

London Primary 1. 10 and 11 year-olds.

Speaker	Line	Transcript	Time	Comment
Clip 1. Immediately following RL2 and post RL2 students interview. Math focus: – decimals, fractions. Additional PCK focus: use of manipulatives/apparatus and of exploratory talk to make thinking visible.				
A	1-5	What impressed me is how the use of the manipulatives can make visible the children's misconceptions because what I had taken for granted was that from the previous lesson (RL1) they would have understood everything - or <i>most</i> of - what we had showed them. But actually they were still making mistakes.		
B	6	They were. Well it makes visible their thinking doesn't it.		
A	7	Yes.		
B	8-10	Normally we just to kind of guess what's going on in their heads but because they're having to show the manipulative suddenly you can see ah okay that one didn't get it. It kind of makes it visible.		
A	11-12	And it also helps them to talk! Seeing on this and working out this.. The 'self-talk' really worked.		
B	13	Yeh		
C	14-17	Because it was interesting when they were feeding back to us how they'd use 'partner talk' but I suppose every now and then hen the partner drifts off to do something else, or they've already got it, they were reverting to having a little conversation with themselves.. um		
B	18	Riaz, certainly, was doing that..		
C	19-22	..which again, so it's quite nice that there's been a little bit of a knock-on from the very first lesson study that they've been remembering... You sort of highlighted that as a sort of tool for deepening understanding, for exploring... figuring it out basically. So that has been good.		
Clip 2. Post RL3				
A	23-28	But Riaz and his talk partner Tasnim . I don't think it's a case of them now knowing... not being able to make the links. It was the fact that there was a different unit – a different whole. They were a little confused. He for.. initially looked at the beginning of the tape measure, looked at the end and said 'Hundred' and I thought 'He's going to make that connection and he will be able to divide it into tens'. So he immediately went to his white board and he wrote the <i>multiples</i> of ten up to a hundred.		
B	29	Oh. I see!		
A	3-41	And I thought..you know .. I could see where he was going. But somehow or another, above the '10' he wrote one thousand and above the 100 he put one hundred. When I questioned him he appeared a little confused and I said to him: 'What is this that you are holding?' [holding up hands if holding a metre rule]. To both of them. 'Oh it's a metre measure' 'What do you know about it?' 'Oh. Well it's in centimeters.' (This was Tasnim initially). And it clicked straight away. He was able to make connections. He thought about what he had done with the base ten blocks – (he actually told me) - and he says 'Oh yeah. Here's a ten'. And put it straight to the ten centimeter. Ten centimeters. And he said 'That would be a ten.'		Blue type not on video
B	42	Ah. Okay.		
A	43-49	And I said 'What else do you know from there. He looked at his table hard and he said 'No. That's wrong!' And he pointed to the centimeter. Actually he used two fingers. I said 'So why do you say that's a hundred?' He said 'Because a hundred of them .. make the whole thing'. And Tasnim was able to see the thousand from there. And they were able to cut up the tape-measure. And from then there was no stopping them because he had immediately made that connection. But he had first to reflect on what he had done with the base ten blocks.		

Clip C - Discussion of all three research lessons in the Lesson Study

C	50-52	And in terms of the whole group? ...I think, I was just thinking from the lesson I taught ... and just from generally looking around I think.. the lesson that these children have learned.. I think everybody's made their own deepening understanding...		
A	53-55	You know I'm actually going further than that. I'm going to our first lesson study, where we introduced visualization, and they were very reluctant. They just wanted to arrive at the answer. But <i>now</i> they see the value! Yeh.		
C	60	Mmm		
A	61-62	They are actually using the strategies they were taught in terms of the visualization. They can see that does help them .. when they are stuck.		
C	63	Thinking and widening understanding to...		
A	64	So this great benefit to..		
C	65-69	[<i>Reading from workbook prompt</i>] ...And in terms of how the teaching we've developed has helped the children's learning? You know, you were saying again lots of people are finding it's worth either making sure that they have some kind of visual representations and sort of <i>allowing</i> the children the sort of chance to use them to discuss what's going on to reveal and deepen their understanding.		
A	75	What I particularly found useful, over and above that, was the introduction of the exploratory talk which we did in the first lesson. Throwing everything to them. They come up with the ideas and then you just refine them after. They loved it and you know we were able to expose some of their misconceptions and deal with it there and then. Rather than telling them - when they are not learning anything. They are just following what you are telling them.		
C	76-78	You should have got Maryam who had to head towards ordering that three digit .. er that three decimal place number as being bigger than one with two decimal places. She had to <i>do</i> that in order to genuinely learn. ...		
A	79	Yeah.		
C	80-82	..that that isn't how you get the value – that you (unclear) just fly into it so. So yeh I think that was good. And we spoke yesterday about just allowing them time before they jump in..		
A	83	That's so important..		
C	84-86	So again it is a careful measure. It's not to allow them to run too ragged. Its.. So today they spent a good time - when they were talking, when they were cutting- thinking about it. So they were on talk (unclear). So yeh!		
C	87	Reading 'Surprises'? I think Sameer.		
A	88	Oh Sameer. I've been really surprised. She's been so reserved in the past. Now she's quite bold.		
B	89	Yeah?		
A	90	Daring! Wanting to come up in front of the class and talk.		
B	91	She's kind of had a taste of that success! Challenging..		
A	92-4	That's success. It's made a difference. Even with Riaz! He just wants to guess the answer in the past Now he can see that when he gets stuck, Get that visual image. Draw a picture. And it makes sense. And I think he'll always revert to that now.		
B	95	Now he's seen the value and had success.		
A	96	He's seen the value of it yeah.		
C	97-102	[<i>Reading</i>] And did we 'find anything out about the way they were learning?' Well certainly, we've cottoned onto the way our focus children were learning. And it's interesting to note that for some children it's a combination of different things that really drive it home to them. That there's value in them all. Using the manipulatives to begin with, or creating some kind of image or picture or vision. And then they are able to move away from them later on – which think quite a few of them did.		

B	103	Yeh.		
C	104	..they got the most significant decimal (unclear)		
A	105-7	(unclear agreeing) And you recall Renada? When she got a three digit was it .. zero.. zero three? She she got wrong 'Oh that's a third' and she put the whole decimal - in the thousandths percent was her interpretation. Now she's got a different picture.		
C	108-114	In terms of ... there's probably a little bit of work to do around that quite a tricky place you took them with writing twenty three hundredths or er fourteen thousandths. There's probably a little bit more depth to be done around that. But as I suppose about going forward, its about any time you look at anything that has a decimal aspect to it – you know.. Get the jugs out. Pour out the tenths. Pour out the hundredths. You know – even if it is just one big demonstration. Be quite nice if we can get all the right containers and let them do it!		
A	115-117	It says something, you know, they actually had difficulty working in the past. But they see the value now of the manipulative. Because the drinks, the cans they normally have when (unclear) drink. Because they don't know how much liquid is in there.		
B	118-119	Mmm! Yeh! I think there's something about converting as well. Like converting those – like the measures we were looking at today into centimeters, into millimeters		
A & B	120	(Talking together in agreement but unclear)		
C	121	I'm just thinking. You could actually. You could partition 330 ml. cans (Am I right. Is it 330 ml.s?)		
B	122	Yeh.		
C	123-124	Because when you partiion it 'There's my three hundred. There's my thirty.. Just so they actually get what that (unclear) number really means. Because..		
B	155 - 127	Because I Maryam was in a process of discussion when you said 'Do you know what those numbers meant. Like if something said 'forty point seven metres' did you know what that actually was there and she said.....'No!.		
C	128-129	Yeh. Now we've actually cut them up and she actually gets why those decimal numbers exist. Why they mean. That they do have some kind of meaning I terms of erm...(unclear)		