**Between our pages**

Episode 1 with Suzy Urbaniak

[0:00] Music.

[0:10] Fiona: Welcome, you're listening to Between Our Pages, a Premier's Reading Challenge WA podcast.

This episode was recorded on Whadjuk Noongar land, we acknowledge the traditional custodians and pay respects to their elders past, present and emerging.

My name is Fiona Bartholomaeus and together we'll be diving into the wonderful world of books and reading right here in WA.

Today, we're chatting with Suzy Urbaniak, a limbo dancing, volcano hunting scientist who is the subject of a new STEM book released this week. Let's go.

[0:37] Music.

[0:47] Fiona: Aussie STEM Stars is a book series written by award-winning children's authors about some of Australia's top scientists and innovators.

The newest edition of the series is about Suzy Urbaniak, called Suzy Urbaniak, Volcano Hunter and Steam Warrior, and it follows her childhood, early life, career and how she became passionate about innovation, science and Outdoor Classroom.

Suzy, thanks for joining me.

Suzy: Oh, most welcome. Thank you for having me.

Fiona: So on your profile, it says you're a limbo dancer, crepe baker, geo-scientist, educator, and according to the new book, a volcano hunter too. I love that list of titles.

Suzy: Yeah. Yeah, it's quite diverse, isn't it? I guess I've got energy and I like to explore and I like to push myself to the limit in things that I'm capable and passionate about.

[1:35]So the love of rocks and volcanoes goes back to my backyard where my parents built a house in the northwest suburbs of Melbourne, which was on the fringe of suburbia and cow paddocks.

So I had nature in my back door and I think that's what fostered my love of that, and so where that is, is a volcanic field.

And so I have volcanoes on my doorsteps and my grandmother gave me my love of the passion for cooking and limbo dancing, well, I'm quite sporty and I love music and I love dancing, especially where I can move the body.

Fiona: I have to ask, what's your favourite one out of those titles?

Suzy: Oh my gosh, no, look, I think they all integrate to help me be the person that I am and the person that has purpose and goals that I want to achieve and I think you have all these intelligence's and you've got to make the most of them and those that suit you and suit your purpose in life and so you build them and you grow them and you put them into action.

[2:45] Fiona: And you're the feature of the latest book in the Aussie STEM Stars series, which follows real life stories of some of Australia's top scientists. How did this all come about?

Suzy: Actually, I wanted to develop a book called Valentina the Volcanologist.

Fiona: Oh, I like that.

Suzy: Yeah, with homage to my grandmother, who's a Polish named Valentina. So, based sort of on my life, but as a revenue stream for the not-for-profit, the Core Learning Foundation.

[3:14] And then started, because Christy interviewed me after the Prime Minister's prize win, and so I sort of kept her on Twitter and I thought, well, I want to write this book to develop a revenue stream for that.

[3:26] And then I started telling my story and she said, well, why don't we write about you?

And she was writing with Cathy on the Aussie STEM Stars, and before I knew it, it was about me.

Fiona: So, tell us what is in the book?

Suzy: Oh, okay.

So one of the things I realised when I was having to work with Christy and tell my story was that I got a hashtag called 'hashtag the real classroom', which means taking the kids out into the environment and bringing the real world in.

And upon reflection and doing all that personal research, I realised that I learnt through in 'hashtag the real classroom'.

It was that backyard. I developed that curiosity. I developed that desire to research more, to, you know, identify with the rocks and stuff like that.

So the main thread of that book is having that self-agency, having that experience to identify who and what you are, the skills, the capabilities, the talents you have, and go for it, go for that dream.

And you're going to have a few knocks along the way, and what you think was meant to be your pathway, it's not necessarily the case.

So you've just got to let go and go with the flow, and I think that seems to be the main message that is put through that book. And it does start early. It does start because, you know, like I was four or five years old when I was walking through those creeks and picking up rocks and getting curious about the world around me, the nature, the trees, the frogs, the tadpoles, the cats and all of it.

Yeah, and that set me on the course to wanting to be a geologist and that's all I had in my vision. And so the actual school system as such, didn't really support my goals. I suppose it taught me the basic reading, writing and all all that sort of stuff, but when I was going through school, I didn't see the connection of what I was doing to how it was going to serve my purpose to be that geologist.

And so, that's what's come to the fore with the development of the learning model and that's what is in this book, that I think you've got to believe in yourself and have those goals and no matter what you need to do, you've just got to do some things you have to do and you just do it and you've got it within you to make your career what you want it to be.

Fiona: And it definitely does start when you're younger, because I've read a little bit of the book and it does begin with you walking down to the creek and finding the rocks and knowing that part of it's from volcanic reactions and imagining the streets flowing with lava and magma and everything.

[6:07] Suzy: Yep, and it definitely did. And I was actually, when I was a little bit older, about 10 or 11 and driving along the Calder Highway, I had two aunties that live in the Macedon Ranges, and you can see the volcanic cones on the side of the road. And, you know, I was very envious of the First Nations people that actually would have seen those cinder cones erupt like, you know, fireworks. And yeah, you know, I had that imagination behind me, and that's what then further fuelled that passion to be a geologist and to love volcanoes even more, because they, they really are the pulse of the earth and what makes the earth tick.

[6:42] Fiona: And is did lead to you becoming a STEAM warrior. For those who don't know, could you just explain the difference between STEAM and the normal STEM that we might hear?

SUZY: Yep, yeah, so STEAM is STEAM. It's just giving that extra diversity to it, that A for the arts. The arts is really, really important. Some kids are very artistic and creative and you need that drama behind you to also understand science. So if it's through the arts that you want to understand science, you will, you will then engage with the science behind your art.

And so that creativity, that ability to public speak, the drama behind, you know, most scientists, you know, to be able to communicate what you have learnt, whether you're a scientist or an engineer, is so important. That's one skill I'm still developing, is that ability to communicate properly my message, my purpose, you know, my catchphrases. And so the answer for me, the arts is a very, very important part of the interdisciplinary nature of understanding the science.

So with STEAM, it's team. So team, the technology, the engineering, the arts and the maths through the application of that. Do you develop an understanding of science in the world around you, science in everyday life and the science that can be a part of your career pathway. We've got science all around us.

Fiona: Surrounded by technology.

SUZY: Yeah, we've got science all here. And it all comes from the earth. Your computer, these mics. All those metals have come from the earth andd so that's why it's really important to have a science understanding through STEAM.

[8:23] Fiona: So why should people read your book?

Suzy: I think to get an understanding of how important earth science education is, and it's not the second rate cousin to any other of the science disciplines, and how, you know, like I say to my students, if you want to fix the earth, you have to understand how it works. And you have to also understand that your life is dependent on the resources that come from the earth's crust, and the atmosphere, and the hydrosphere. But that all stems back down into understanding the dynamic and capability of our Earth. It's plate tectonics, it's got this heat engine, it's, you know, it's dynamic and that's why we survive.

[9:03] And it's important to sustain it and to sustain our lives and our civilization and obviously the economy. Here in the hotspot, resources hotspot of the world, we need people to work in the resources industry in a sustainable, environmentally and socially governed way. We need these resources, particularly with Industry five happening. So, by having that earth science awareness and understanding the careers that are associated with earth science gives us that prosperity, personally, but also economically for our state and for our nation.

[9:41] Fiona: Now, this book aims to inspire the younger generation about the world around them. Was there a book that inspired you from a young age?

Suzy: The only book, novels, no.

Fiona: It doesn't have to be novels. It can be a non-fiction, it can be a how-to guide.

Suzy: Yeah, so what inspired me was these little, they came out weekly, they were like science books, you know, different themes, whether it was biological sciences or earth sciences or chemistry or oceanography. And I bought one every week to read about the science in the world around me, and I had stickers at the back and so you pull out the stickers and you lick them and then you stuck them into the correct page where those stickers were supposed to go after you read.

So those books, I can't remember what they were called, because this is early 70s, 1970s, but they were the books that, they were my research., they were my hashtag, the real classroom. You know, from what I experienced down the creek or camping with my folks and stuff.

[10:43] I would then want to research and want to know more. And so those books were the catalyst and having mentioned that, then I started buying rock books.

Yeah.

Fiona: Now, Susie, you moved from geology into teaching in the early 1980s. How was that experience for you?

[10:59] Suzy: When I started teaching and I walked into those classrooms, I went into a time warp. Nothing had changed. And having experienced that transition from going to school and then becoming a geo-scientist, there were two observations I made. And one was, where's all the homegrown talent, because I'm an eastern states migrant, like where's all the people working from Western Australia here? And the other one was, why did I go to school?

I wasn't taught how to be a scientist.

[11:27] And so when I walked into those classrooms and saw nothing had changed in terms of science education, it's application to real world, it's interdisciplinary nature, it's fun, it's hands-on, I just thought, no way, my kids are going to be young scientists and young engineers in the classroom. They're going to be hands-on learning, they're going to put the investigative and inquiry process at the forefront, because it is about collecting data.

Fiona: Especially with science where it is a very hands-on, and geology, you have to be out there in the dirt, in the garden, seeing how everything works.

Suzy: Correct. You have to kick that curiosity into action through your observations. Science isn't textbooks or worksheets. Science isn't one-dimensional. Science is integrating everything that you see, putting it together and then asking the question why, to get answers. And science isn't right or wrong. Every answer you get leads you to another possibility or array of possibilities which build the story. Like I say to my students, love the data and let the data tell the story.

Science isn't a preconceived idea of a particular answer. It is getting to that answer and the process of getting to that answer which is important, and that's all these STEM skills that are critical for the future.

You know, having the confidence to believe in what you're doing is the right way to do things.

You know, getting that data, manipulating that data, understanding what that data is saying to you and then integrating that data with other data to tell that whole story.

[13:07] Fiona: While you don't use a lot of textbooks in your classrooms, obviously, students before and after will read in their own times. Do you find that some of the things that they might read come into play in the outdoor classroom? Like they might go, I've read about this, can we talk about it?

Fiona: Oh, totally because through the doing process, they themselves are then intrigued to find the answers through reading. And so they develop their research skills, then they develop how to filter information, which information is best and which information isn't. And so they go on their search to identify appropriate evidence.

I call it idea. Identify and describe what you see, analyse and interpret your data and then apply theory to it. So that's that whole, whole sequence of being a scientist and being intrigued and finding the information that is relevant to what you, your data and what you are doing.

[14:06] Fiona: And those skills are so helpful, not just in science, but in everything, especially in this day and age, we can get information everywhere, being able to filter through it and be able to research.

Suzy: Correct. Yes. No, definitely. Finding the most relevant, the most appropriate, the most meaningful information that suits whatever task you have to do. And so everything that I developed through the core learning model is basically what happens in the real world, in real life. Like having to write a report. That's one thing when I did, you know, when I was at school. I didn't want to learn about Shakespeare. I didn't want to learn about the outsider and all those things. For me, that meant nothing.

[14:47] But to write a proper scientific report meant everything. And, you know, I didn't do it. And what was my first, one of my first jobs when I started as a geo? I had to compile all the annual technical reports for the Telfer goldmine.

[15:00] So, I put report writing as part of the foundation to the core learning model and having to communicate through report writing, how important that is, whether you are a scientist or whether you work in sales or whatever, you know, report writing is a critical skill to have.

Fiona: And you've mentioned before, but you lead your own science program called the Centre of Resources Excellence or CORE. Can you tell us more about it and where the idea came from?

Suzy: Yeah, well it's been a long journey. It started with having young scientists and young engineers in the classroom, taking that interdisciplinary approach, connecting it to the real world, connecting it to careers in the real world, getting kids to understand the relevance and the purpose of why they were learning, what they were learning, and bringing the practices that you do out in the real world into the classroom and then take the kids out into the real world to collect it. And so it just evolved. It started with the investigations and it was the field trips, then it was the Petroleum Club, which was really, this project-based learning type stuff and it all sort of organically came to the core learning model, which is performance management and digital portfolio compilations, town hall presentations, project-based learning. So it's a very, very different mindset and it's a very, very different delivery strategy.

[16:30] And it became CORE in 2015. So the CORE is the Centre of Resource Excellence, the resource being our human energy, our students who are our future leaders, who are our future taxpayers, who are our future people working in industry.

So they're our resource, but it all centres on CORE, the core of the earth, because that's where we live. And the CORE is the energy, the heat energy from inside the earth that is being released, which then drives plate tectonics and makes earth the recycler of matter. And so that energy then is that analogy for the energy for this learning model to then support our greatest resource, which are our students.

Fiona: I love the meaning behind it so much. It really just connects not only the outdoor classroom, which you're passionate about, but students, your geology background, and just puts it all together.

Suzy: Yeah, I remember the day really quite well when it all just clicked, I thought, CORE. You know, I had to find a name. And I thought, oh, CORE, of course, why didn't I think of CORE? And so there's always, there's a little O though in the middle.

Fiona: Little O.

Suzy: And that's the of. Yeah, yeah.

[17:42] Yeah, and the excellence being that excellence for all students, whatever their socioeconomic background, cultural background, there's more than one measure of success, and that's what frustrates me.

There's more than one measure of success. tests and exams actually discriminate against a greater number of kids. And you know, working with kids now in the regions, regional and remote, and seeing what they're capable of doing and what their talents and capabilities are. You know, I had the best conversation with a bunch of primary school kids from Beacon in Northern Wheatbelt.

[18:19] I learned so much from these eight, nine-year-olds about farming, and they were telling me about the mechanics of all these machines and how it all correlates and how they're all becoming remote operating.

And I'm thinking, wow, why isn't this, you know, why isn't this celebrated that these kids have got so much knowledge, so much skill?

And ultimately, that's successful as far as I'm concerned. And so that's why, you know, this STEAM learning, this hands-on learning, this digital portfolio presentation of work, original pieces of work based on students' own data collection methods and stuff like that, that is a true representation of the person and what they are and who they are and what they're truly capable of, rather than a three-hour test.

Fiona: Do you find going to the regional schools that, like with the farming, they'll tell you something new and you'll go, oh, I should implement that into CORE.

[19:17] Suzy: Totally, totally. I grow with the program and I grow with the kids. For the students, by the students was one of my early mottos of the core learning model. For instance, my Year 10 class from 2015 came up with all the values and the logos and the mottos and that sort of stuff for when we became officially CORE. So yes, it's lifelong learning. You don't stop learning when you're 57. You use and absorb. I've learned so much from the Indigenous kids in the regional schools I work with as well. I've learned and I've incorporated all that, but I was incorporating Aboriginal science, culture and heritage back in 2013, 13, 14, 15, you know, well before it was mandated.

[20:04] Fiona: Now, the Premier's Reading Challenge, which relaunched last year after a hiatus, really encourages students to read all kinds of books and literature, not just fiction, but if they have a how-to guide or non-fiction science books as well. Why do you think it's important that we encourage students to read and expand on the kinds of things they read?

Suzy: Yeah, well, reading reinforces the questions they are asking. They have to ask questions though and you have to create an environment where they feel safe to ask questions, where they're curious and inquisitive about different ideas, different topics. And so you encourage them to read and their reading is an important part of them developing those critical analytical skills, those critical interpretive skills, and then evaluation, to take that information to support whatever project they're doing or whatever they're curious about to excel in what they are doing.

So yeah, all types of reading is very important. So it's really critical that within a learning environment that educators or parents or whatever, mentors or coaches, provide students with that ability to ask why.

[21:25] Music.

[21:34] Fiona: You've been listening to Between Our Pages, the Premier's Reading Challenge WA podcast.

Thanks to our guest Suzy Urbaniak for joining me on this episode.

If you want to keep up to date about future podcast episodes, you can follow the Premier's Reading Challenge Facebook and Instagram pages at Premiers Reading Challenge WA.

Thanks for listening, happy reading, we'll see you next time.

[21:53] Music.