

Lesson Study Transcripts

Set Goals

Vice-principal: I think what I'm hearing you say, is that we really need to focus on the concept of volume is, area [of base] times height, right? And that seems really simple, but clearly it's not. So that could be our overall sort of theme. What does that look like in Grade 9?

Between stages 1 & 2

Teacher: I don't know what I have. [Laughter.]

Researcher: Ok well, let's help. The total number of tiles...

Teacher: So I have 3, 6, 9, 10 ... So I have my... my position number...

Principal: You have 4 and 1... so you've got...

Teacher: I know what it is – times 3 plus 1.

Researcher: Beautiful!

Teacher: There we go. [Laughter.]

Researcher: Beautiful.

Plan

Teacher: You could have every group put their pattern up, and then, because you can move things around so nicely, they could group the ones that are actually the same pattern.

Researcher: Sure.

Teacher: So, like Cathy and Tara's patterns turned out being the exact same concepts, and we could group them together...

Between stages 2 & 3

Teacher 1: We've been fine tuning as we've gone through, you know we started with a 7/8 class, then we went to the 7 class, we made some changes between those two, and then um... we jumped to the 9 academic, and then we made some changes again to suit the 9 applied. Some great things happened in the Grade 9 academic that came out, so we incorporated that into this next lesson... we've evolved.

Teacher 2: And we changed the 'Minds On'... we tried to improve student understanding for the definition of volume, between the grade 7/8 and grade 7, so that was when we started to really make that change.

Researcher: The first 'Minds On' was the one you had the circumference...

(Chatter)

Teacher 3: So now its focused upon an aquarium with a fish...

Researcher: Prism displacement...

Teacher 4: Much better.

Teacher 5: We even fined tuned our grouping strategies too. We realized with a group of three, one student was always... it was easier to pull away from the activity, and groups of four we found the two weak students would go together and two strong students would go together, so with the group of four we had variants of two, now in Sandy's class we'll just have pairs.

Implement

Activation

Teacher: First thing we're going to look at is, we've got this fish here, how can we determine the volume of that fish? What can we do? Otis?

Student 1: Find the area of the base?

Teacher: Of the fish?

Student 1: Oh, of the fish?

Teacher: Ya... oh that's how we could get the... to get the volume of the aquarium, how do we figure out the volume of this fish here? Cainen?

Student 2: Maybe if you found the volume of the water in the tank, you could put the fish in and see how much water it displaces. Then measure how much water with the fish in it and subtract that, or no,

subtract the original from what's ah, the one with the fish, and that would be how much your volume may be...

Teacher: What do you think of that? Does that sound reasonable?

Class: Yes.

Teacher: Alright, so, if we put the fish in, that's the first step, what's going to happen when I put the fish in?

Class: The water will go up.

Teacher: The water goes up. Did that happen? Mathemagic, look at that.

Development

Teacher: So I think we're ready unless there are questions about any of the stations, we're ready to get started.

---Class works in groups---

Consolidation

Teacher: Why in the world would we ever want to know the volume of this? Kay? I gave them this [heart]. Go ahead, find the volume. Why would you want to know that?

Between stages 3 & 4

Researcher: So generally speaking, what we'll do at this point in the debriefing is we'll start with Heather... Heather will give us some general feedback on how she feels the lesson went, in terms of your own delivery of it and the response from students, that whole interaction piece and how you felt the flow was, things like that. Bits that you felt could have gone better maybe and why, or how you might change it. Just kind of your initial feedback. So we'll go from there to the other teachers in the team and have you add on, just specifically to the lesson itself, so we won't get into your observation foci at the time, so we'll just do that kind of general feedback. And then after that loop's done, then we'll have a chance to go through each observer and look at targeted pieces.

Debrief

Teacher Debrief

Teacher 1: It took some conscious decisions throughout that and, for example, just to kind of highlight one thing that happened... when I gave them the manipulatives, I was surprised that not very many people knew what I was asking, and I was like, "Oh... obviously I wasn't clear enough", because they were... some were just using the tiles, they didn't even look at the trapezoids, and I thought, "It's a trapezoid... we just talked about trapezoid tables... obviously that's not clear", so I kind of had to go do some little interventions.

Participant Observer Debrief

Teacher 2: And I think Sandy did a good job of extending each center by, with prompting questions, because our timing was actually really quick because there was no off-task behaviour because you have two adults sitting right there beside them. But I noticed a bunch of times that Sandy came to ask the 'what if?' questions a number of times, and it kind of got kids, um, you know, thinking sideways instead of right on the task at hand.

Between stages 4 & 1

Teacher: I guess this offered another chance to... and watching it by myself would have been fine, too, but having to talk about it and you pulling questions out the way that you [the researcher] did really made me think about it differently and probably better than I would have on my own, more deeply. So it almost added to that sense of the debrief. It gives you a little more time to digest when you really see it, I mean, that's pretty neat. ... so *that*, giving it time to digest the lesson, learn more about what worked and what didn't work, getting the questions asked of me was good because I think that made me think about things... having other people looking and commenting, that also was good. Not enough time in that half hour or whatever after [meaning during the debrief]. So it's adding on to that. And seeing the kids too, being able to do that, step back, and watching them – remembering what the lesson was about, and definitely talking about that – but watching them in action too, and just having that different perspective.