

Pīkahu Name: Computational Thinking: the International Perspective

Video Name: CS Unplugged - Sorting networks (sample classroom lesson)

Presenter: Tracy Henderson and Sarang Leehan

*Tracy:* So we've come outside today to learn a little bit more about how computers work and what we have, is this is like, a supercomputer made out of chalk and I'm going to show you why in a moment. I need six volunteers. Awesome! What I'm going to do is I'm going to give you a disc and you need to go and stand on the circles from the far, far away one. So Riley, you go away over to that far away one. Robert, you go into the next one. Ellie, you go over to that next one. Koresh, can you go over there. Louis, can you go into the last one. Okay. So I've got you guys here and this is all about teamwork and it's all about organizing data. So you guys are the start of the data. You're coming in and you're all out of order. We've got the number five, number two, number one, number three, number six and number four. Before we start going into the supercomputer, all I need to teach you is this symbol here; what does this symbol here mean? What does it mean Louis?

*Response:* Smaller than, bigger.

*Tracy:* Smaller than, bigger. What's another mathematical term that we could use for smaller and bigger? Yep?

*Response:* Less than or greater than

*Tracy:* 'Less than' or 'greater than'. Awesome! So what we have is the orange line is the 'less than' and the blue line is the 'greater than'. Let's see how this works. Can you all take a step into the box? Can you say 'Hi' to the person next to you and give them a big smile.

*Response:* Hi.

*Tracy:* Not too cheesy! What you need to do is decide have I got the bigger number or have I got the smaller number? Then the bigger number follows the blue line, the smaller number follows the orange line. Go! Now, you need to look around and check everyone's there. Then you need to say 'Hi' and give the person a big smile. Go! Now decide who's got the smaller, who's got the greater number? (pause) Do you guys know what to do? Do the next one, I didn't see anyone smiling and saying 'hello'. Smile and say 'hello'.

*Response:* Hello.

*Tracy:* Now make your decision. Go.

*Response:* Hello.

*Tracy:* Nice.

*Response:* What number do you have?

*Tracy:* Perfect. Cool. So I'm going to get you guys to turn and face me this way. We are going to see what happened to our numbers. Can you turn and hold up your numbers please? Oh! Wow! Koresh, what number have you got?

*Response:* 1

*Tracy:* What number have you got Louis?

*Response:* 2, 3, 4, 5, 6.

*Tracy:* What just happened to our numbers? We put them into our supercomputer that's chalk, like a supercomputer and we've processed it and what happened?

*Response:* We came back in the right order.

*Tracy:* Do you think that would work with everything?

*Response:* Yes

*Tracy:* What kind of things could we sort in order do you think?

*Response:* Books

*Tracy:* We could sort books. What else?

*Response:* Letters

*Tracy:* Yes. What else?

*Response:* Bells.

*Tracy:* Yes, What else?

*Response:* Notes on a piano.

*Tracy:* Yes. What else? What about big numbers, really big numbers? Could we do that?

*Response:* Yes.

(video of children sorting books by title, six-digit numbers, letters of the alphabet)

Handbells by note:

*Sarang*: Which one sounds lower? Which one sounds higher?

*Response*: I'm lower

*Sarang*: Lower, this way. Okay, just ring them one at a time. Yes. Which one sounds lower?

*Response*: Her one sounds lower.

*Sarang*: Yep, that's right, play it just once more. Yes, that sounds good. Let's hear it one more time? Yes.

(Bells played at the end of activity, ordered correctly.)