www.cpl.asn.au/podcasts

Podcast: New Mathematics Syllabus 11-12

Host: Carly Boreland
With: David Watson

INTRODUCTION:
You're listening to the JPL podcast from the Centre for Professional Learning. Here's your host, Carly Boreland.

Carly Boreland:
Welcome to the JPL podcast for the New South Wales Teachers Federation. I'm Carly Boreland and I'm the editor of the JPL. Today I'm talking with David Watson about implementing the new Stage 6 Mathematics Standard Syllabus. David, welcome!

David Watson:
Thank you.

Carly Boreland:
So David, we've got an interesting situation at the moment where we've got Standard Mathematics being introduced for Year 11 in 2018. We're awaiting on the implementation details for the Advanced course, so today we're just going to stick with Standard and talk about what's new there and how teachers could go about working on that course. And anything that you want to talk to us about, in terms of things that might be relevant for planning across those new courses, because the approach to planning is in some ways a bit separate from the content of the particular syllabus, so some things would be reproducible across both. And, what might be something that enthuses teachers about another new syllabus for the HSC?

David Watson:
There are lots of things in the new syllabus that are really exciting. This syllabus replaces the General syllabus. Unfortunately, we don't have the new ones for the other courses (Advanced, Extension 1 and Extension 2), but those are coming. One of the biggest things is the uniformity that's going on now and the syllabus is going to match very clearly what's going on in Years 7 to 10 (or K to 10 really). That means it gives us a really good progression of kids – there's thought to when a kid enters school in kindergarten, what they're going to end up doing in Year 12, and we're all thinking on the same page. And not only for Maths. There is a lot of uniformity in the syllabuses across the different subjects, which is really cool.

Carly Boreland:
So David, I've got to interrupt you then; you're talking about uniformity of the first 30 or 40 pages of those syllabuses? I know myself, as a History teacher, and I know some teachers from other courses (not necessarily Maths), don't always read all of the first 30 pages.

www.cpl.asn.au/podcasts

Podcast: New Mathematics Syllabus 11-12

David Watson:
As a Maths teacher I can tell you that not every Maths teacher does either because I certainly haven't. I've been fortunate enough though to spend a lot of time on this new syllabus and I took the time out to really read those early pages and to compare them to other subjects. When I say "uniformity" there's some cross sections that are the same; some language that is used that's the same, from the Maths subject to the Sciences and History subjects, and all those other things.

And just as importantly the uniformity also extends to the language that's being used in the Years 7 to 10 Mathematics Syllabus (the *Cross Curriculum Capabilities*, the *Focus Areas* and *Working Mathematically*). The language of the opening bits (like the *Rationale,* the *Aims*, the *Intentions)* behind Stage 6 syllabuses all together, there's some uniformity there across some of those other subjects. Those sections, they communicate to us NESA's intentions. That's a really important read because there's so many restrictions and guidelines, (and really good things; really positive changes) that it's really important for us to know what their intentions are when they change those things: whether it be content changes; whether it be assessment changes.

Or even just changes to, for example, the categorisation of Mathematics Standard 1 which I feel works very much in our favour, as teachers, because it makes that course much more relevant and that means that that relevance to kids is more obvious. Communicating that to kids can often be very difficult. In the past few years, communicating to students that Mathematics General 1 is a relevant course that they can learn from and would be worthwhile for their future, has been a really difficult conversation to have effectively. Now we stand at one being Category B and that's an opportunity for us. All of those kinds of changes, knowing what NESA's intentions are, in those changes, makes it that we can implement them best; we can know why they're doing them. I think the assessment is a huge one for that as well.

Carly Boreland:
OK, shall we talk through some of those things then? So, teachers are sitting in their staff rooms and thinking - "how we're going to do this?" Whether it's just the next topic that they're going to teach or whether it's a bigger plan for Year 11 moving into Year 12. What are some of the big changes that teachers should look out for and what are some of the things that they can keep doing comfortably?

David Watson:
Many of the topics are very much the same as they were before. We still have four of the five strains that we had originally, *Statistical Analysis*, *Financial Mathematics*, Algebra (as it's called nowadays) and *Measurement* – those four remain. *Probability* was the fifth strain for Mathematics General, now that's changed; it used to be its own strand in Year 11 and Year 12, now it's been absorbed into *Statistical Analysis* and is only in the Year 11 course. Many elements of each of those things have been added, removed, or moved around (some of those are very subtle). There are a few inclusions that are worth the note – they're not necessarily going to take up a large part of the course - but there are things that we haven't encountered as Maths teachers for a long time (things like *Pareto Charts* and *Heron's Formula*). These are things that are just additions that won't take up a very large part of the course but are things

that we're unfamiliar with. There's a Glossary in the syllabus that gives us great detail on those, but what I found is that researching them, and researching why they might be useful, is helpful too. The syllabus doesn't necessarily have the time, or the space, to be able to actually communicate to us - Why is this now included? And the best way to find that out is to research - Why does it exist? If there's a "*Heron's Formula*", what is it useful for? If there's a statistical chart of some sort: there's a description given of what a *Pareto Chart* is and I think "Ok, sure what is that actually?" (and I go and look it up) and it describes what the graph is, but what I really want to find (and I can find it online through a basic search) is "What is its purpose?" which is to communicate the impact of a particular factor on a certain outcome (and it communicates that via a *histogram* in a cumulative frequency chart). It's a little confusing when you first see it but if you understand the impact of it, you can see how you're going to communicate that to the kids and communicate its importance. Beyond that there's a huge addition, the *Networks* topic; it's by far the biggest change but is only included in Year 12. This means we're not doing that one yet – we may do it next year and even then, maybe not until the end of next year – it will be included once we actually begin the Year 12 course.

Carly Boreland:
So you've got a bit of time to figure that one out.

David Watson:
Term 4, I imagine, is when a lot of schools would want to do it. You want to jump in somewhat early, so I can see it certainly starting in Term 4; planning now is a good idea and getting an understanding of it now.

I've done a lot of investigation. And while I understood the algorithms really quickly, it took me a long time to understand the "purpose" behind the introduction of those things – not just "Why did NESA do this?" but more "Why would a kid find this useful?" And that is always there, but it was really valuable to me to actually find what that was myself. Eventually, I felt I did, and I think that was a really powerful thing to come to a conclusion to. Obviously, *Networks* is the idea where we get a situation that perhaps you can look at as a picture, an image, or a diagram that has certain features – like a roadmap. We detail it in a way that we remove the superfluous elements just so we can look at the Mathematics and analyse it. While there were a lot of algorithms around that that I was happy to investigate and to use and to say "Sure, I know how to do that", what I found myself doing was thinking "The *goal* was to *know how* to do the algorithm". But that's not good enough for a student, and as a teacher, it really does have to be more than that. My goal *should be* to know " Is that algorithm *helpful* and *what kind of problems* does it solve?" I found that quite a good little "light bulb" moment.

Carly Boreland:
This is just a curious question that I forget to ask Maths teachers, and I've always wanted to; as a History and Social Science teacher, I'm always jealous of Maths because students like it and they tend to see it as important so they care how they're going in it. They care that they need to be doing well in

www.cpl.asn.au/podcasts

Podcast: New Mathematics Syllabus 11-12

Maths and they know that it's a very important subject. What do you love about teaching Maths? What is it about being a Maths teacher, what is it about mathematics, that is exciting?

David Watson:
I'm going to start by dispelling the first thing that people would probably want to say; which is that Maths has a right and a wrong answer. That is the exact opposite of the reason I enjoy it, and I hope it's not the reason that kids would enjoy it necessarily. While it's often true that there is a right answer and there's a wrong answer; investigation is what makes Maths really good. It's not necessarily about finding that right answer. A good mathematician is looking for more than that – and looking to understand *why* that is the right answer and what effect that has on other answers. And if it's the wrong answer, once again, that's not necessarily bad news, because what effect does it have on other questions you could have. So I think that it's *investigation,* in terms of Mathematics, that makes me excited about it. In terms of teaching it, is because it's a tremendous challenge. Some of the things you just mentioned, about how kids value it, what we're starting to discover (or maybe it's been around for a long time and *I'm* just starting to discover it) is whether or not kids really value [Maths] for the right reasons, I suppose. Because wanting to do it, or thinking that it's important, is fine, so long as you know why it's important. If it's important to you because, for example, "my parents think it's important," and "because my parents value it, and they will reward me when my report says good things about Maths and they don't necessarily care about what it says in other subjects". While I'm happy to take advantage of that, that's not necessarily something that we're aspiring to.

Carly Boreland:
So, what do you think then is the bigger goal here? When you're thinking about this Stage 6 syllabus, what are you thinking about how you could potentially improve, or change, or do better with this opportunity for a fresh start?

David Watson:
I've done a lot of thinking about the kinds of student that we have picking General [Maths] at the moment, and although the students are fantastic kids, they're often choosing General because they've not necessarily had the best history with Mathematics – that's not all of them of course but many of them. The other challenge is that the students, who probably would do very well in General Maths, often choose high level Maths and drop down quite late which disadvantages us in giving them a good experience in the course. So, even now as we are examining this course, one of the challenges that we always have to face is if the kids come late into the syllabus. We intend this syllabus to be a two year syllabus (the kids follow a course over a two year period). But what actually often happens is that they do six months to a year of some other course and then come into it. So, as much as we plan around that, it's a challenge that we often have. The thing that excites me about that is - that's a *real* challenge to us. We need to be working really hard to make sure that that 7 to 10 syllabus is really effective, and how we're teaching them is really effective, so that, when they come to us in Year 11 and 12, the students going into that course are hopefully going into it with more of an open mind; more of a willingness to try things. It's not so much they need to be better, or be more successful at Maths, or

have higher marks: it's that they need to be a little bit less fearful of the subject. I think a lot of them are doing it because they would feel like they have to. And that leads to things like looking only for that right answer and being unwilling to share an answer, or to try something before being told how to do it because "Well! What if I'm wrong?" That's something that I find really exciting about this [new syllabus] because it's quite clear that the intention is that we try to give kids those opportunities. Some of those assessment guidelines that they [NESA] have given us really suggest that we need to be giving kids real opportunities to work through things in a variety of ways; to investigate things and to show their understanding in a variety of ways, and some of the inclusions from the new content do that as well.

MUSICAL INERLUDE/ANNOUNCEMENT:
The Centre for Professional Learning offers a wide range of professional learning opportunities all around NSW at fixed rates for members of the NSW Teachers Federation. For course information, dates, location and registration information, visit cpl.asn.au.

Carly Boreland:
You've got a new name for the course and we've got some significantly new topics as well as some extra inclusions (and *Networks* is the stand out one there that teachers will need to spend some time thinking and researching themselves). Then, we've got this new assessment approach which, I think, is probably one of the more challenging aspects for Mathematics teachers - to figure out how are they going to make it work for them and make it be successful for their students as well as for them. Can you give us some ideas about that so far, and your thinking around this approach to assessment that might work effectively?

David Watson:
I think a lot of teachers, as soon as you see things like *Assignment* or *Research Task*, start thinking a lot about the problems like plagiarism and whether or not you're going to be able to assess things effectively, and also concerns about time. Whether or not the assignment the students submit (based on all that concern about plagiarism and other things) are actually going to be legitimate display of their work. A lot of those are very real challenges.

I think we need to be realistic about the fact that there are faculties around us that are doing these things all the time. If what I said before is true - that not *all* Maths necessarily has to be about one right answer and it might be about the journey to get there - then that's actually what we can assess. If it is just one right answer then - yes, plagiarism is a big problem. But if we can instead find a way that students can use creativity to investigate things that are unique to a different situation, then it can be about [assessing] the *journey*. And that's where the introduction of *Working Mathematically* is really fantastic (not that those elements weren't already kind of there) but that is a bigger focus in the new syllabus. The advantage of that is that a lot of the sample resources that we have been given online use that as an assessment tool, and use that for the marking criteria and the marking rubrics. So that means that we're assessing students on their skills that they exhibit during that journey, rather than just the

destination. If we can do that, then we take away some of plagiarism concerns and then we can compare ourselves to other subjects a little better, and perhaps draw on their expertise a little bit.

I've had conversations with a few people recently where they talk about the expectations of their school with this kind of stuff. And I think the first place we should be going to is wandering over to [perhaps] the English faculty, or the History faculty - particularly those that are doing the new syllabuses right now. Many of them do assignments already: they're the ones who are also under similar reporting guidelines as we are. So there are lots of opportunities for us to work through things – that's only one thing though. Some schools have already got this happening. But for any schools that are seeing this as something that's a bit fearful and something new, and are historically only doing tests as assessment tasks, I would imagine that most of them are planning on following that guideline which says that we need to introduce *one Assignment* or *Research Task* – which is perfectly fine.

Beyond that, there's another one that is a little bit confusing to Maths teachers, which in essence is we're allowed one *formal* written examination in both Year 11 and Year 12. The concern with that is that if you're going to have one assignment and then you have one formal task and then you one formal examination and then you've got four tasks, - then, what are we doing with the rest of them? That's the bit that excites me the most. As much as the assignments are going to be fantastic, and we can be creative, there are lots of ideas out there that we can do with that. And I've tried that path a few times, in junior school, in particular, and I've found that there are some pitfalls (it's great that you discover them and then get better at them) in terms of whether or not you do get through the content in the way that you used to because Maths teachers we do have a unique set of skills with the way that we teach.

Carly Boreland:
David, can I just say after 10 years of working in high schools the one thing I know as a universal rule is that Maths is different.

David Watson:
Yes, and I think that's one of the big fears as well - is if we taught everything by assignments, do the kids really have the opportunity to *demonstrate* everything that they do? ([*Demonstrate*] is probably the word, I think, that a lot of mathematicians and Maths teachers would use) Can they *demonstrate* everything with the *rigour* that they can in a test?

I do think, after trying some assignments previously, that that argument has some value. And so what I'm excited about is, what they [NESA] are getting at and, what has been presented in a lot of different things including the *syllabus feedback sessions*. In those, what people were talking about a lot was the different types of assessment you can do that are not necessarily an assignment or a test. For example, the idea that students (just as they do in a lot of subjects) come in and they give a speech. I don't expect kids to come in and give a speech about the *history of mathematics*, or something along those lines, because it has to be relevant to the content we're doing. They can present their mathematics *live* (or recorded, if need be). But, they can present it to us *live* in a way that they have to communicate *verbally* what they can communicate in writing (which I know that they do anyway in an examination). But,

another way you can do this is by giving them some questions, before they come in. And they've got time to prepare their solutions to those things (just as we, as teachers, do before we go in). They're then expected, on a given day, to come into class, to present their solutions, Beyond that, you could extend out a little bit further, the idea that their job is also to be able to respond to follow-up questions of some description. Obviously, you want to put some guidelines around that because (this goes back to what I've talked about previously) you want the kids to be comfortable and be willing to sort take risks.

To me, that provides so many more opportunities for *immediate* feedback. They've always been there; but now we're really being encouraged to do them. So there's a lot of really good opportunities to come with this as well. And while assignments are an interesting addition, we've also been provided with so many resources, so that, even though the implementation will be a little bit of trial and error at times, but it's all there! Everything is there for us to do it! So, it's a really exciting time.

Carly Boreland:
And some good opportunities to take some *faculty time* and work on some ideas together.

David Watson:
Of course, absolutely! There are a lot of ideas there. One thing I found really powerful, with a lot of resources have been given to us online, is the opening up of one of those documents and having a look at it and evaluating it. I think you'd be a fool to just print one off and go "oh, I am just going to use this as an assignment!" Because you haven't created it yourself, almost definitely you have not considered what the pitfalls will be; what that is going to mean for your students? But, that process of just opening up the file, and just evaluating it, and spending a moment with a group of teachers, and saying "OK. So what do we think of this?" It's not been created by any of you so it doesn't matter if you go "Well, we don't love it" – that's OK; it's not going to offend anyone for us to do that.
And, I actually found that usually, as long as the assignment is of reasonable quality (but all the ones that we've been provided with, I feel like, they pretty much are) you start discussing the changes that you could make to make it to fit your context, which means that you're not just starting from scratch. If you do that, while you're trying to build up experience, for anyone who's feeling a little bit of fear towards it, I feel like that's a great way to start. Just get one of those things, sit with your team of teachers, and just to discuss - "Ok, so if it's not great; why is it not great?" Then, if you are open minded and willing to look for a solution you will usually find one. I found that the solutions usually come pretty quickly, and are usually pretty easy: just a small tweak, or change in what you expect the students to do, or how you could make it so that it's creative and not just the same assignment for every kid – those changes aren't usually that hard to do and it's a really valuable process to go through.

Carly Boreland:
Where are some of the places where we can get some support? We know NESA's website is constantly adding some new things; there's sample scope and sequences; sample units of work; there are sample assessment materials now too. Where else can teachers look to get some help to begin with?

www.cpl.asn.au/podcasts

Podcast: New Mathematics Syllabus 11-12

David Watson:
NESA, as you said, is fantastic for a lot of that stuff. They've got sample scopes and sequences, sample programmes, sample assignments, and they've all got value. They've got a range of different things from a range of different perspectives, depending on how you intend to teach it. There is such a range because (I think) they're trying to demonstrate there are different ways [of teaching] and you all have different skills and preferences. So, here are some ideas; and then, obviously, we can create our own.

In addition to that, one of the best places I would direct people to is the *mEsh Project* that's gone on from the Department of Education. They've recently started to release their resources and my understanding is there will be seventeen sets of projects that have gone on which would be seventeen assignments from different places, and I believe each of them have been given a section of the syllabus to work on and make an assignment for. I've seen the ones that have been posted up so far and there's some real value to some of the work that they've done. [Admittedly] there were some that I looked at and thought "There's no way I would implement that in my school" but that's because that's just the way that they have written, and as I mentioned before, it's still a fantastic starting point. That's all it needs to be! Once you've got that, realistically, the teachers in the school do need to take ownership of it by making some modifications because then, when you get to the end of it, you've made some decisions about it which means you're best equipped to do some of the harder things like marking, reporting and giving feedback.

Carly Boreland:
The first time around, with any new syllabus, is always a bit of a first draft, in a way, and we put a lot of pressure on ourselves because it's *Stage 6*. But the reality is, the way we do it in the subsequent years will be different because we're going to, ourselves, improve.

David Watson:
Yes! I try to remind myself that next year *will* be the *worse* time I will ever do it. Yes, I want to do a great job next year, we want to write great programmes, write great assignments and make them go perfectly, but it *is* quite empowering to just remind myself that next year *will* be the worst time I ever do it – that will be the worst go I have because, every other year from then on, I will have learnt those experiences from there. So outside of some factors I can't control, that's going to be the worst one, and that means every year from then on, it's going build and build and build. If we can get a good starting point, even if it's not perfect, we should be really happy because as I say, it will get better.

Carly Boreland:
So, acknowledging some of the challenges, talking through why there are some things that are going to be difficult, and then letting them go, and just get on with it.

David Watson:
Yeah! And I would also encourage schools to reach out to each other. So many of the events that have been going on around have been supportive of that and it's such an empowering process. Most of

those things that I'm talking about (going through assignments and editing them with teams of teachers) I've done with teachers from other schools, and you get a real idea of what works in their context, and often you still have the same solutions when you talk together, even though you are from different contexts. And I think, that's a very empowering to have that happen. And, it also means that, if you can *share* that journey with someone, Whenever I try to work through something that's relatively new, like this, if I feel like I'm on my own a bit, I team up with someone. For example, if you're a teacher in a school and the only one teaching the Standard syllabus, you might feel very alone in that nobody else cares; well, team up with someone, find someone from another school. There are so many networks out there that you could find someone that's doing exactly the same thing in another school, and just share that experience. Both of you do the same assignment, so that way, you *can* share.

Carly Boreland:
David, one thing I know, from lots of teachers, is that in schools, at the moment, it feels like there's a lot of things to do and not much time to get them all done. Where is implementing this new syllabus for Standard (while we're waiting for Advanced)where does it fit, in terms of teachers' priority in the day? And have you got any suggestions for teachers about how they could possibly take a step back, and have a look at the things that they spending time on, and how they could make time to give this a really good effort?

David Watson:
I hope my advice isn't for just head teachers because I feel like a lot of the things I would do is not something I would necessarily recommend to all teachers. To start off with: we're kind of lucky. In a way, it's a little disappointing that we're starting with only one course But, on the other hand, General is often the poor little kid brother of the other courses, to some extent, with the view that it's given by kids, teachers and everybody. The fact that this is coming through on its own means that it's something that gets highlighted. I think that's a real benefit to the course itself because that's, like I said, not something that really happened before. General has always been (speaking as a head teacher who gives allocations to teachers) often the one that teachers would prefer not to be allocated. Not just compared to the other senior courses, but a lot of teachers would rather teach a Year 7 class rather than General Maths. So, that's a really fantastic thing that we have that opportunity.

Finding time to make that effective is really, really tough. As a head teacher, the recommendations I would give to other people who are leaders, is to try and make sure that the people who are in charge of programming, in preparing for those things, have that as a focus. That can be very hard because we have so many pressures coming from everywhere, but as a leader , I feel that that's one of *my* priorities – I have to make sure that whoever's in charge of that, that I value that that's what they're going to be spending their time on. So, if there are other things coming, my job is to make sure that those things don't hit them too hard – some of that I might have to do myself, some of that I might distribute to other places.

I imagine most faculties would have it so that the teachers who are going to teach this course next year are the major ones who are preparing for it. That may propose a few other challenges as well. For

Podcast: New Mathematics Syllabus 11-12

example, Standard 1 and Standard 2 - how many kids do you have doing Standard 1? So that delegation of tasks not only needs to be quite strategic but it also needs to be valued. I think it would be very hard for me to say to a teacher "Your job is to programme for both Standard 1 and Standard 2" because there would be situations where a class could have both sets of students in the one room and the teacher has to accommodate for both of them. I would like to think that I could be strategic enough to allow that teacher (presumably that will be the only group of Standard 1 students) to benefit from somebody else who's teaching Standard 2, who can provide those resources – it would be huge benefit. I feel my job as a leader is to then communicate to each of those teachers that their work is valued by making sure that that is the main thing that I've got them doing.

Outside of that, I think realistically, what you're trying to do is work out what's important versus what's urgent. There are so many urgent things in our day. Sometimes it really sucks to be told you didn't meet a deadline when you may have a half yearly due and that's due for printing that day, or something like that. *That* task is urgent and it needs to be done right now. But once that's done, the kid's do that exam, they leave the hall, that exam is now gone. I guess I could repeat [the exam] again later but realistically, that exam is now finished. If I have a set of reports due, same deal – those reports get written and go out and off we go. [The programme] is something that we are writing for the benefit (if we write a programme for these kids and it's a good programme, fair enough we'll update it and we'll make it better but whatever we write though is for the benefit) of not just next year's kids, but the kids that come after that, and after that again. I would argue that, if you're comparing urgency and importance, no, this is not necessarily an urgent task to everyone in terms that it needs to be written right now (but I guess for some schools if they're not as organised as others they could even have it so that it's written as you go or something along those lines – I hope not, but it can happen), it may not be urgent but it is very, very important, So I guess realistically, the best advice I have is to make sure that that's prioritised.

Carly Boreland:
It sounds simple, but to remind ourselves, the thing we're going to be doing in class each day, that's the thing that matters – the moment you have with the student, in that moment, is the thing that's most important in any school day, and all the rest of it sits on the periphery of that, or hopefully enhances in some way, but it's not the main thing.

David Watson:
I can already see a lot of people would be shaking heads like "Yeah, but I've got to get my exam in" and they are completely right. But it's also about making sure that value is put on the things that are going to make significant change. I can certainly acknowledge that it's incredibly hard because, unfortunately, that's not the way that the school is set up – we're expected to do *all* of these things. So, I'm not necessarily telling everyone to get their exams in late, what I'm saying is that it needs to be highly valued, and that needs to come from as many places as possible (the higher up you can go the better) So, as a head teacher, I will value that from my staff and I'll make sure that time is available for them; and I hope that other leaders do that as well. Someone needs to lead the way and it doesn't necessarily have to be the head teacher. So if you are someone who is interested in this course, and you

want to see it be valued, then *you* lead other people by saying "I'm going to make this a priority and I'm going to make time for it." It's a choice often.

Carly Boreland:
I think that's a nice place to finish on too. That the subject of Standard Maths matters and the kids who do that course really matter too. Thank you for talking with us today about how we can try and find a way through to help them and we really appreciate having you here.

You've been listening to the JPL podcast for the Teachers Federation Centre for Professional Learning. I'm Carly Boreland, and I'm the Editor of the JPL. I've been talking with David Watson about implementing the new Standard Mathematics Syllabus for Stage 6. And to find out more and to listen to further podcasts, you can go to our website at https://cpl.asn.au/podcasts

CONCLUSION:
The JPL Podcast is produced by the Centre for Professional Learning and the New South Wales Teachers' Federation. All opinions expressed in this podcast are those of the individual speakers only, and do not necessarily represent the views of their employer or associated organisations. The host was Carly Boreland; technical direction by Jason Nicholas.