STUDENT: So that's why we had two columns.

CATHY HUMPHREYS: Okay, so I'm going to gather us back together again. So um, actually Emily, from the same group, you thought that there were some things that he should have put in there? You want to come up and write them please? Would you talk about what you think you need to show it and why you need to show it.

STUDENT: Um, so before everything there should be the givens because then how would you know this angle is congruent to this angle and...so should I write it down?

CATHY HUMPHREYS: Why don't you erase...here's what you can do – just do this and then start up there. And be sure...I know you have a soft voice when you speak but when you talk, speak so that everyone can hear you.

STUDENT: Um, so angle CED is congruent to AEB...is given and AED is congruent to BEC; and then also this line is congruent to this line segment and then this line into this line segment. So line AE is congruent to EC and then DE is congruent to EB. Since we are proving that this is a parallelogram, I guess it should be ABCD is a parallelogram.

CATHY HUMPHREYS: Emily, what are you writing there?

STUDENT: Because we're proving it's a parallelogram so I don't know...should I write that?

CATHY HUMPHREYS: It's hard to figure out what to put where isn't it?

STUDENT: Yeah.

CATHY HUMPHREYS: You could actually put ABCD is a parallelogram on that side. And then what would be a – this a question for everybody. What would be our reason for how we know that ABCD is a parallelogram?

STUDENT: You have two sets of opposite parallel sides.

CATHY HUMPHREYS: How would we know? How do we justify that? Have we shown that it's a parallelogram? Okay, how do we know? Natasha?

STUDENT: You have two pairs of parallel sides.

CATHY HUMPHREYS: Excellent! So for your reason there, Emily, on why it's a parallelogram, we have two pairs of parallel sides; that's the reason because he showed… Drew what pairs of parallel sides did you show?

STUDENT: For the first one or the second one?

CATHY HUMPHREYS: What two pairs did you show?

STUDENT: Oh, AB and BC and then AB and BC.

CATHY HUMPHREYS: Okay, good. So since they've shown that there are two pairs of parallel sides in that quadrilateral; therefore, it must be a parallelogram. Remember when we had those three dots; that's what you're trying to prove. Sometimes you'll see the three dots like this and that kind of helps you know when you're done. That means therefore and that's your final statement. You don't use this until the very end; that's just tradition and you don't have to use it. And then like I told you my um, my favorite geometry teacher on the other side at the end wrote ta da! That means "we did it!" Alright, there are other ways of doing it but…do you remember the other ways that I told you when you are done?

STUDENT: Exclamation point? Filled in square?

CATHY HUMPHREYS: Yes, the filled in square is one way and the fancy way is Latin; and I have no idea what it means – QED, what does it mean? Does anyone know? Alright, so those are just little touches. The important thing is: do we have a logical flow of steps? And the other thing is that is there anything that we don't need there? Because one of the things about proofs that are difficult is you don't have to write down everything you know; you only have to write down what you absolutely have to have. So I'm going to leave that question there um, to be thinking about. And what I'm going to ask you to do is this: each one of your groups I would like you to choose one of the quadrilaterals that you think you'd like to prove; and you're going to need to write...so you need to choose the quadrilateral, write an if then statement like this and then prove it like that. Alright? You can decided to choose the one you are the most confident about or you can try to choose the one that you think you might not be able to do and you want to challenge yourself. Whatever you want to do is fine with me. I think it would be a good idea if you were to do a sample proof on a piece of scratch paper – a sample proof on a piece of scratch paper and when you're ready there's poster paper right here – oops and you can um, again you would need to show on your poster the conjecture stated as an if then statement; the criteria that you would need to have that particular quadrilateral by its definition and then the proof plus a diagram, that's a lot. Yes…

STUDENT: So one, one quadrilateral with all that yes – not everything?

CATHY HUMPHREYS: No, no, just one. We have...I think one is plenty, don't you?

STUDENT: Yes.

CATHY HUMPHREYS: Alright, so um, resource managers you're going to be in charge of making sure that the posters get...there are pens in those little blue boxes and you know where everything is. So why don't you get together right now. Facilitators would you please facilitate a conversation to decide which quadrilateral you want to choose. Alright?