**Brodie McCloy:** Hello. Um, I'm Brodie McCloy. I'm currently a third-year medical student at Trinity College. And right now, this year, I do, uh, history and philosophy of science. So it's been a while since I've done A-level physics, chemistry, all that sort of stuff. So we'll see how this interview goes.

Um, I'm gonna be showing you the sort of how we're expecting the Zoom interviews to go. So from now on, if you are not having an interview in person, you'll be invited to a Zoom interview, and right now, we're doing a natural science interview.

**[pause 00:00:32]**

**Brodie McCloy:** Hello? Good afternoon.

**Speaker 2:** Great. Nice to see you.

**Brodie McCloy:** Yeah, you too. You too.

**Speaker 2:** Thank you. I'm just going to transfer you to the waiting room, where one of our students will look after you. So, if you click the Join Breakout Room button when it pops up.

**Speaker 2:** Lovely. Thank you.

**Brodie McCloy:** Thank you.

**[pause 00:01:33]**

**Brodie McCloy:** Hiya, good afternoon.

**Mire Diallo:** Hello. Hi. Um, I'm Mire. I'm one of the student helpers for your interview today.

**Brodie McCloy:** Oh, lovely to meet you. I'm Brodie.

**Mire Diallo:** Good to meet you. I hope you're doing well.

**Brodie McCloy:** Yeah.

**Mire Diallo:** Um, I just wanted to make sure that you can hear and see me okay.

**Brodie McCloy:** I can, I can.

**Mire Diallo:** Great. And I just wanted to confirm that you're here for an interview in natural sciences.

**Brodie McCloy:** Yes, I am.

**Mire Diallo:** Great. And it also says here that your interview requires a drawing tablet. Do you have that? And do you feel--

**Brodie McCloy:** I do, indeed. Here we go.

**Mire Diallo:** Awesome. Great. Um, so you are gonna be transferred to your interview in a few minutes once your interviewers are ready for you. Um, so right now you can kind of take a moment to take a deep breath and compose yourself. Um, and just remember to have fun, to be yourself. And of course, if you have any questions for me, uh, before you're transferred, um, feel free to ask them. But yeah. [laughs]

**Brodie McCloy:** Yeah. Thank you.

**[pause 00:02:46]**

**Brodie McCloy:** Good afternoon. How are you?

**Cate Ducati:** Hello.

**Aleks Reinhardt:** Hello, Brodie. Good afternoon. Um, thank you very much for coming to this interview. Uh, I'm, uh, Aleks, I'm a theoretical chemist here. And--

**Cate Ducati:** And I'm Cate, and I work in material science.

**Brodie McCloy:** Oh, lovely to meet you both. Thanks for having me.

**Cate Ducati:** Very nice to meet you.

**Aleks Reinhardt:** Great. So over the course of the next, um, half an hour or so, we'll just talk a little bit about some science, and we'll start with a bit of chemistry. Um, so I was wondering if you could maybe tell me a little bit about what you know about the, about ionic bonding.

**Brodie McCloy:** Okay. So, um, an ionic bond is a bond form between two ions. So, an ion is a charge particle. Um, and in an ionic bond, there is a transfer of charge, um, from one particle to the other, which enables them to be, um, joined by sort of electrostatic attraction.

**Aleks Reinhardt:** Mm-hmm.

**Brodie McCloy:** And that's-that's the sort of bond that's formed.

**Aleks Reinhardt:** Um, okay, good. Let me show you, um, a crystallized structure. Hopefully, this will work. Um, can you see the whiteboard?

**Brodie McCloy:** I can, yes. Yeah.

**Aleks Reinhardt:** Okay, wonderful. So, um, this is a-a, uh, crystallized structure of, um, an ionic compound. Uh, have you ever seen pictures like this before?

**Brodie McCloy:** Um, not exactly like this, I don't think. No.

**Aleks Reinhardt:** Okay. You might have seen the structure of sodium chloride, but you might have drawn three dimensions. Um, this is a projection of a crystalline structure into two dimensions.

**Brodie McCloy:** So that's the bottom plane, and then we've got one that's coming-- And there's gonna be more central if we're looking down at it. So, trying to draw this in 3D. Um--

**Aleks Reinhardt:** So maybe-maybe we can think about, um, if-if this is the bottom plane only, is there anything else that is in the bottom plane.

**Brodie:** Uh, we've got two more of the flooring patterns--

**Aleks:** Yeah.

**Brodie:** -that are also in the bottom plane.

**Aleks:** Where are they?

**Brodie:** So those are there and there, 'cause they're--

**Aleks:** Yeah. Okay, great. Um, okay. And then the same sort of thing happens again at the very top?

**Brodie:** Yes.

**Aleks:** And then there's only one thing we have to consider in the middle. So, maybe we don't have to draw it in 3D. Maybe you can do it layer by layer.

**Brodie:** Okay.

**Aleks:** What's-what's sort of the layer at one half? What does that look like?

**Brodie:** The layer at one half is gonna be the, uh, central A with the two flooring.

**Aleks:** Mm-hmm.

**Brodie:** So, that's gonna be like layered on top. So, trying to draw that. I guess if we did go back to trying to draw in 3D, it'd be more like a, um, pyramid in terms of the, just the-the A at the ions and then--

**Aleks:** Mm-hmm.

**Brodie:** -the addition of the--

**Aleks:** Yeah, yeah, that's right.

**Brodie:** So, up here at the top, we've got the, um, wave of light. So each of these, um, will represent one-- Um, each of the lines will represent, like, one, uh, part of the, um, wavelength. So I-- In my mind, I see them as being the, um, the peak amplitude.

Um, and we're reaching this, which is the, uh, barrier. And you can see the two slits which are left between, um, here. And the-the light waves are gonna be able to pass through these slits. So what will happen is that you'll get a shape sort of like this because they'll be defracted as they pass through.

Um, but then what happens is that you get the-the waves will actually-- Obviously, as you get further away from the source, the waves are gonna meet and sort of they'll show interference, um, which is why on this screen we have this central, um, very like bright area.

Um, which represents the sort of, um, high amplitude, um, lots of positive interference. So if I-I'd interpret that, if I could draw it into like a wavelength, it would look kind of like-- And then you've got, uh, the canceling each other out in the black spaces.

**Aleks:** Mm-hmm.

**Brodie:** And then you've got smaller amplitude wave here.

**Cate:** I-I guess this is all we have time for, for today.

**Brodie:** Okay.

**Aleks:** But, um, so, of course, if you have any questions for us, now would be a good time to ask.

**Brodie:** Um, I don't think so. So far, the admissions people have been really helpful.

**Aleks:** Okay.

**Cate:** Thank you.

**Brodie:** Uh, thank you very much for having me. Thank you.

**Aleks:** Thank you very much, Brodie. I think you should hear back from the college sometime in January.

**Brodie:** Mm-hmm.

**Aleks:** So, um, thank you very much for coming to see us and, um--

**Brodie:** Thank you.

**Aleks:** -take care. Bye-bye.

**Brodie:** Bye-bye. Bye.

**Cate:** Thank you. Goodbye. Bye-bye.

**Brodie:** So, there we go. That was my-my natural science interview. Um, it was a bit of a refresher on physics and chemistry that I haven't done in a few years. [laughs] So there we are. Um, I hope that's a, you know, useful thing to give you a sort of idea of what to expect when you come through a Zoom interview.

I know that the process could be quite daunting, um, especially if you don't really know what's going on. So-- And especially given online technology and somehow how-how that goes a bit wrong. Um, I think the main thing that I learned from doing that was that you can just take time if you feel like there is something going a little bit wrong.

Like, I think there were a couple of hiccups where they couldn't see my mouse. Um, I think it's quite good to remember that the interviewer is gonna be really understanding of the difficulties that you might have with it being online.

Um, and that they're also perhaps not as-not as familiar with this as they'd like to be. So I think it is just keep calm. And if there are any technical difficulties that the college will understand that and they won't affect the application of the outcome of your interview.

Um, I think as well, yeah, try to, making sure that you've got a good idea of how the interface works. So using the, um, tablet a bit beforehand was quite useful, to work out how that goes. Um, and also really basic things like knowing the difference between what's your mouse and what's your drawing on Zoom.

But, um, otherwise, yeah, I think it was a good experience. And I hope that this is useful for you guys to kind of understand what sort of thing is expected from you. But, yeah, best of luck with your applications and, honestly, don't be too nervous.

You'll be-- You might be a bit nervous on the day, but at the end of the day, it is just a chat. And if you say it's a chat and just kind of, you know, doing your best, then that's the best way that you can, you know, get the most out of the experience. But, yeah, best of luck. Thank you.

**[00:09:40] [END OF AUDIO]**