Video 2:
How to Create Dynamic STEAM Experiences

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Welcome back to video two of our preschool steam training series. And in this video, we are going to talk about how to create these dynamic steam experiences, even in our current circumstances. So we will address how to do some of these things inside a COVID environment or virtually teaching. But first, let's recap what we discussed in video one, which by the way, if you have not watched video one, pause this video, click the link below go watch video one first. Okay, so I'm trusting that you've already watched video one at this point. And in that video, just to recap what we said that seam is more than an acronym that it is really about encouraging our learners to build knowledge about the world around them through observing asking questions and investigate And we really stress the point that we want our learners to be curious and ask questions. Now, we also introduced the hamster wheel of lesson planning, of how our current teaching model where you pick a theme, and then you have to find the lesson. And then you have to gather the supplies, and then you introduce the lesson. And then your students do the lesson. And if you notice, it's Teacher, Teacher, Teacher, teacher, and then students, and that this current teaching model is what keeps us teaching tired. And that's what I call the hamster wheel a lesson planning because say you find this amazing stem challenge and your students are really involved. Well, now you have to go through the whole hamster wheel again, of finding your next challenge. And so this current teaching model is what keeps us feeling teacher tired. It's what keeps us feeling stressed and overwhelmed.

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And we introduce the idea of creating a preschool steam experience, where we have a three pillar approach so that you can stop being teacher tired, and rather step into being a successful steam educator.

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And no matter what each group you're teaching, and if you are a full time steam teacher, or maybe you're just integrating steam into your classroom, but when we say a successful steam educator, we are talking that you are confident that the strategies you are using are helping your students build up that knowledge that we talked about in our definition of steam. So you're helping your students expand their learning experience by bringing in successful strategies that are going to encourage them to be curious and ask questions. Now in this training, we are going to go through all three pillars. And then we're really gonna dive into the curious explorations, because that is where you can easily get started today with creating a steam experience. So I don't have time in this training to go through the whole thing. But our masterclass training on this whole three pillar approach is currently available inside our

member lab, which I will be discussing more about throughout this training. So first, let's start with you as the educator, you need to be steam savvy. So you need to understand, first of all, what are the different disciplines that you are using to support your students? So it could be bringing in science, technology, engineering, art and math, but understanding what that looks like at the preschool level, or a pre K level or kindergarten level, whatever level You are teaching, you understand what skills and standards your students are working towards. The students don't have to have it mastered. But you know what standards or benchmarks you need to achieve. And so you are able as the educator to bring that into your classroom. Now one thing I want to point out and this is a question I get asked all the time, is about technology and screen time. And technology, when we're talking about the lens of STEM or steam technology actually refers to the use of tools. And a tool is simply a man made object or thing that helps us get a job done easier. And so in a preschool classroom, there are many tools that we use, it could be scissors, it could be pencil, all of those are simple tools that help you get a job or help makes a job easier. So when we're talking about technology, because the way it's used in society, we automatically think of electronics. But Electronics is simply one type of tool. So when we're addressing technology and technology integrations, yes, it could be a computer. Yes, it could be a tablet. But it also could be a ruler. It could be an inclined plane that we mentioned in our first video. So there are many different tools that you can bring in and use as technology integrations. Now, if you say to a parent, oh, we use pencils today, we did technology, they may not get that. So it also could be advocating to your parents or to your administrators and say, Hey, you know, technology GE goes beyond electronics. Here are all the different tools we use inside our classroom. So part of being steam savvy, is then advocating to others how this looks inside your classroom. So being steam savvy means you understand the different disciplines and you understand how to use that to support your students. And we'll talk more about this as we go through more examples of steam experiences. But I just wanted to introduce what being steam savvy means in art steam experience.

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We're going to move to curious explorations, and I'm going to just mention this and then we will come back and dive deeper, but curious explorations is simply sparking curiosity, sparking that wonder

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it is using sensory play to encourage your students ask those questions and to be curious. Now we're going to come back and we'll walk through this whole model by just wanted you to share it right now. So that you can see when we're talking about curious explorer explorations. It goes into the view of the child, your role of the teacher, the tools you use, and the environment that you create. So that is curious explorations. And the final part of our three pillars is extend the experience. And this is where being seen savvy comes into play. So you create an exploration, you get your students curious, they're asking questions. Now you as the scene savvy educator, you can bring in the different strategies to help them extend the learning experience. So what do I mean by that? Well, this is where you could bring in the engineering and design process or Where you could bring in the scientific method. This is where you bring in challenges, investigations and what we like to call celebrations, where it's a collaborative celebration of what you have learned. And when we talk about challenges, this is where you are solving a problem. And many times, this is what you see on Pinterest about STEM. If you type in STEM or seen for preschoolers into Pinterest, or Google or Teachers Pay Teachers, what you're going to get is a whole bunch of lists of challenge activities. We see a challenge. It's just one part of the experience.

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So if we go back to that hamster wheel of lesson planning, when you're searching for Steam activities, and you're getting all these challenges, and then you got to fit them into your schedule, that is what is keeping you teacher tired and on this hamster wheel of lesson planning Both we step back and look at it as a whole experience. And we can use different challenges or investigations, but it stems from the students discoveries and curiosity that's established during the Explorations. Now I'm gonna, as I said, we're gonna dive a little deeper into this, and I'm going to share with you what this looks like. So if you're feeling a little overwhelmed, don't worry, it actually is quite simple. And we're going to show you here, but just to review what the three pillars are one beasting savvy, so you must understand what the different disciplines are and how they can support your students. Create curious explorations, and we're going to dive deeper into this one and extend the experience. So based on what our students are curious about, how can we extend their learning? Okay, so before we dive deeper, let's take a look at how this all comes. together. So here is a student that is outside exploring and finding nature objects that they find interesting. So then we collected different objects. But in the midst of this, it was actually springtime, the students notice the signs of spring. So we talked about that discussed it, we recorded our findings. And really the conversation led to flowers, but not only flowers, but how do flowers grow? And what are the different parts of the flower? So then we brought in real life flowers, dissected them, analyze them made our own discoveries about them. We created a work of art based on what we had learned. And then we put it all together into a collaborative mural, where we talked about the different parts of the flower and how it works to help them grow which was the initial curiosity of the students. Now let's compare that to a different and this is a pre k example on the left. So this is from a real pre k classroom. And I'm not saying one way is right, or one way is wrong, but I just want to make you aware of which learning experience do you find most impactful?

So if we look at the example on the left, we have the parts of a plant. And here the students cut out the paper, they drew and colored in the different parts of the flower, and then each of the flaps opened up and they wrote that what the part was on the inside versus our steam experience on the right where we actually made a collaborative mural based on the different parts of a plant. But then also behind that was this whole collaborative mural came from initial observation. Made outside, we discuss different types of flowers, how flowers grow, we got to dissect real flowers. And so all of that went into then creating the mural. So there's a lot more than just cutting and coloring, but there is a lot more into the experience. Now, once again, I'm not judging that one way is right and one way is wrong. I am simply introducing a different way. So if we go side by side, we have our hamster wheel model where we've talked about where its Teacher, Teacher, Teacher, Teacher, teacher, students, versus our idea of a steam experience, where it's teacher, student, teacher, student, teacher, student, teacher student, where it is more balanced. So when we're creating these same experiences, we start based on student's interests combined with the learning standards. So yes, you may have to do with theme that may be the cited for you. But what are your students curious about within that theme that and then you spark curiosity through open exploration, open ended play, you observe what your students are curious about. And from that you can scaffold their learning and build upon their knowledge and skills. And so in our approach, it's a much more as I said, balance where it's teacher, student, teacher student, so that you are not the one doing all the work. Because if you're doing all the doing, you're the one that's doing all the learning. So here we actually are observing our students in their play. we're documenting. We're reflecting not only with our students, but what we observe during the day.

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So hopefully that clarifies a little more of how this can work inside the classroom. So let's get started with how do you how do you create these seem experiences. Now, as I said, most people think it's just

stem challenges. And that's where we talked about if you go onto Pinterest, you're going to get just a whole bunch of challenges, which is problem solving. And these are good things. But think of the experience of the learning. And this is where we say actually has to start with exploration. You have to give young learners that time to play and explore and time to make their own discoveries. We have to take into account the view of the child, our role as the educator, what tools we have available, or that we can use and the environment around us. All of this goes into designing these curious explorations that promote open ended play. We need our young learners to play more now than ever. And we're using the term explorations. But really what we are talking about is open ended play, we want to give them a variety of experiences that incorporates the different senses. So sensory play is important, because this is how young learners learn. It's about how they learn about the world around them. If you think of, especially a young toddler, one of the first things they do is put something in their mouth to see if it's food. That is how they learn, like, Oh, this tastes good. I like this or Ooh, this does not taste good and they spit it back out.

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So from a very young age, we use our senses and that is how we learn So when we're talking about creating these explorations, it is open ended. Which mean means there is no desired outcome. There is no right or wrong answer. And we're letting the children make the discoveries. We're letting them find out what happens when they mix different colors together. Or what happens when I squeeze the bottle a lot and a lot of water comes out, or what happens when I squeeze it just a little bit and a little bit of water comes out. We are allowing time for children to explore and to play. So many times we've talked about tools that I see educators will introduce a tool, something new, and then they get mad at the children for playing with the tool. And I even saw this happen in elementary classroom. We have to give children time to play with that tool. So they understand how it works before we can Use it to do say a challenge where we're trying to solve a problem. So as you start to begin to create explorations for your students, think about the view of the child, you are going to know your students. Now I know we're approaching many of you are just kind of starting the school year, or maybe you're ending the summer and you will have a new class starting here in the fall. And this is where How can you get to know your students? How can you get to know what do they like? What do they dislike what TV shows Do they like to watch? It's understanding what interests your students have. And it could be as simple as communicating to the parents or families and simply setting up a few open ended explorations and just observing and listening to the stories that they tell you. That is gonna be How you learn what your students are interested in? What is your role as the educators, so many times as educators, we want to dive right in and guide the play. Okay, I'm going to set up the sensory bin, but you must find all the letters of your name. Well, that right there makes it a challenge and no longer an exploration. So if you put a parameter such as trying to solve a problem, now it's no longer an exploration. So you have to understand that when you're setting up an exploration, you are observing your students in their acting with the materials. Now you can certainly change things out and I many times in the middle of the play, they may ask me for a tool, or we may come up with a whole new idea right there on the fly. But so you are the educator. You are the Adult in charge. And obviously safety, like here in the picture is water. So you do have to have supervision. But you want to observe and listen to what your students are showing and telling you. And a question I also get are, well, what if my students aren't asking questions, we'll listen to the stories that they are telling you. Now, for those of you wondering how to do this in a COVID environment, we are going to get to that in just a moment. So hold on, because full disclosure, this picture was taken prior to COVID. So yes, there were many hands in the water bucket. So we will talk about that coming up. But I want to finish with here, how does your environment and the tools you use also support student curiosity and inquiry and this is where you can set up different explorations

throughout your classroom. Whether it's sensory bottles, a sensory been a sensory table, it could be a light table and using different light explorations. It could be incorporating small world play, where you create small little environments and worlds and the students can interact with the materials. This is really great for encouraging story play, and allowing children that time to play and act out their own stories.

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It also could be incorporating loose parts. loose parts are when you have a material and it can be used more than one way. So for example, say you have a plastic cookie from your kitchen area. Well, that cookie is pretty much a cookie. But if you have like a wooden circle, well now that could be a cookie. That could be a pie that could be some Completely different that they come up with. And children have much better creativity than we do as adults. So using loose parts are providing a variety of materials that can be used in different ways. So there's not one prescribed way that you must use that element. And then of course, one thing we like to do is use our Tinker tabs. And I'm not going to go full into what the Tinker tub is. But I do have a post and I will link that below this video that will tell you more about how to set up a Tinker tub if you're looking to get started. But with a Tinker tub, it's kind of like the loose parts where we have a variety of materials and students just get to interact and build and create and make stories with the materials. Now you may see we do have a creative prompt. And that really is just help those students that are not used to open ended play. Occasionally I do have students when they're not used to open ended play in explorations, they kind of don't know how to get started. And so sometimes we'll send out creative prompts. And that helps them springboard different ideas. And usually, they may use a prompt to get started, and then they’re off and running all on their own.

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So you may see in the top left corner, there's a picture of a skyscraper. But with the Tinker tub, we are not looking to build a skyscraper. That would be a challenge. So that may be something I follow up, I may introduce the materials and the Tinker tub, and then bring in Oh, how tall can you build a skyscraper as a challenge to extend the learning, but when I'm just introducing the Tinker tubs, it's going to be open ended.

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Okay, now we're going to dive deeper into how do curious explorations work in our current circumstances of a COVID environment. Now, first, I would like to say, I work with educators, we have educators from all over the world that are signed up for this training, which is amazing. I think that is great.

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But I can't possibly speak to each individual circumstance. So just know I'm going to suggest a variety of things, and you take what is going to work for you. And then if it doesn't work for you, you can just leave it you don't have to do it.

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So So use this as a starting point to help create curious explorations are going to work for your current classroom. Okay, so I just want to say that that not everything I share may work for you, but take what does and that can spark your own creativity as you create explorations in your classroom. Okay, the first thing I want to do is I actually went directly to the CDC website. And for those that are not in the US, the CDC is the center for disease, Disease Control and Prevention.

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And I because I wanted to take their actual what they have printed, and not from what's on social media or what's in the news, but what is directly on their website. And they have this paragraph at the top of the page, and where it talks about, you know, these are the considerations for schools to protect students and teachers and everything. But notice, I bolded it in red. So I did the read, but it says how to implement these considerations while adjusting to meet the unique needs and circumstances of the local community. So what that means is, these are considerations They are suggestions, and that each community is going to have their own unique needs and circumstances.

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So know, your classroom is going to look different than someone in another state or someone in another country, because you aren't meeting the needs of your students.

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Now, before we dive into this, though, that is from the CDC, I do fully recommend you need to follow the guidelines of your local authorities. So it could be your local department of health, your licensing board, your administrators, we do you probably do have guidelines that you do have to follow, but this is going to look different in each in each different areas. So just keep in mind that one, no one has the official direct answer. I mean, no one knows for sure that this will work or this won't work. These are considerations. They are suggestions.

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However, with that said, follow the guidelines of your local authorities. Alright, hopefully that's clear. But what I want to say is, regardless of what the CDC or your licensing board or your administrator says, you are the expert for your classroom, you are going to get to know your students, you're going to get to know their families and you are going to serve them the best way you can. Yes, safety and health is top priority for everyone, including yourself, but you are the expert.

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So as we go into these different suggestions, you are going to know what works and what is going to work and what is not going to work for your classroom.

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Okay, I took this directly to from the CDC website. I will put the link to to this page in the links below, but the CDC, honestly, when I was looking up like how the sanitize toys and stuff, there's not a lot of information.

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This is in their early childhood section, this was all the information about cleaning and sanitizing toys. And as I said, I will put the link so that you can do your own research and read it. But a couple interesting things is one, it does suggest that cloth toys may or may not be the best and that they shouldn't be shared. And obviously if a toy goes in the child's mouth, it needs to be cleaned. So that's all in the top diagram. And then below and I know it's kind of small print on the screen. That's why I'm gonna put the link below but it basically recommends like washing the choice What we should be doing anyway. And if a toy goes into someone's mouth or it gets dirty, you set aside a dish. And this is where I'm going to read it. It says place in the dish pan with soapy water or in a separate container Mark

soiled toys and keep the dish pan and water out of reach from the children to prevent the risk of drowning. Washington with soapy water is the ideal method for cleaning. Try to have enough toys so toys can be rotated through cleanings. I mean, this isn't something totally out of the realm of what we should be doing anyways. So using soapy water for cleaning toys. Now I'm going to go through some examples here. As I said, you are going to have to follow the guidelines of what you are given with your local authorities. So they may say things differently.

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And there's already been conflicting like some places can do water in a sensory table some places cannot. As I said, you're going to have to take this and pull out what works for you. But here's what I would do if I were starting in the classroom. I would start with outside explorations, I would try to be outside as much as possible. I would use nature found objects such as rocks and sticks. I would have buckets of dirt buckets of sand and let students begin to play and explore it that way. I will try to use the resources from nature that I had available to me. Also water now as I said, Some places can play with water some places can't so you're going to have to figure you're going to have to follow your own guidelines, but simply using water and water mixed with paint or water mixed with oil. We're doing individual containers of water. And in the top left corner you can't really see but we had a fan blowing on the individual bucket of water. So setting up simple water explorations using the idea of our Tinker tub kit or loose parts, but keeping it individual, whether it's using smaller buckets, a shoe box with a lid on it, or even simply a plastic bag. And the plastic bag could be a great idea because if you have to teach virtually you could send them home bags would be great if you are going to be doing a hybrid where they may be at home and then in the classroom, or if we get into a shut down situation that the bags could go home and they could still interact with them. But when you're keeping when you're creating these individual types of Tinker tubs, keep it real simple. Don't put out a gazillion different types of materials, we try to keep it simple anyways with just two or three different types of materials.

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So here you can see we have it on the tray. So maybe you have different individual tray setup. And when the students done, you can rotate the tray to the soiled container and put out a new tray for the next student. So you could keep it going that way. And by only putting out a few supplies at a time, then you would have enough for your different students. Another way to create a kit is using a kit like this that has a lid on it. And there are many different types you can you can purchase like from Amazon or Dollar Tree. There's many different types.

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And so this is another way you could do it individually. And this had the lid that would close on it so you could even write the student's name on it and that would be their kit. Okay, so how do you set up curious explorations? virtually because I know some of you are starting the year virtually? Well, you want the same philosophy of how can you spark your students curiosity. It could be sharing an interesting photograph, it could be encouraging them to go on a virtual field trip. I know many zoos have like webcams and you can see and observe the animals. It could be doing a video, read aloud of a book, or finding a video read aloud of a book. It could be a Sharon towel on a live format, such as zoom or Google meets. So there are many ways you can still spark student curiosity. Now it's gonna look different than inside the classroom, and that's okay. It's okay. Because you are meeting your students where they are at you are meeting their unique needs. So they need to be at home to learn at this moment. But the conversation that we're having is still the same. How can you spark their curiosity. Now, if you're teaching virtually, it's also important that you are going to have to guide an advocate to

the parents. One, you're going to have to explain why explorations are important, why they are needed, and then explain what their role is, how they can observe what their child likes, or what their stories The child was, was sharing with them, what they should be looking for in their child, like, share with parents, oh, are they holding the scissors the correct way and then have a photograph like here's the way we're looking for them. Because you're not going to be able to necessarily observe all those different skills. So you can tell the parents as you're Child is playing, Hey, keep an eye out and see what they are doing and let me know. And How can parents share their child's discoveries for with you. So using technology? You know, screentime isn't always necessarily a bad thing. It's, a lot of times it's the way we use it. Now, if our students are just passively watching YouTube videos, is that the best use for them? I mean, Now, don't get me wrong. There are some really great YouTube video. So I'm not saying you can't do YouTube videos. But if it's if that is your whole curriculum, you may want to think about how can you switch it up?

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How can parents share with you pictures and observations they have of Oh, my child drew this picture or my child was building this or it's used technology in the live format, where you're allowing the students to get together And allow time for them to share their discoveries share their interests share their curiosity, it could be sharing the favorite toy. It could be sharing their favorite color, but allow that time for students to share their wonders their curate curiosities and their discoveries. And I know we've shared a lot of information in this video. And I certainly don't want to overwhelm you. But I want to leave you with this that we want to keep it simple.

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It really is as simple as this when we're talking about our whole three pillar approach.

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Yes, you want to be STEAM savvy.

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Yes, you want to set up curious explorations. And yes, you want to extend the experience, but it really comes down to keeping it simple like this. You want to spark student curiosity and then extend the Curiosity It really is that simple. How can you spark your students to ask questions? And how can we extend those questions? And you can bring in all the standards, the benchmarks, your curriculum to support the student curiosity. Okay, so our big takeaway thoughts from this video. One, learning is an experience as we havetalked about, it is not a one time lesson or a one time activity. So instead of finding individual lessons, we want to start looking and creating these entire learning experiences. We need to make time for students to explore and make their own discoveries. Even though you know what happens when red and yellow paint mixed together and makes orange we want to let the students explore that and discover on their own We want to create explorations that are based on our students interests, and that sparked their curiosity.

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And with everything going on in today's world, keep it simple. Don't make it difficult for yourself, your parents, your students. I mean, I see so many things on social media, like, Oh, I'm doing this and I'm doing this and teachers are sharing all these great ideas. But if you are just idea after idea after idea, it's going to keep you feeling overwhelmed, and it's going to keep you being that teacher tired. Keep it

simple. Honestly, keep it simple. Find out what your local guidelines are for your community. And based on the materials you can use, how can you spark your students curiosity?

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And then how can we extend and learn. It really is that simple. Okay, I'm gonna leave it there for this video. coming up soon will be our third video of this training series. Thank you so much for listening, and until then happy steaming