idea. This allows you as the teacher to both assess and teach a cohesive unit of science rather than that single skill like we do in math or language. This is a really nice way to be able to do a whole unit and not just one single skill over and over, which is a complaint we got in the past about the science. How many times can you do the butterfly cycle? It also encourages you to assess multiple entry points or access skills in a single strand. So that does promote curriculum, cross curriculum opportunities. And what do I mean by that is that if you are going to be doing things like reading an informational text about that science unit, you can also use that for your reading strand. So think about that in when you're doing your units. It also includes the use of science practices and there are eight science practices and these promote engagement into those scientific investigations and the way that the engineering can be done, it just really helps to promote our kids to be thoroughly engaged in the science itself. So those are the features. These are the eight practices, these are the eight science practices. They are numbered, but they do not have to be done in any order. So these are the ones that are gonna promote that engagement. And as you can see here, there's things like asking questions, analyzing, interpreting data. So I like this visual because as you can see behind there, it's like a spider web. Things are connected in various ways. There's no specific way to do this. And that's the great thing about a science unit. So let's look at those science practices. They have three separate headings. The first heading is called investigating and questioning group. And under that you'll see two of those practices asking scientific questions and defining problems, planning and carrying out an investigation. And that's to gather the information and to perform investigations. That'll help to answer those scientific questions. The next one, the next grouping is mathematics and data group. So you can see that both of these are concerned with math. One is using mathematical and computational thinking and the other is analyzing and interpreting data. Next is evidence modeling and reasoning group. And under that you have things like developing and using models or constructing explanations and designing solutions. Seven is engaging in argument from evidence. And the last one is obtaining, evaluating and communicating information. So those practices are under those headings and they're very useful because we had to, what we did is we embedded those, the entry points under each of those practices. So for the requirements overall, you've got everybody who is doing a science assessment is going to do a MCM CAST skill survey. Remember I've said this every time we've met, you must have a skill survey for each strand. Now science is a little different. You only need to do one skill survey for all eight practices. You have to do all eight of those practices. But just one time you're gonna have a total of three entry points for each four idea. And then each entry point or access scale will reflect a different science practice. So in total, there'll be three different science practices in each of your core ideas. I'm gonna break this down a little bit more in a moment so you can see it. Each activity that you do is gonna be documented on that summary sheet. So you'll have a total of three summary sheets because we have three entry points and I'll show you what those summary sheets look like as well. Each activity is going to reflect the science practice listed in that entry point. So if you choose one that talks about doing a model, that activity is going to be some type of model that you're going to do. So you're going to have three pieces of evidence that correspond with those summary sheets. In science, it's the only one that can be done over two years. So it would be the current year and the previous school year. It must be submitted in grade five eight high school. Now if you're new to the process, it's not going to help you unless some wonderful person has saved it from the year before. But if you're here for a review and you saved it from grade four and you're gonna finish it up and submit it in grade five, that's perfectly acceptable. As I said, you're gonna just complete that skill survey. Once you're gonna sit, check off at least one of the boxes in the skill survey that they can perform independently at least some of the time, then you're going to select an entry point for the assessment in that science practice at the highest grade span. And when you see the actual skill survey, you'll understand what I'm talking about as it's broken down into grade spans, entry points may be selected from different grade spans for each science practice. So if you are a teacher who has a student that's working at access skill level, there's a box that says, my student cannot perform any skills in this science practice. So you'll just check that off. So this is what one practice looks like, this is practice three, but as I said, you must complete all eight science practices and if you've been to our to the introduction and you saw Kevin showing you how to fill out that skill survey, you must fill that out completely in order to get into the strand. So for this one, you must check at least one box, but I'm sure that you'll have more than one box that needs checking. So you, if you're at high school, obviously you start at nine through 12 or depending if you're in grade eight, you'll go six to eight or three to five. However, this starts at pre-K to two. So you can check any of the boxes, perhaps you'll get one in three to five and one in the pre-K to two. But maybe at high school you'll have a student that can do one thing in grade six to eight. But you just need to check off one of those that will help you when you start doing your entry points and practices. And if I didn't say this, Kevin is going to show you how to put this all together through forms and graphs when I'm all finished. So the resource guide and the forms and graphs online, everything is broken into grade spans. So just like we looked at on that skill survey, you can see the grade spans are right there for you. pre-K, all the way up to high school access skills have their very own section and that's in each discipline. And Kevin will show you how that works. And each discipline has four ideas. And then what we did for you is under each core idea, we've given you a list of related topics. So let's take a look at the resource guide. This one is for life science. So you can see at the top those groupings I was telling you about investigating, questioning, mathematics, right? There're at the top, there's the core idea. So this is a core idea that says from molecules to organisms, structures and processes. So if you choose this core idea under life science, the options that you have are here and you can see the practices are numbered and in bold. And remember, there's no order to them. They are just numbered for our, for us. So we know and you'll know whether you did three different practices. And then under those practices are the entry point. So those entry points relate to those practices. Okay? So you can see that some in the H column, there's a couple of different practices. So investigating and questioning has two practices and then the math and data has two practices and then the evidence has three. So you can choose one from each grouping if that helps you. And then you'll be sure to have three different practices. But say your student is really good at data, and so you might do under practice three and four, that's perfectly acceptable. And Kevin, I'll go into this in real time, but I'm just showing you that each tab, you see, each tab at the top, those are the grade spans that you can choose from. And there's access skills all by itself over here on the left. So that one has a separate tab and also you can see that the entry points on the forms and graphs are also under those groupings, which makes it very easy for you. Okay? And there's the three groupings. So for grades five and eight, you're gonna do one survey, and then there are four disciplines. Out of those four disciplines, you are going to choose three to assess. So we have earth and space, physical science, life science, and tech engineering. So you get to choose whatever three units you want to do. The next thing that you're going to see is that we have one core idea that for each of those core ideas, we list related topics. So it would be very, I encourage you to go to those topics so you can get an idea of what you're looking at. Is that something you wanna teach? Is that a unit you're comfortable with? Or that you perhaps can go join an inclusion class because they're doing something on that? But I encourage you to look at the core ideas. I mean the topic, excuse me. So here's the topics for the core idea. So if you chose molecules to organisms, you can look here and say, oh, I was, you know, with grade five, I think we'll do the plants. You don't have to do plants and animals, but you can do the plants and the structure and the parts. That might be something that the kids would really like to do. Maybe they wanna plant things and measure them and see if it works in the dark, that kind of thing. It's always a fun one that the kids enjoy. Or maybe you're a grade eight, you want to, you're talking about photosynthesis and you want to do that. So these are the topics and this kind of helps you get a mindset of what you can do with your students. I'm also going to, if you're taking notes, make a note to yourself to start your, if you have to do science, to start right away. Many people over my years here start in January and then they just run out of time. So I highly encourage you to get a plan, think about what you want to do, what's fun. The weather's still decent, you know, can you go outside and do things and look at things and get started because it will really help you in the long run. It's not a lot to collect, but there's a lot to do when you're teaching three different science units. But we have a, we have a plan for that at the end. I will show you that as well. So we're gonna select three entry points or access skills that are aligned with that core idea. So now you've looked at the topics, you've determined your topic, and if you wanna choose one, as I said earlier, from one from each group, that'll make sure that you have three different practices. However, if you, if you have three different numbers, that's all you need for practices, you do not have to take one from each group, it just might help you if you do, then you're gonna choose the three pieces of primary evidence that are based on those entry points and that are based on that practice, right? We talked about if it's a model, it's going to, you're gonna show a model. If it's an investigation, you're going to have observations from that investigation. You're gonna complete the summary sheet, which I'll show you in a minute. That's gonna accompany the evidence, okay? Access skills still have to be addressed during a standard-based activity. And you'll include examples of self-evaluation because self-evaluation is always a good practice for our students, right? So, so here's what it looks like. It was a lot of talking to come down to this. As you can see, three summary sheets attached is the evidence, and I put the practices there. So you could see that there were three different practices. These were all based on one core idea, okay? So just take a look at this for a second. Three summary sheets, three pieces of evidence, three different practices. This is one core idea under one discipline. And so here's our summary sheet. As you can see, we have the top part will all be filled out when you do forms and graphs. The entry point or access skill cannot be changed or modified, but it isn't a measurable outcome, okay? It means that it just, it's just gonna go in there. The entry point as is, then you have a spot for your description. That description is very helpful for the scores when they're looking at the evidence, sometimes the evidence isn't quite as clear. If you give us a good description of how that investigation was completed, how the activity was completed, how the student participated, it's very helpful. And then there's a place for you to put the accuracy and independence of that particular evidence that you're putting with the summary sheet. And then you have a spot for the self-evaluation. You can type it in, same as before see attached, you can have something separate the same as our other self-evaluations, the strand cover sheet. This is a great tool, especially if you're new, to make sure that you've done all that you're supposed to do. As you fill out those summary sheets, the strand cover sheet gets filled in. So when you think you're done, go back to that strand cover sheet, open it up and make sure that are there three summary sheets. And if there are, great move on. Are there three different numbers in the science practices? Over to the left you'll see practice number. We shouldn't see 5, 5 1. We should have three different numbers, either three pieces of evidence. I have my three summary sheets. Do I have three pieces of evidence when Kevin talks about those breadcrumbs that we leave, this is a nice place to say, you know, measured plants and then dark plants and investigation of plants so that you see that you have the three pieces of evidence and do you have at least two self-evaluations? And that would be on the far right side. If that's all complete, then that core idea is finished and that discipline is done. And you're gonna do that three times for grades five and eight. You'll do it one in each of those disciplines, whatever disciplines you choose, but you'll do one for each of those. So high school, we have some high school folks here. It's similar but a little different. So this what's similar is you're going to do a skill survey, right? Eight science practices, just like we looked at for grades five and eight. It's the same exact skill survey. Here's where it's different. You're gonna choose one discipline, either biology or interact, introductory physics, just one. You don't need to do both, you're just gonna choose one within those discipline within. If you choose biology, you're going to choose three different core ideas and I'll show you that in just a moment. Then we are doing the same thing that we did in grade five and eight. We're gonna have three entry points. One for each core idea, you wanna review the entry points and those eight practices and then you're going to have three different science practices and they must represent the science practice that you chose. All of the same information for that summary sheet is here, just what I just talked about for five and eight. And the evidence is also the same. So you can do work samples, photos. If you're going to do photos, they must represent that science practice and should be well labeled. Make sure that the accuracy and independence reflects those photos or videos. And then include any self-evaluation. The reason that high school is a little different is because as you can see here, this is introductory physics to the left, there are four core ideas. You are going to choose three of them if you choose introductory physics. Now, you might not wanna choose introductory physics, you might want biology, which a lot of students do at grade nine. They are, they do biology. And you can do this at grade nine and submit it at grade nine. Or you can do it at grade nine and submit it in grade 10, or you can just do it at grade 10. So let's take a look at intro introductory physics and what it could look like. So these are just, I'm only showing you one practice from each core idea. So I'm just gonna reiterate that there are four core ideas, but you only need to choose three. So if you choose introductory physics, any three of these are for you. But I'm only going to show you an example from one core idea. So this core idea is motion and stability. The science practice is asking questions and defining problems. The entry point says determine criteria and constraints to define a design problem about minimizing the force of an impact in a collision. So is are just some ideas of what it could look like. We work closely with the curriculum and instruction folks for science. So they have helped us out a lot in getting this information out there. So that that helps us. So it could look like that. You're gonna brainstorm a list of items that need protection from collisions. So you can see on the left all the objects that that people thought that the students thought would be good. And then together they select one and then scribe the students' ideas for criteria and constraints. Okay? So that's just one example for that core idea. Now we're moving to another core idea. So remember in each core idea you would have three, three entry points, but I'm only showing you one entry point for each core idea. Just so get the ball rolling. Okay, so this is waves and their applications and technology science practice three, which is analyzing and interpreting the data. And the entry point says analyze data from a table or graph that includes the temperature of two substances and thermal contact over time. What it could look like is that students make observations of a system where a small cup of hot water is placed inside a larger cup of hot water. They measure the temperature at least twice and then they describe what they see. You can use sentence frames or stems that may be appropriate to help your student. Again, these are just ideas and certainly you should reach out to a colleague. Maybe you have a, if you're in a public school, you have teachers that are doing the science and then you might need some help with what exactly that entry point is looking for and maybe they have some material for you. So definitely look for those resources to help you. This is the third core idea and this is just one practice science practice. Five, developing and using models. This says to construct a model to explain the behavior of a wave. So students can use a slinky to demonstrate transverse wave resonance as well as longitudinal wave resonance. I'm not sure if I'm saying that right, but this gives you actually all of the material you would use. And I think this came from off of the web, it was one of those ideas from Science today or something like that. So there are definitely resources available to you. I would go look to your content specialist. I would also be sure to go to the review sessions that we have. And I believe we've talked about them before. The flyer will come out to tell you when they come, but they would, they will help you if you go to those and show them what you're trying to do. Here's one for high school biology. Same thing if you choose biology, which I think a lot of you do, you have those four core ideas, but you only need to choose three. And here's some ideas for you for biology. Again, these are, I'm just going to show you the three core, three different core ideas and three practices. So this one is heredity and it's constructing explanations and designing solutions. And it's constructing an explanation to describe the roles of producers, consumers, decomposers in an ecosystem with a variety of re of sources. So you can see on the right what it could look like using the pyramid to help explain the roles of the producers and consumers and decomposers. And they, you have to show where they will located on the pyramid. It, this is the core idea for ecosystems. They're gonna analyze a Punnett square and then what it could look like is using dominant and recessive forms of traits to create a Punnett square. And you can read some of these, these are actually good examples for you. You might wanna, if you haven't downloaded the PowerPoint, I would do that and just have these there to you know, kind of springboard off of maybe your student can't do something this high if you're at high school level, but you can spiral back. And this is the core idea for biological evolution and this is science practice two about planning and carrying out an investigation. So the entry point tells you to select or create the appropriate table or organizer in order to collect data from an investigation of natural selection. And then on the right, the students watch a video about natural selections and create a DA data table showing the results. Now obviously a teacher sets up the table and you're going to help them do that investigation over time. So there's a lot of different ways you can do it. But at high school level please know that you can spiral back and I'm gonna show you how actually how they decrease here. But they do increase obviously in complexity from one great span to the other. But I wanna go backwards for you. So if you're in unity and diversity for analyzing interpreting data and what I just showed you was like crazy I for your student, then you can go down to grade six and there's something there that says, analyze and interpret data to make sense of the process of natural selection in a plant or animal population. If that doesn't work, I can go back to grade three and five. I'm still in practice. Three draw conclusions based on evidence, which would be from an investigation previously about features of animals that enable them to survive in their habitat. That's three to five. My students still can't do that. I can go down again, I can display data using a simple graph or pictures to show living things in a local habitat such as the school yard. It may be in your in their own backyard. But I can go all the way back to pre-K to two. So I know that I showed a lot of high level things for high school and your students are maybe much lower, but you are able to spiral back and find the level that your student can work at. So what are the tools and material that we have to support a cohesive unit? We wanna make sure that we're supporting high quality science experience for all students. And DESI is encouraging educators to use high quality science and tech units. These units are gonna support the shift in practice, okay, from the way that we used to do things to make it more coherent for the students. Having just individual, you know when you're, you were doing the butterfly cycle and then you would do the water cycle and just, but just the water cycle and over and over again. It wasn't cohesive for the student, they weren't understanding the process, the science behind it. So we've developed a guide for you and it's recommended, it's not required but it's very helpful. And when you do one re when you do one discipline, you'll find it leads you into entry points into other disciplines. So all those resources can be found in the forms and graphs online program, which Kevin will show you when I'm finished. But I just wanna show you one piece and then I'm gonna talk about what we did a few years ago. So this is on the left are those topics that I talked about. So when you check out those topics and you think, oh, maybe I wanna do solid liquid gas or manmade versus naturally occurring properties. So on the right hand side you'll see related units, don't worry about what grade they say. Even if you're at high school and you wanna go down into six to eight, that's perfectly acceptable or even grade two. But these are units that are completed for you. They are complete, they are not what we're used to as special ed teachers where you have to put everything together. These are made for general ed teachers, everything is included in them. So those are all links, excuse me, those are related units are all links that take you to their site. They're all free, you don't have to buy anything. All you have to do is put your email in there. So just when you first open it, it may look like you have to purchase something you do not. Everything there is free. So typically we would have our science folks here to help talk about what we did, but they weren't available today. So I'm going to, I'm gonna do my best, but I think I have it down. What these are, these science units that are, they have what they call a badge and the reason they have a badge, they are from the NGSS, which I think you know is the next generation science standards. And even though Massachusetts is not an NGSS state, our framework is extremely similar to the NGSS. Just a few differences. So they have these badges and what that means is that it's had a three party review process to make sure that all of the information in that unit is coherent and organized around a scientific phenomena. And a scientific phenomena is just an observable event or a driving question that's related to that core idea. We wanna make sure it makes sense for the students. The other thing that's important is that it does help you as the teacher. It allows you to be more of a facilitator than to just have to lecture them or you know, just give out a lot of information that you might not be sure of. It helps to engage these students into the actual science. Now obviously it's going to look different for the general ed classroom than it is for the special ed classroom, but a couple of years in a row I was privileged to work with the curriculum and instruction science support staff along with some of our teacher consultants and coa and we, we did an entire workshop with special education teachers and this, this what happens to our garbage unit. And it was, it was really a, an experience that I will never forget. The teachers took on the role as of students just to experience the phenomena of garbage. And I know it doesn't sound very scientific and it might even sound gross, but it was very powerful. And the anchoring phenomenon, garbage is one where students have access to garbage, they see it all around them. It's something that they all are familiar with. This unit is guiding them through and letting them understand what happens to garbage. And when I tell you that everything is there, I'm not kidding. Everything is involved. Everything is there for you as a teacher. The only thing you have to do is modify it to your level so you can do as much or as little as you want to do, right? So when we did this, we explored the materials, we actually put the garbage out. We had videos and images and some of the videos didn't have any language so all students could watch and not worry about being overwhelmed with the, with the language. We demonstrated things, we read things. Now obviously you're gonna read texts at their level, you're going to guide those investigations the way you're going to help them go the direction that you want them to do. But their teacher facilitated more than just you being upfront and telling them what you're going to do. And that notice and wonder it's observations, it's helping them learn to ask questions. And even our general ed students have difficulty answering or creating questions. So this notice and wonder, you can say things like what do you see, what do you hear, what do you think? Is that like such and such? And so this really helps the students to get engaged and inspires them to want more, to want to know more. So we got to go to a classroom and to see how these units were being done and the classroom was working with, with two teachers were working together. So they came together as a larger group and they reviewed all the information that they had about garbage. They were well into the unit by the time we came. But the students were very excited. They all had their, their pads out, they had their open systems available to look at and it was, it, there were all different levels, it was not high levels. We had students that were doing access skills and we had students that were using sign language. We went to the learning center for the deaf and, and watched a classroom there. So all levels were able to do this garbage unit. So this is just an example of what the information looks like when you download it and it's quite a bit. But here's the really nice thing about it. You get to choose how much of it you do and what you want the students to get out of it. You can do a little or you can do a lot. It's totally up to you. But everything is there for you to start. So I highly encourage you to take a look at this. The kids had a ball with the garbage, put the garbage out. I think I have something here, right? So let's think about this. I do have an example of, of what we did. But when you wanna think about your student and how they can interact with that phenomenon. So they can, if they can speak, that's great. If they need their device, if they need a communication system of, of some sort, they can write, they can draw, they can point to images. You as the teacher can create sentence stems such as I see, I wonder, this is like, those are always great things. You can use media to help but that's how they can interact. You know, your students and how what you should do. This is what we did. We took plastic tablecloth, put it in the table and put the garbage in the middle of it. All the students had to wear goggles and they got gloves and tongs and ask them, what do you notice? What do you smell? What do you see? This allows the students, they can pick up the trash and obviously you're not gonna take the trash from the cafeteria, right? You're gonna kind of make your own trash like orange peels and empty yogurt containers and a straw, like things like that, right? You're not gonna make it too gross, but gross enough that the boys will be like, oh that's so fun. And then the kids can move it around. Now if you have students that are gonna dive into the middle of it, probably don't wanna put it on the floor, right? But again, this is garbage and it is very interesting to everyone. We followed the garbage by the way in the videos from the time it was picked up all the way to the landfill. It was very, very interesting. Even as a grownup, I was like, oh, I mean I know where it goes, but watching it go was, it's like, oh yeah, it makes you really think about every time you throw something away. So here's an example of physical science. This is developing and using models. The measurable outcome is to illustrate or develop a model to show explained phase changes between gases, liquids, and solids. So this is physical science and that's what the garbage unit was on. But I have to tell you, as the teachers were doing it, they were finding things in other disciplines and they were able to get two or three other core, other entry points, excuse me, from other core ideas. So think about that, being able to double dip or triple dip sometimes it's very helpful. In this one, these are the jars that we did. We created our own landfills. And so there's the open system and the kids that could draw drew it, the kids that couldn't draw had a jar already created, you already outlined. And then the, the student could take pictures and put them there or colors and color code it and they were all involved in creating and showing this model. Here's another example of analyzing and interpreting the data. So they're gonna compare these predictions to the data and the or observations from that investigation. So we talked about predictions and what they thought was going to happen to that material. How does it change? Do you think it'll change? And do you think it'll change in the closed or the open? Again, you know your students, you know how much you can, information you can get out of them, but this is one idea. And we talked about the weight of the system. Would the weight change? I think both Patty and Sheila were a part of our program at one point. So, you know, perhaps you can reach out at some point and ask for some, have some discussion about that. So science practice seven. And by the way, this material that I'm using these, so under the evidence, this is created by some of the teachers at, at the summer institute. So when this says when materials are crushed, do the properties of the material change. And here she talks about the color, the texture of the reflectivity. And she's already set that up, shown them pictures of the texture and talked about those things so that when she crushed this, the students could know what to look for. And in this one you're gonna support an argument about how properties remain the same when they're broken up. And this one, oops, I'm sorry I jumped ahead. This last one is about taking pieces, breaking them, and then measuring them. One thing we did find, if you're gonna crush things like cookies, make sure you get all those teeny tiny little crumbs because you want the weight to be the same as it was whole and broken. Don't let them eat any pieces before you get them on the, on the scale. So this, this science, I had a lot of feedback from teachers who did this and how excited the kids were to do the science. They, they would do at a certain time every day. And this one student said, oh, I just can't, we do it every day at, you know, on, on Fridays too as well, all the rest of the week. I guess Fridays was not for science, but he wanted to do it because they're excited, they're engaged and the enthusiasm you have for a unit will come across for your students. It's, it's a whole different way to look at this and I do promise you you'll get a lot more entry points and a lot more invested. The students will definitely be invested in the science rather than filling out worksheet after worksheet. So I'm gonna turn this over to Kevin and I'm sure you're thankful I'm gonna stop talking and he'll show you the forms and graphs and how this all works.

**Kevin:** Thank you Deb. So hello everyone again if you've joined in a previous session. So give me just a minute as usual, I just gotta swap the screen. So I'm gonna shut down the, the PowerPoint and bring up forms and graphs and we'll, we'll take a look. So give me one moment and I'll be right back. Okay? So if you joined previously yesterday for the ELA writing session, I'll give the same disclaimer that I'm, I'm not gonna go back through and give you the full how to create an account, how to add students in. We do that in the core concept session. If you came earlier in this week, if you've already seen that, if you're doing these as a new teacher out of order and you haven't come to that, that new core concepts and you're doing the one we do a little later in the month, that's where you'll get that. But we're just gonna jump right in and show you. I think it helps, I'll show you some examples of what it'll look like in a structure of what a complete science for the different grades looks like. I think it helps connect the dots of at least the framework of what the requirement is of what you need to submit. So let's, let's just jump right in. I got a couple samples, we'll come back to those. Let's, let's jump into our, our good friend Alex Keaton again who happens to be a grade five. So that's a, a nice one to use 'cause it's a grade that science is available. So let's select Alex in our student list. And we have our familiar table of contents. You will notice in this tool, tools and checklist and other, other documents, there is this STE planning guide and high quality units. That's everything. So all content, all everything. So if you just want an overall, you can, you can download the whole thing there, but there's kind of a cleaner way to do it based on what you're, you're actually working on in, in the site. And I'll show you that as we go. But just if you want the whole thing, just remember it's hanging out on this table of contents. But the usual disclaimer about the relationship between skill survey and creating strands, it will not let you create any given strand until it has the related skill survey for that strand. So you should start at the skill survey. And to do that, what do you know you click skill survey and you'll get a list. These are ones we've been working on for Alex in previous sessions. We've got our writing and our math. Remember to add a new one. We click add a new skill survey and we'll get a placeholder. This is where science takes a little bit of a turn. Like everywhere else there's a one-off skill survey for just ELA language or just writing or any of the math domains. But for science, as Deb was talking about, it's one skill survey that covers all of science for every student. You only have to do it once. So there's not a earth and space skill survey or a life skill science skills survey. It just one covers all of them and you just do it once. So you click the kind of catchall science for Allans and it is long. There's a lot to it. You only do it once thankfully. But it, there is, there's eight different practices that you have to account for, but same apply a date that you completed this on. And then as Deb mentioned, so if you remember the other skill surveys that we looked at, you had to make a selection for every single line that came up. This one's structured a little bit differently where it breaks out. Here we see practice one asking questions and then practice two, planning and carrying out investigations. It's just about selecting the skills that the student could do at least part of the time independently. So in practice one, maybe they can ask clarifying questions or use observations and that that's it. The rest of them are just too high that that's fine. And then in practice two, maybe they can just do this, I won't read them all to you. If you're doing access skills, you'll find that probably most of these are all too high that they can't do any of them. Just remember that hiding at the bottom of everyone is my student cannot perform any of these skills. So if all of them are too high and if you're doing access skills, you're probably just gonna scroll through and go right to this one. 'cause most of them will probably be a bit too of a high level or unobtainable for that student. But you're just gonna work through you from top to bottom for all eight practices of selecting what skills that student can do independently, at least some of the time. So number eight. And there we go. So you'll come to the end and then we can go back up the top. If you save this, as long as you made a selection, the little header will turn green. So if you skipped one, you'll know it because it won't be green when you come back to it. If you try to create the strain and it tells you haven't completed your skill survey, you likely, maybe you thought you checked off this, my student can't perform. But you just didn't, you mis you mis clicked and didn't quite grab it. If it won't let you create a strand, you probably missed one of these eight sections. But let's go back to our table of contents. And now that we did our skill survey, we can create a strand. So we'll go to our strand cover sheet. Here are our ones we worked on previously for math and writing. Let's add a new strand. We wanna do science. And we see, remember Alex is a grade five. So we've got the four disciplines of earth and space life, physical and technology engineering. You don't have to do all four, but remember the qui requirement is three. So you have to do three different. So your choice of three of these four, let's just pick the first one we see we'll, we'll I'll show you how to do a earth and space. Click okay. And we've got the, the building blocks of the Saran cover sheet for earth and space. A lot less stuff on this than if you came previously and saw when we built that math or even the writing one. It starts us off by reminding us where we are with Alex Grade five, we're working on earth and space and the first thing we come to is, okay, within earth and space what core idea do you wanna focus on? And you do the dropdown. And in this particular case for Earth and Space, we see three different available core ideas. This is what I was hinting at before. So remember I pointed out in that table of contents where you could bring up that, that related topics for core idea and the high quality units, this link view topics and it'll be just earth and space. So if I click this, it'll open up a new tab and here you go. So it's pulled out just the earth and space by core idea. So here's all the topics that are related to Earth place in the universe. And then these are hyperlinks. You click these and it'll take you to the related site for, for these related units that the content experts have attached for you. And then we've got earth systems and the same thing, topics and then earth and human activity. So a nice kind of one shot spot based on exactly what you're, you're working on. So earth and space. So just remember that's there, it's, it's pretty helpful to get a, a good space to get some ideas for units and to get a concept of what exactly it is made up of All these different core ideas. It'll give you kind of that bullet list of the topics that, that you will likely find. So it's a, it's set up to kind of not let you do something until you work your way through the form. So I can't select a learning standard or create summary sheets until I tell it the core idea 'cause they're all filtered based on that core idea. So it's sort of a little bit of a plug and chug to, to get to the, the point to where you can actually start creating summary sheets and selecting entry points or access skills. So let's say we wanna do Earth place in the universe, we select another big red button, use this core idea and it'll drop in the placeholder for the one I selected and give me the appropriate learning standards for that. And there's usually not that many. They're the pretty, pretty tight group. So you can select and use the standard, the resource guide is here as well. So in this case it'll pull out just the earth and space. It should bring up the related resource guide for what you're, you're working on. In this case we've got earth and space, which doesn't go to high school. So the highest earth and space does go is grade eight. So from there we've dropped in our learning standard. And when I did that, it happened quick. I don't, I don't know if you noticed, but this new button shows up where now I can create a summary sheet. So I'll do one and then we'll, we'll pop into one of those other students I had in my student list. And I'll show you what it looks like for like a complete submission, what the basic building block of that will be. But to show you the, the, the how and each form works we'll. We'll build one out together. So let's click new summary sheet and we get a placeholder for a summary sheet. I'm just gonna drop three in. Just remember that you have to do three different summary sheets each showing a different practice so it doesn't know what practice you've selected yet. So it just gives you a placeholder of zero. But this whole grid will populate as we go into the summary sheets and start making some selections. So let's build out this first one. So just like when we are doing work description labels or data charts in the grid, you just go to the summary sheet and it will pull it over everything it know the student, what core idea we're in practice number. This will change in just a second. I'll point out that you don't have to tell it, it'll, it'll know based on your selection of entry point. But this throws people sometimes to see what looks like a checks box and they just want to click in it. It won't let you, it'll check it itself. When we use this another big red button find entry points, once we select that skill, it'll populate a whole bunch of stuff on this, this page for you that you don't have to worry about. So again, we have this, my description, I'll just say global space more than space. But this is just for you to know which one of those summary sheets is, which a little as Deb referred to breadcrumbs for yourself. So you can use it or not. And I just to remind you, so if I go back to my strength cover sheet in this big red bar, whatever I type in that, that yellow box will show up here. So it's just there for you to know that, okay, this first one is something I'm doing about space or planets or, or whatever. You can write whatever you want in there. It's just there for you to be able to quickly tell one of these from the other. 'cause they're all sort of generically placed in here. So let's pop back into this one we were working on. We'll give it a date of today. And then, so the core essence of, of this is this, again, this big red button, find entry points. And when I click this, if you're with us the other day, it'll be somewhat similar. So again, we've got these tabs at the top, they're not in math, they're often just single grades. So 3, 4, 5 here we have grade spans and it'll start you at the span. That's appropriate. Alex is a grade five. So we're in this grade three to five and we've got, it's plucked out. Just all this, the skills based on the core idea that we're in, which is why you have to tell it from the start. 'cause it'll only show you related to the proper core idea. And you can go up if you've got looking for some higher level skills. But then you can also go down. So pre-K to two, three to five. And same disclaimer as everywhere else. If you see it on this page, it is vetted and linked and appropriate for the core idea that you're working on. These are all fair game. It's really about selecting the skill. It's meaningful for what you're working with in the student of what you want them to, to both learn and achieve. So the slight difference is that access skills gets its own tab. Now, before it was always at the lowest grade, but because these are all broken down by the practice types, see how they're, these are all the entry points for one and two and three. The different eight different practice types are all here. Access skills is also broken down by all those practice types, but they're just all specific access skills with content of exploring materials or making a request or choosing activating switches, all the, the classic sort of format of access skills but also set up to be available within, there's just a lot of them within the eight different practice types. So for Alex, let's go to pre-K to two. And let's say that he will record questions about the sun's position at different times of day. So when I click, it will know that. Now this is practice one, it'll check off entry point for me. It'll tell me what page, the resource guide, what grade span I got it from, and then drop in the skill. It's a skill and not a measurable outcome. So you don't have to type that XX accuracy and XX independence. It's not the same as we looked at in the core concepts of building a measurable outcome. This is just the sort of overarching skill that you're working with. And then from there, the only other thing on this page is, is really describing what you might have done to address that skill of asking recording questions about the son's position. So the big old text box here, you can be quite descriptive. I won't write a whole description, but I hopefully you get the idea that if you have a work sample where they, they had questions about the son's position that they were doing based on their observations, he would describe how they did it, what they did. If you had described some stuff you can give a nice overview of what it is you're attaching for evidence for this strand, the classic self-evaluation box. If you need a brush up on self, self-evaluation that was covered in that core concepts. But there's lots of different approaches to self-evaluation. You can, the student can just reflect and you can say the student really enjoyed this particularly said it was their favorite thing they did all day. They were proud of what they, or a lot of teachers have a separate self eval, like where a student can circle I like this, I hated this, I did great. And they just submit that for everything that they do. And then they just say, see attached here. Just to point the reviewer to say self eval is, it's included elsewhere. It's not really obvious in the evidence itself, but there's a separate form for just self eval. And then it's just about selecting with that evidence that you're attaching what was the, the accuracy and the independence that was captured for the work that the student actually did. And then just remembering to attach that actual evidence. So now when I save this, when I get back to that strand cover sheet where we were building these summary sheets, notice it's now dropped in the practice, the date, my little breadcrumb and whether or not I had self eval kind of attached to that one. If there's anything that's super helpful about this little grid, it's this first practice column. It's just a nice spot. Remember what the requirement is? Three different summary sheets, each showing a different practice. So done correctly, you should see three different numbers in this first column. So if you don't, then you don't have three different practices. You selected entry points that were either all in the same practice or two of the same. You should see three different numbers. So let me take you over to another student, and I'll show you kind of what it looks like to have one kind of ready to go of what it you should expect to see. So let's go back to our student list. Say goodbye to Alex for now. My, my dear friend, Ima Science, let's see what she's up to at grade eight. So let's go into our strand list. And you should see something like this. So this is grade eight. So you don't want three different life science. You should have a life science, a physical science, a tech engineering, or a earth and space. So three different strands of science for five and eight is what you're looking for. Let's just, so same format for each. So let's just take a peek of this life science. So we've got the string cover sheet. The core idea that they're working on with a student is molecules to organisms. And as we scroll down, this is what you should kind of expect to see when you have a complete strand in this case for life science. So notice I've got a summary sheet that I'm working on, plants and the water and how they grow. That was, I pulled that from practice four. And then something about the plan parts and a model that's practice five. And then I have an entry point about how plants grow. And that came from practice eight. So I've got three different, four, five, and eight. We get the question sometimes, do they all have to be on separate dates? In this case it is, but they don't have to be. That's the, that's the nicety of a unit sometimes as you can do multiple things and they might be on the same day, but you did two different practices, two different skills. That's okay. You can do multiple dates on these as well. It's not like on the data chart where we're looking for eight individual unique dates. You can do multiple things within a unit on the same day. Totally, totally fine, but it should look something like this. Remember up at the top, same as what we looked at elsewhere within this strand for life science. I can do print and print multiple, and I'll do my summary sheet and I just kind of have some placeholder text in a lot of these. But you'll get the idea. Here's my first summary sheet, my entry point that I selected, and then here's my second one for practice five, and then my last one for practice eight. So you print this out and attach the actual evidence that you're submitting for each of those. You might be asking, what about that skill survey? Normally this would just show up here, but because you only need the one so you don't have to print it for life science and then print it again if you do physical science. And then again, if you do tech engineering, you put the skill survey in one time. You don't have to do it for every strand. So it'll give you a, a reminder of saying, please note only one copy of is needed for the entire skill survey. So it won't force you to print it every time, but it offers it up here so you don't have to go back. If you click that, you can print it and just do it once. Most people just tuck it right at the beginning of science before they even get into their strands. Just put it in and then all your, whatever your stands you're doing can fall right behind it. But just a reminder to save you the grief of doing this kind of long multiple practice type multiple times. You only have to include this once, which is what it's trying to prompt you to do here. That only one. So let's take a quick look at what a high school might look like. It's kind of classic, same, same but different. So let's go back to our student list and me high school. So here we've got same, same general setup, but here I've decided that biology, so in high school you've got the choice between biology or intro physics. I've got two ready to go and I just wanted to show you the third. So the idea is, is that you have three strands of the same. So you're not making that choice like in five and eight where earth and space and physical, it has to be biology one, biology two, and biology three. And the key difference is that each one of those has to be a separate core idea. So I'll show you, let's look at what, what we have going and then we'll build biology three. So notice on biology one I'm working on from molecules to organisms. And I've got my three different practice types on my summary sheet, which are, they work exactly the same and we can, I, I don't believe these are all built out, but you'll see same thing, entry point descriptions, accuracy and independence. Same, same thing we looked at five and eight. It's just about the content is changing to be biology. So remember we're doing molecules to organize them. So that was our first biology strand. Let's take a peek at our biology two. So now we've got ecosystems is what we're working on. So different than the first one, but we still have got three summary sheets with three different practices. So let's take a quick look at how we would drop that third one in there. Let's go back to our strand list. Add a new strand, science biology three. So you only have the choice between physics and biology. And then just, just letting you know, you have to do three separate strands of that. So one, two, and three. Gut biology. Three. Remember one, we did molecules and organisms. Two, we did ecosystems. So by default we have to make a choice between either heredity or evolution for or a third, they need to be three different core ideas. That's the thing to remember that's unique about that high school science. So let's do heredity, lock that in. And then from there it's the same as what we just did. Learning standard, create a summary sheet and then selecting the entry points or access skills of start us at high school. But these same, you'll notice we're in biology, but as I click six to eight, it'll link back to the life science. So that's the continuum for science. So physics will go back to physical science and biology. As I go down in the grades, it'll skip outta biology to the related skills on that core idea for life science. But access skills still there. So you can go from high school back to the same access skills for life science slash biology, but same process. Just select the skill, fill out the rest of the information. And then when you're looking at your strand list, you should have something like this with biology one, two, and three each showing a different core idea. And then within each three summary sheets, each on a different practice. So I hope, I hope that helps connect the dots of exactly what, what it should look like far as what's required. It's a, people get lost in the numbers sometimes of I need how many of what and where. So hopefully this helps show it a little bit clearer for you as Deb was walking through as a practical of, of what you are kind of looking to do. So I'll, I'll hand it back to Deb who will wrap it up and I'll take any questions if there are questions out there, but thank you very much.

**Deb:** All right, thank you Kevin. There is a lot of information, but it's, once you start, I believe that you'll find it's much easier than how we talk about it. I think it is a matter of the numbers. So if you didn't get to come to the writing yesterday and you're new, you can come to the writing next two weeks in October 22nd. This science, if you came today, you do not need to come again. It's the same exact session. And you don't need to come to two this afternoon at one o'clock. If you are in grade eight and grade eight only, you will need to do civics this year. Civics says new for everyone. So if you haven't attended, it will be today at 1:00 PM or if you can't make today, it's next Wednesday the 23rd. And if you can't make that, then you can wait until the recorded version is out. If you have any policy questions, you need to send them to MCAS. Let me see, I think we have, do we have a nice, yep, there it is. mcas@mass.gov. You can also, if there's science questions, you can send them to mass.gov and ask them to send it to their, to the science specialist at the department. Well, that's one of the best ways to do it. But I would also encourage you to look at this PowerPoint that we gave you, maybe review it again, it does have a lot of samples and examples that'll help you get going and maybe take a chance on one of those units. Okay? So thank you everyone for coming. We appreciate it and we'll hang out and answer questions until you're finished. Thank you to our interpreters, and we'll see you this afternoon.