KE engaging schools & communities with STEM

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**SPEAKERS**

Loretta Mordi, Conor Elis, Ailsa Brien

**Loretta Mordi** 00:16

by giving you know a quote from science museum group, I mean, STEM/STEAM means science, technology, engineering and mathematics plus arts and design. So everybody has a place in it, even though we see a lot of bad science, which also include the all the things that we're talking about climate change, environmental sustainability, and the like, but also the design and the art within our own galleries and elsewhere. So science group Museum's group said by connecting the past, present and future of our world, museums show how an understanding of science technology and engineering and mathematics alongside art and design has improved and even transformed our everyday life. And I like that. I really do like that quote, indeed, because if you look everywhere, I think science is everywhere, even in your kitchen sciences there. My husband is in a case most of the time, so why can't you just do even a solution of you know, that salts, which is what is the solution? And it keeps thinking, Yes, don't get what you're talking about where? Science? That's what it is. Next slide, please. So today, why are we talking about it? STEM education and training has a way to help us to understand our own understanding and appreciation of the national, natural and physical world, and the broader universe around us interpreting and analysing data and information, research and critical inquiry to develop and test ideas, problem solving, and risk assessment, experimentation, exploration and discovery of new knowledge, ideas and product, collaboration and working across fields and disciplines, creativity and innovation and to develop new products and approaches, most of which we will be familiar with. I don't need to say say that. But next slide, please. Museums, really do we have a role to play. In this museums, galleries, heritage organisations, we have a role to play, to support STEM STEAM learning in and outside the classroom, help reduce equity gaps in participation and achievement in STEM and STEAM learning all our collections, you can help us to tell the stories to tell all of the history to tell, you know, make young people understand the origin, why we're talking about it than a fact that is equals inquiry, that is curiosity, and all of those we are able to do so we're also able to increase access and participation a variety of audiences, especially with early years, additional support needs and underrepresented groups in STEM and STEAM learning programmes inside and outside venues. Next slide, please. I'm not going to talk so much about the support, we have today, just now I'm going to skip that. So what I'm going to do is, I'm going to end this section of introduction, first introductory remarks and Keira if you just stopped sharing just now. So the knowledge Exchange today is about the increasing connection and engagement of Scottish museums gallery and research organisation with STEM education, using our collection, inside and outside our venue. So our guest speakers today are, they're going to enthuse and inspire us with their presentation. Both of them are really gearing up for this one. And when I asked them to be our guest speaker, they were like, yes, it didn't even take me long enough to convince them that they should be here. So they're quite here on their own and they're going to be inspiring us enough for us to actually then be able to get some outcomes, you know, they're going to tell us how we're going to increase you know, our own confidence to develop programmes and support STEM learning in gallery and classroom. To increase our we're going to increase our collaborations across the museum sector, local and regional schools to help reduce equity gaps in participation and achievement in STEM learning and then increase all of our audiences and improve our collections in support, you know, supporting learning, STEM learning. So without much further ado, the first speaker guest speaker that we have today is Conor and he is the head of learning and engagement at Dynamic Earth. And I'm going to leave him you know, to tell you all about himself and their work at dynamic Earth and how we all can work and collaborate we can and please Conor enthuse us within science and STEM.

**Conor Elis** 05:19

Great and no worries. Thank you very much, Loretta. And can I just get a thumbs up or some sort of acknowledgement that my slides have loaded? Perfect. Thank you very much, Keira. And so good morning, everyone. It's really lovely to be here. Thank you very much to Loretta for that lovely introduction. My name is Conor Ellis. My pronouns are he/ him I'm head of learning and engagement for dynamic Earth, and which is Edinburgh's science and Discovery Centre and planetarium. So we're not a museum. We're a Science Centre, we could talk about the similarities and differences all day long, I'm sure. And but obviously, we have a lot of areas of crossover, particularly around programming audience development, and or being very cause driven organisations that are passionate about engaging people in the world around them. And so what I'm going to do this morning is give you a little bit of an overview and context to our organisation, some of the learning and engagement programmes that we run, and how we support the kind of STEM engagement landscape across Scotland and across the UK more broadly. And then at the end, if you've got any questions, you can, you can let me know. And so to start off, I just thought I'd give you a little bit of context. So Dynamic Earth is an educational charity. And here is our building. Some of you may have been here before. So we are the centre that's positioned right next to the Scottish Parliament with a gateway to Hollywood Park, obviously a site of special scientific interest and with the kind of glaciation and kind of vulcanology kind of background and heritage. And I mentioned that we are the science centre that tells a story. And what we do is we say, We're the science centre that tells that story from beginning to mend, which sounds really cheesy, and that actually quite works for us. And so at our Science Centre, the idea is you go time travelling, so the you go back to the very beginning of time, you work your way back to the present day. And then we all kind of ask ourselves the question, what are we doing for the future of our planets? And in the context of the planetary emergency, how will we all write the next chapter of Earth's story. And so that's kind of what we do as a charity through our exhibition and our programmes and our experiences. And I'll share a little bit more about that with you very shortly as well. And before I do that, I did just mention that we are an educational charity, well, if people don't know that, so our charitable mission is to empower everyone, with understanding and empathy for the earth. And because we believe that we will be the generation that creates a positive future for us and our planets, and through all of our exhibitions and learning programmes, and we work across Scotland to kind of make that vision and a reality. And that's all I'm gonna say on that bit. And our experiences. So what did we actually do? Well, I mentioned that we have an exhibition. So if anyone that's not familiar with us, I'm gonna give you a sneak peek inside. And so this is the first gallery of Dynamic Earth, and it's called Scotland's Timelords. It's all about deep time, the idea that Earth is incredibly old. And then in the right hand side of this picture, here, you can see our time machine. So this is a kind of multi sensory immersive experience, we put visitors in here, it's a lift with special effects. But the idea is it takes you back to the very beginning of time, and then you work your way through a series of galleries back to the present day. So you do things like take in the Big Bang, from the observation deck of a spaceship, you go into a volcanic eruption, an earthquake simulator, which explains tectonic forces and planetary processes, you go on a kind of drone glacial, flyover over lots of glaciers and scenery. And then you walk through a gallery all about evolution extinction, to the point that human beings have been around on our planets. We then take you through a series of immersive galleries all about different climate environments today. So this gallery is called discovering the deep, which is all about Scotland's marine heritage. And we've got some objects in that case, you can see there on the left hand side and lend to us from and National Museums Scotland at the moment. And we also work with a broad variety of science and scientists and curators to kind of create this new space all about Scotland's marine environments. And anyone who's been before will know we have a polar gallery with a real iceberg in it. So this is a gallery all about kind of climate change and the polar regions of earth being laboratories for climate change. And we have a 4D Cinema sort of kind of flight experience that takes you over lots of different climate zones with lots of special effects that come at you. And we also have a tropical rainforest, which is the only place you can come and Scotland and see a rainstorm and stay dry. And so that's that kind of core exhibition experience. It takes about 90 minutes to go through all the galleries. And then we have a planetarium on site as well. So we have a live team of astronomers. And you can take you anywhere in the universe and a couple of different live planetarium shows, but we also have shows that take you into ocean environments and shows about climate change as well. So there are kind of core experiences that most people would come to our Science Centre and do, but we also offer obviously, similar to yourselves a whole host of different learning and engagement experiences. And that's really what I'm going to spend most of my time chatting about with you today, because that's what I look after for, for the charity. Before I do that, I wanted to try and contextualise a little bit for you some of the ways we support the STEM agenda more broadly in Scotland, which might be things that you're all thinking about in your museum settings as well. So I wanted to draw to your attention, some of the main things that kind of guide us and guide our practice. And so the first one of those is the Scottish STEM and training, learning and education kind of strategy. And so Scotland is one of the only parts of the UK that has a dedicated STEM strategy. It's got four different kinds of pillars to it. And one of those pillars is partnerships. So we're always looking for more ways to work collaboratively with like minded organisations, including museums, includingscience festivals. And to kind of deliver the aspirations of that this is the main thing that we report on to government. The other big one that we're really interested in just now is the learning to sustainability Action Plan, which is launching officially later this month. And so this is a really kind of unique approach to learning and science learning in Scotland. It blends outdoor learning with global citizenship, and the UN Sustainable Development Goals. So science centres, and science festivals, I really am delivering a lot of this action plan for the Scottish Government. So this is one to maybe have on your radar as well. And similar to all of you, we also are very driven by the kind of National Curriculum for Excellence priorities. More specifically, we look after kind of the stem and social subjects areas, lots of what we do falls under the kind of planet Earth experiences and outcomes. And but one of the big things we try and do is show that relevance interconnectivity of science and everyday life which Loretta kind of alluded to in the introduction, because science is every aspect of everyday life. And we try and show that across the kind of planet Earth and sustainability areas. The other one that I want to just draw your attention to is a science catheter, which you may have heard of before. And I can drop some more information about this into the chat at the end. And but it's a body of research done by Louise Archer at UCL. And lots of science centres, science museums are using the science capital approach now in the learning programmes and practices. And so I'll drop a couple of resources into the chat later on that one. And we're also kind of guided by realising the ambition. So the kind of national early years practice guidance. And so we do quite a lot of experiences for early years audiences across programming. And this is the kind of main document we go to. And I had to because else is on the call as well. I wanted to draw attention to transforming maths and maths positive nations in Scotland as well. I'll leave Ailsa to do some more chat about these things. And obviously, we're guided by the kind of recommendations of the making that kind of publications as well. And so that's just kind of some of the strategic contexts or what we do as an organisation. And more specifically, how do we turn this into reality in my team? Well, the one of the biggest ways we do that is through our school programmes. And I'll drop a link to this in the chat as well. So obviously, supporting the needs of schools is a really big part of what we do. And as an organisation we see about 30,000 learners across Scotland and also at our centre in the course of the year. And what we really offer is a whole kind of holistic school programme that delivers on the Curriculum for Excellence, learning to sustainability, and encouraging the development meta skills and that meta skills framework that SDS have, and also children's rights based aproaches in a kind of on demand schools programme. And so what does that look like in reality for us, well, we offer science storytelling workshops for early and first level learners, and then interdisciplinary workshops, and a whole range of science themes for all of primary and all secondary. So we offer something from 3 to 18. Basically, in the curriculum. Everything that we do can be delivered indoors at the centre, we do outdoor learning in Hollywood Park, and also in school playgrounds. And we also offer online on demand opportunities as well. Something that we've started doing this year is online, meet the scientists sessions. So we're working with National Museums Scotland on the next one of these with we're meeting and one of their curators in an online session about rainforests in a few weeks time. So we partner with different organisations to deliver those experiences with audiences. And we also deliver careers showcases as well. So there are opportunities for young people to understand STEM pathways, and how they can get into STEM careers in their future. And what we try and do is really add value across the curriculum. So we want to try and give pupils and learners experiences that they can't necessarily have in their school. So we try and offer real and replica object handling facilitated discussions with our kind of experts science communication team, we try and make use of real datasets and specialists kit so for example, one of our workshops has got many earthquake simulators. And we try and offer lots of real world learning contexts as well and really show the global picture. So I guess it's kind of interdisciplinary science and STEM workshops that cover lots of different parts of the curriculum. but it's not just about learners as we know it's about teachers as well. So we do offer and teacher and practitioner support through career long professional learning opportunities. Throughout the year, and we see about 300 teachers a year through these programmes. And what we're ultimately trying to do is evolve teacher knowledge, competence and skills, particularly at primary school level. The way we do that is we take a topic, so rainforests or Scotland's marine environment or polar environments, we bring in experts from across universities or partner organisations to kind of do a knowledge skills session. And then we can kind of give opportunities for hands on practical discovery through interactive activities. So you can see the teachers in this example are doing a sifting activity as part of a marine workshop. And again, we offer these online and in person to kind of have that Scotland wide and kind of coverage. And alongside this, we appreciate that learning is a lifelong endeavour. So we offer a whole host of family learning activities, as well across our family programmes. And so that's everything from you can see in some of these bubbles, we do early years programmes for under 5s, which are kind of storytelling and sensory science sessions. And we do sign showcases so the children the middle bubble, there are with Boaty McBoatface, the kind of awesome marine sub that goes alongside the David Attenborough ship. And we do an outdoor summer outdoor club, that's the picture in the top top left that where we take children to Hollywood Park, throughout the summer holidays and do a whole in depth outdoor learning programme. So we do lots of things here that again, the main kind of partnerships and crossover opportunities, are those chances to meet real scientists and people doing science. In everyday life, we really want to be the platform to connect public audiences with higher and further education or specialists working in a range of different organisations. And so across that programme, that's what we try, and we try and do. And so we see about 50,000 people through those programmes each year. And we also have bespoke colleagues to look after community learning and working with community audiences. So these are audiences that may not come to dynamic earth without specialist support. And so it's working to ensure that there's equity and inclusion at the heart of our programme. There are some nice examples in the bubbles here. So the biggest bubble there on the right hand side is actually a programme it just finished last week. And so we've been working with tinderbox youth orchestra, and they have been composing original compositions original music themselves on the theme of the climate emergency, and then the kind of outcome from that project as they filmed their own music video in our polar Gallery, which is quite cool. And so we're looking forward to getting that and outcome in a few weeks time. Another thing I wanted to mention here is increasingly there are more opportunities for the museum's Association and the science sector kind of equivalent ASDC to work together. And bold futures and mindsets and missions are examples of kind of funding programmes that are enabling that partnership working and Dynamic Earth is a part of both of those programmes. So I just thought it's worth highlighting that those are initiatives that are seeing our sectors kind of increasingly work together. So we also go across Scotland. And so part of the national part of being a national education charities, we're not just based in Edinburgh, we go off all over Scotland, supporting regional science festivals, and also supporting schools and local communities and through initiatives where we can support that. And so our team actually just came back from being in Orkney last week. That top bubble is one of the aurora pictures that you will seen all over the news and on socials. So our team have just come back from supporting schools and community activity in Orkney last week. So we try as much as we can across my team get out all over Scotland to support those kind of wider community opportunities. The other thing I wanted to flag very briefly was, so I mentioned obviously, you have the Museum Association our equivalent of that is the Association for science and discovery centres. And so there's a map there in the bottom corner, I'm not expecting to be able to read that. But we obviously have a kind of vast partner network of like minded organisations who look after informal learning. And, and there are a whole host of partners, including the Science Museum groups and the natural history museum, etc. So there are networks out there where we're already doing quite a lot of collaborative working on STEM and STEAM. And so I really just wanted to flag this because it's a useful website and resources portals check out as well, if you're interested in what Science Center's are doing, particularly around EDI and inclusion work. And some of the things that we've been doing. There's a lot of nice case studies on that platform as well. And that's all I'm really gonna say about our programming. The last couple of things I wanted to leave on before I let you ask some questions. And I hand it over to to Ailsa. it's just why all this is important in general. So I know you'll all be familiar with with these next couple of illustrations. So these are the warming stripes, and the kind of global average temperature change and based on data from the Met Office Ed Hawkins a professor, and I can't remember his university, but he's down south has created these kind of visuals to represent the climate crisis. You may also be familiar that WWF have done something similar with biodiversity data. And so this is the Living Planet Index. So it's kind of global biodiversity and the stripes representing biodiversity change. And so we know there is a problem we all on this call know there is a problem that we need to address. And but I want to do is to end on some hopeful messaging. And to do that, I want to show you this graph which is one of my favourite graphs. So this is the Ipsos MORI veracity index, which is the longest running survey in the UK on public trust in different professions. And I really like showing this graph because you can see at the top of the charts, we're on people's sides. And so the public generally trust nurses, engineers, doctors, scientists, teachers, museum curators, and the people the bottom of the list, they're less likely to trust politicians, generally advertising executives, and journalists and estate agents. And so I like showing this because I think we already have people on our side, people are interested in this. And people genuinely trust the views of science and scientists. So across our organisations, if we can platform if we can show the work of these different professions, and then we're already going quite a long way to kind of supporting those kind of aspirations of addressing the planetary emergency. And I also wanted to end on some nice, inspirational quotes. So there's still time for us to avoid the worst outcomes to solve the problem, we need to understand it, that one is Greta. And what we do in the next 50 years will determine the course of life on the planet that one is Sir David Attenborough, and the other one that I really, really like is we can be overwhelmed at the scale of the problem. But we could also be falling in love with the creativity of the solutions. And so that's all I really wantthought to say I've kind of a whistlestop tour through that. But I hope some of that has given you some food for thoughts. And I'm going to close there, please feel free to reach out to me at any point if you've got any questions, or if you think I can be helpful, and my email address is there. And likewise, if you think there's ways we could be collaborating or partnering on any of that activity that I've outlined, please just do, please just do get in touch. And I will stop sharing my screen there. And I'll hand you over, either to Loretta or to Ailsa, I'm not too sure this coming next. But I'll end there. thank you.

**Ailsa Brien** 21:55

My name is Ailsa, I'm the maths week Scotland coordinator. And I'm based at the National Museum of Scotland. So I'm gonna have a little chat with you today just about what Maths Week Scotland is how it came to be a little snapshot of how some museums got involved in Maths Week, Scotland, 2023. So hopefully, that's some ideas that will sort of inspire you. And a lot of you will get, you know, a lot of ideas from that as well. I've also noticed that a few people who actually are in the snapshot are in or in this call today. So you can look at yourself on that as well. So for more information about how you can get involved, and what I've done is I've kind of split it up into sort of three ways that that museums and galleries can get involved and completely dependent on how much you're able to get involved really, I know that not everyone has the same amount of resources or abilities to get really involved as some others. So I've kind of split it down into easier ways so that everyone can get involved in and use Maths Week Scotland to just kind of share the maths in their collection as easy as possible. And just some sort of support and guidance that we Maths Week Scotland can offer you in order to sort of get involved in celebrating maths week. So just a little background on on maths week itself. And Maths Week Scotland sort of came to be about Conor mentioned in that slide before that making maths count research that was done by the Scottish government that was done about six, seven years ago. And they kind of wanted to have a look at Scotland's relationship with maths as a whole they realised that it was it was quite negative. And there's there's a lot of maths anxiety in this country and a lot of people find a lot of have a lot of barriers or engagement in in sort of group growing the relationship with maths. So one of the things that making maths count decided is that they wanted there to be a maths week in Scotland. And essentially, maths Week Scotland is just a celebration of the importance of maths in our everyday lives. So it's a partnership between the Scottish Government and the National Museum of Scotland. That's that's where I'm based, but I do work really closely with with the Scottish government when it comes to sort of putting together maths week and, and the sort of missions and targets for that. So our goal is to positively transform public attitudes to maths encouraging more audiences to see maths as relevant, important, exciting and inspiring. Maths week isn't really about maths ability or even really maths knowledge. It's just about engaging in and having fun with maths in all its different forms. And that just really more often just sort of involves searching for the maths that there is around us you know, I always say that math isn't everything. And it really is if you sort of take a step back and think about it, so it's just about celebrating it and having fun with it really. We do have an annual week of focal activity in September, October usually is the last week of September and that kind of often encroaches into start of October and that has both online and in person events and that's really popular with schools, families, community groups and adults as well. And we also offer online activity and special events all throughout the year. So in December we have a Christmas countdown, where we share a sort of maths inspired seasonal activities every day for the 20 days leading up to the school holidays. And we often share activities for families during halfterm and the summer holidays. But we're really sort of growing the programme so that it is a year round, a sort of host of activities. It's not we have got a focal point. But we are always getting involved in things throughout the whole year. And you can see that even though maths we could initially think of it's got a strong schools connection, which it does it is to target the whole population of Scotland. So its schools, families, communities and adults, we target everyone and it's a really good sort of tool to sort of grow your connections with your community as well. So just a little bit more information about that annual focal week as well. And because obviously, it is sort of our big week at maths week, so there's a lot of online and in person skill workshops and activities. So for example, this year, some of the online workshops are run by the Open University, they did sort of em skills workshops online, about coding, and like patterns and tessellation. In the real world. There's also online and locally organised public activities that can be things like museum workshops, or trails or community maths, scavenger hunts as well. There are challenges and competitions, they are quite often skills based. But we do have some and we're always open to competitions that everyone can enter. For example, there's one called maths inside, which is like maths, photography competition, where you take pictures of sort of the maths that you've seen in the real world based on our theme for the week. There's also activity packs, that's sort of what you can see in the picture there this year, we did them for early years primary and secondary. They have a real focus on just how hints and tips on how teachers can can celebrate maths we can in their sort of school, it takes it beyond just being how you celebrate maths week in the math classroom to how you can do it in. You know, learning about it in history class learning about English, really cross curricular, that's something that I'm really passionate about is exploring maths, really in a in a sort of cross curricular focus. I also always like to be a mention of how they can use the community to celebrate maths week as well. So there's quite often a lot of hints and tips and taking not only beyond maths, but into the whole school and then into the community as well. The show your working campaign I thought I would just mention separately, that's a really easy way for everyone to get involved in maths week. And just to sort of show how maths is used in every single career. So the #ShowYourWorking campaign I've put two examples up there. It's just a campaign that shows that maths is everywhere and it highlights the importance of maths in all careers. So that's from athletes, to artists, from horticulturists, to hairdressers, just to show that maths is involved in every single job. And it's a it's a useful skill everywhere. two examples there. That's minna from the Scottish Fisheries museums, and Dan from National Museums Scotland just two museum examples that I'd show you. So I'm just going to have you talk through a little snapshot of how some museums and galleries, heritage sites and visitor attraction centres got involved in Maths Week Scotland 2023 Lots of different examples, hopefully, you'll be able to pick up some ideas from this. And also, I think a few of you are on this call to be able to see your own centre getting a shout out. So the first two just the Scottish Fisheries Museum and the Riverside Museum in Glasgow, they both did, sort of maths trails or numeracy hunts. The Scottish Fisheries museum had it just sort of out the National Museum had an actual school visit to sort of, to run through it. So that's just two examples of how just doing something like numeracy hunt and trails can be really successful. There's also workshops and activities that can be held in museums as well. The World Golf Museum, did some workshops on measuring and testing of objects. And the University of Highland and islands hosted a lens lab event at the pure art centre to show master creativity. And I'll also mention that the pier art centre in in Orkney, they did loads of things during the whole week, they really sort of celebrate the maths that's in their collections. And I thought this was just just a good one to highlight because it also shows how they're bringing in, you know, universities into their centre to then open it up to the local community. So it really you can use Maths Week as a tool to really sort of work with other create new partnerships with other connections and open up your collection to your communities. Of course, there's school visits as well. So that was museum on the mound had a school in to learn about the history of money. And the second picture is Gardner's High School came to math workshop that we held at National Museum of Scotland. I'm going to be talking a little bit more about that later on. But I just wanted to highlight that that is of course a big element of maths week as well. I just thought I'd highlight the Great tapestry of Scotland and this was the first time that they'd ever been involved in in maths week. And they really, really got involved in lots of different ways. And they had maths trails for different ages in the tapestry itself that just sort of asked simple maths questions and they targeted them on different age groups. And they also had one for adults. Not only that, but he did outreach with local schools where the discover more about James Clark Maxwell, who's a prominent figure in the tapestry itself, so they're able to bring a bit of their collection, talk about the maths and and take it do outreach with schools directly. Just a little nice story about this, that I thought we'd mentioned that just sort of highlights how it sort of brings communities together. So I mentioned that they did an adult's maths trail. During Maths week, one of the visitors to the tapestry had a look at the maths trail, and realised that they wanted to sort of improve their their maths on the basis of that. And so they went and spoke to the Galashiels community Learning Development Service multiply team and just sort of said, I found this maths trail, it made me realise that I wanted to improve my maths, is that something you can help with? They said, Absolutely, we have lots of numeracy provision so on the back of that the multiply team then got back in contact with a tapestry and said, you know, we've been able to make this great connection thanks to the maths trail that you had on they then were invited in to have a stall at the tapestry in which visitors could come in, learn more about numeracy provision for adults, and get some sort of maths gurus as well, just thought it was a really nice example of how you can use that to just you know, create new connections. Finally I just thought I'd end with one of our grantees this year was Museum of Scottish fire heritage, which is a relatively new museum was recently reopened, and they use some of our grant funding in order to host lots of maths week Scotland activities and workshops. And this is just a little quote from Kelly McMeekin and the Museums of Scottish Fire Heritage manager on how she found getting involved. So incorporating mmaths week activities into our programme this year has been so inspirational for us, we got the chance to try engaging with our audience using new topics and materials, they got the chance to engage more meaningfully with our collection and our subject matter. And we also connected more widely with others in our organisation, as well as creating a digital offer. Overall, this has been so valuable for us as a fledgling museum. And we're already talking enthusiastically about how we can deliver more maths week Scotland activities for next year. So just that was a really nice quote, just to sort of summarise how you can use it, how it's a new way to look at your collections, and just really to encourage you all to get involved with Maths Week. so how you can get involved yourself. So like I mentioned at the start, what I've done is I've broken it down into three different ways. Depending on how much you're able to get involved, or how much you would like to get involved, just to sort of show that you all can, it doesn't need to be a sort of really big project, you can do something really simple to sort of showcase the maths in your collection. So point one is to adapt something you already do. But I would say there's a point 0.1 which is to reuse something you've done previously, if you've been involved in maths week Scotland before and you maybe had a worksheet created or or, or a maths trail, or if you've done something, maybe it's not maths week Scotland related but it's been something that's been STEM related or maths related in any way just reuse it, bring it out during that week, it means that we will be able to promote it, you'll have that connection and you'll sort of open yourself up to new visitors. And new people looking to get involved. There's absolutely nothing wrong with that. But if you are looking to get involved in a new way, I would say adapt something that you already do anyway. So that's something we did this year at the national museum of Scotland, we run magic carpet, which are storytelling and singalong sessions for sort of babies to toddlers to early years, up to P1. So for Maths Week Scotland, we made it maths themed every single year, there is a theme for maths week, the theme this year was maths in motion. So all the sort of songs and stories were about shapes, space, movement, and time. So it was a really quick and easy way just to sort of change something that was already going to be happening anyway just to adapt it to maths for that one week to sort of open it up to a new audience. And they were incredibly successful and they all sold out. So that's a positive. Another way you can get involved is just to put together a simple trail again, that's something we did at the museum this year. We did Dolly trail, as you can see from the Dolly sheep, and we just had five of these Dollys cut out and posted at different elements, different areas of the museum, really short maths trails, five stops, that picked up some of the maths in our collections and asked really simple maths questions. And the exhibition's don't have to be linked to math in anything. I think it's a bonus if they're not particularly traditionally linked to maths. We had things such as looking at the shape of snuff boxes, and counting how long the Stegosaurus is by using your steps. So it's a really great way to get involved in maths week encourages you to look at your collections from a different angle as well. And the final step is to create a maths workshop. So I mentioned that something we did this year in Gorgie Mills came to trial out. And it's quite a big project. But it's something that we're that we did this year to sort of really encourage people to our schools to come in and explore maths in a really fun way. So what we did this year was we put together maths workshop titled museum on the moon, and we trialled it during last week with with local Edinburgh primary schools. So the the focus behind this workshop was looking at the hidden maths behind removing an object from museum, we use one of the planes it's in our collections involve lots of problem solving, coding, measurement, weighing and working together as a team. And one of the things that we did, which was quite fun is that we didn't sort of announce the maths that maths was used all day until during the end, so we didn't, in order to sort of prevent those who maybe have love maths, anxiety, or who usually switch off around maths, we didn't mention it, we just said, you're going to help us remember this plane, we went through all the fun things. And at the end, we said you used maths throughout that entire thing. And didn't you all have fun. So the feedback has been really, really positive. And we are in the process of just making a few final tweaks to this workshop. And putting together teachers notes and guidance notes. But what I will say is that the aim for this workshop was was to be created. So it could be adaptable for any museum, gallery, heritage site or visitor attraction Centre, we will all have objects that are large, awkward, small or really delicate, that need to be removed from time to time for cleaning, or, or on loan or just be moved to a different site. So we created this workshop. So that could be adaptable. And that's one thing that we're currently working on making a few tweaks and then we're going to be putting together a guide on how you can use this maths workshop in your setting. So if that is something that if you're interested in finding out more about, on how you can adapt it for your site, please do get in touch with me, I'll be more than happy to sort of work with you on how we can adapt this this workshop for your site. And why should you get involved? Well, there's a million reasons that I could that I could choose from, but I've just chosen a few here. So it's a new way to create a cross curricular resource. I've explained that I think that's something that I'm really passionate about. And particularly with maths is showcasing how it can be used, and how it's used in everything. It opens you up to new audiences and connections, I hope I've shown that and it has increased awareness among families as well, we have quite a strong link with them. Showcasing and promoting events with with families, that also has new offers. That means that you know you're you're continuously bringing new things into Museums, and one that I think is quite important is it just allows you to look at your collection in a new way. And quite often you'll look at things and you'll be thinking but there's no maths involved in that. I hope I've kind of proven you that there is and there's easy ways to kind of showcase that. But I think when you sort of take a step back, and realise that you can sort of bring out the maths and anything, it allows you to see what else you can do with your collection that you might not have thought of even if it isn't particularly maths or STEM related. This is some support that we can offer you as well. So like I mentioned, we did have grant funding. So large grant fund for 2023 was grants up to £5,000 pounds, that's a really good resource, if you're looking to sort of put on something, something larger, particularly like maths workshops. And I will say that funding for next year has not yet been announced. But keep an eye out for that. As soon as we do have anything announced we will of course, let you know. And that's it. That's a great tool. We also offer a lot of support and promotion. And that's the sort of general inbox there that you're more than welcome to contact. But if you do anything during maths week, that's maths week linked, we will always promote that on our website, we will share it with our networks, we have good links with schools and like I mentioned we have good links with families as well. I put in the education Scotland expertise email there as well, because I know that it can quite often be a barrier if you maybe have already have an idea of how you want to celebrate maths and your workshop, but you're not quite sure of if it's going to hit the curriculum links, or what age group it's going to be targeted at or if your idea, you know where to pitch it. Education Scotland is great with working with museums in order to sort of help you pitch in and target that for the right audience. And they can they can help you create a workshop from an idea to sort of making sure that it hits those curriculum links that you can encourage schools and teachers to come along and be make it as successful as it can be. So thanks very much for listening to me there I hope I was able to sort of encourage you to get involved in maths week and also just show how it's a great tool to get. Create new partnerships, create new connections and get your community involved as well.