

CATHY HUMPHREYS: So I looked through almost every piece of student work – of your individual work rather um, to see how well you were able to show, to document your path through the investigating process. For some people I was able to really see where you were and for other people I saw a lot of shapes, but I couldn't figure out exactly what you were doing; and there was no...from the order, I couldn't tell what your tinkering was. So I am going to show you some examples again of work that were observations; how helpful observations can be along the way. I'm not going to show you one persons work from start to finish; I'll just show you examples of what I thought was helpful. Um, one of them is this - ah Omar, sorry your name is on it – I didn't mean to. Um, Um, I noticed if we put...Omar, why don't you read it because it's yours.

STUDENT: I noticed that if we put the pin in the midpoint of the two congruent sticks and made them perpendicular, a square will be created and if the angles are not right angles, a rectangle will be created.

CATHY HUMPHREYS: So that was an observation that he made along the way. Here's another really nice one where there are...there's a picture and then I don't know who this is but let me see if I can read it. Um, "diagonals have to be congruent" and even though the work isn't written out, I can tell what the person meant; and that's fine because you're making notes to yourself. Um, "it doesn't have to be perpendicular. In rectangle the diagonals are congruent," (clears throat) excuse me. So the midpoints of the diagonals meet for a rectangle and have to be perpendicular – square have to be ninety degrees, etcetera. So that kind of fiddling around with the conditions is a really important part of keeping track for your investigative process. Okay, here's another one. Um, "isosceles trapezoid - one set of opposite sides parallel." This was interesting because the person actually defined what it meant to be this shape because that's going to be an important part of your work today. Diagonals cross at the same spot or length and um, this person has same hole besides the middle and I wasn't quite sure what that meant. Oh, I see. It means not the middle, I think. And two diagonals have to cross at the same distance from the end point.

So those kinds of things are things that...see, with an investigation, you often don't finish it right on the spot, you come back to it. And some of the stuff I did in college, I would have to work on it over a period of maybe a week or more. I'd find myself still thinking about it in the middle of the night sometimes or sometimes when your brain works for you when you're not planning for it to. So that's why it's really important to keep track of where you are because if you don't have this, you're not...it'll be harder for you to remember where you are. This person did a whole bunch just on one paper – there are some sketches um, there are categories – um LS means long stick, short stick. There was a whole lot there like, can't use three sticks – all the things that um, through the investigation were important to this person. Alright? And then this group did something that I think is really – (clears her throat) they did group observations and they complied all the things that they noticed; important or not. When you're observing things,

often you don't know what's going to be important and what's not going to be important. So it's good to keep track of everything because you never know what's going to help you. So this is the kind of um, keeping track that I want us all to get better at. Alright, (clear her throat) excuse me – I'd like you to look through your own work now and on this card underneath your question or on the back, I'd like you to assess how do you think you did in keeping track of your...documenting your process and how could you have improved. So look through that. Let's take about four minutes for that. I...you know, I don't think it needs to be a grade like A, B, C, D. What I'd like to see is: here's what I did well, here's what I could have done better. How about that? I will put a prompt up for you. I'll put it on the board though because I need to get rid of the overhead. Look, I hear people talking to each other which is great. So would you now share with each other how you think you could have done better?

STUDENT: We always showed our explaining and our thinking as we found something and we showed our...we showed what we saw. You know what I think we could have done better? I think it is to have a paper like they did, that group, where we have a paper and a list of group observations.

STUDENT: Like write down everything that we remember so we don't forget.

STUDENT: Yeah, everything that we remember.

STUDENT: And this is good too but this is just like for us; we need to just do it together. That's it, I think.

STUDENT: Well, I think we drew a lot of the shapes and we got those shapes and what sticks, but I thought that I didn't make that many observations; and I felt that more observations might have helped us realize we did something wrong.

STUDENT: Oh yeah.

STUDENT: Or lead us to the solution or something. So I'm going to make more observations.

STUDENT: I think all we have to do now is prove right? Prove and then do a list...do a paper with a list of all the observations that we made and group proofs and stuff like that. That's it.

STUDENT: I did a drawing myself but I need more copious notes.

STUDENT: I think I need to make mine more organized because I have sticks all over the place.

STUDENT: I just gave all my thoughts out there and I didn't write them down. I didn't think I need to. And then I also had...you also had all the answers on your paper so I thought I didn't have to write them down.

STUDENT: I need to improve on recording my first observations; I had my conjectures and things but my questions were...but I didn't record my observations like I'd like to do.

STUDENT: I think we should have a paper with all the concepts – yeah, with a general interpretation for squares, rectangles to make it easier.