CATHY HUMPHREYS: I still want to challenge you on this one though. You're saying that this one is not an isosceles trapezoid? Alright, so I want you to investigate that because it looks an awful lot like an isosceles trapezoid to me. So investigate that and see what you think and um, because um, I think that…my thinking about this is that the not isosceles trapezoid is very, very difficult to make. And are you...and what...how did you put the diagonals together, what was the configuration?

STUDENT: Well, so I have a non isosceles trapezoid or it's supposed to be. It's right there.

STUDENT: He used the big one right here and the small one here.

CATHY HUMPHREYS: Let me see. So I am trying figure this out. So the big one, could you show me?

STUDENT: The big one like this here and this one here.

CATHY HUMPHREYS: Alright, so what you're saying is that this one is…these are parallel?

STUDENT: Uh-huh.

STUDENT: Or at least they're supposed to be.

CATHY HUMPHREYS: This is interesting, very interesting, very interesting. Alright, so where are we here as a group? What's your next step?

STUDENT: Are we allowed to look at the deltoid? It's concave.

CATHY HUMPHREYS: No, it's concave, yeah. So that was just on our paper and I didn't wipe it out, yeah.

STUDENT: So what we've been working on so far is working off of a rhombus. Because off of a rhombus, off of using these two, we've made quite a few observations off that. And right now, just before you got here we're trying to prove why some of them work off of a rhombus but not a kite.

CATHY HUMPHREYS: Hhmm. And what's the difference between a rhombus and a kite?

STUDENT: Well, this is a rhombus and it's straight. All the rest of these are a kite.

STUDENT: The difference is that these sides of the rhombus will be equal length but with a kite only the…is it adjacent? What's the term for the sides that are right next to each other?

CATHY HUMPHREYS: Do you know the term for when two sides are adjacent? Oops, I said it, I didn't mean to. Oh, my bad! (Laughing)

STUDENT: You gave it to us, you gave it to us!

CATHY HUMPHREYS: Okay, so here's the question I have and it is do you think a rhombus is a special kind of a kite? So...and I want you to refer to your definitions just in case. So make sure we clarify that.

STUDENT: A rhombus could be a kite where all the sides are congruent.

CATHY HUMPHREYS: So you think that a rhombus is a special kind of kite?

STUDENT: Yeah, like where a square is a special kind of rectangle.

CATHY HUMPHREYS: Okay, let's see what everyone else thinks about that. Could I please talk to the facilitators for a couple of minutes up here? Just the facilitators. Let's go over the process because there is still a next step. And the next step is to um, is to do this. So for each of these things, how did you convince yourself that you had...you were positive about how to make that particular quadrilateral? How would you convince a friend, which would be each other? And then how would you prove it to a skeptic? So do you think your groups are ready for this stage?

STUDENT: We're kind of unsure about what we're supposed to do. Are we supposed to make the conclusion for each quadrilateral?

CATHY HUMPHREYS: If you can.

STUDENT: Okay.

CATHY HUMPHREYS: If you can. So what do you think about your group?

STUDENT: Ah, my group has every single form of shape so we're ready.

CATHY HUMPHREYS: Okay and I just talked to your group. And what do you think? Okay, so I am going to stop everybody for a second. Thank you very much – actually would you go back and ask your groups to stop talking for a second so I can give them the directions?

STUDENT: Is this side parallel to that side?

STUDENT: See, we just can't prove that this side is parallel to this side.

STUDENT: I don't think so. No, no it's not.

STUDENT: Why don't you draw it?

STUDENT: Oh yeah, I should just draw it.

STUDENT: I think you have to use two blue ones.

STUDENT: I think you have to use a short and a long.

STUDENT: I think so too.

STUDENT: Ha, ha.

STUDENT: Just do it like this.

STUDENT: Oh wait, no.

STUDENT: I think it just depends on how you place these angles. Oh, it's like this, isn't it? Aren't these two parallel?

STUDENT: That's like what I was saying. They are just very far apart from each other. Oh wait, no. I don't think they are.

STUDENT: I don't think they're parallel because...wait look, that and that. Do you think it's the same slope?

STUDENT: It looks like it but…

STUDENT: Don't those lines look parallel, a short one and a long one?

STUDENT: How did you make that?

STUDENT: Now we just need to prove that parallel lines are congruent.

STUDENT: These have to be congruent.

STUDENT: Yeah.

STUDENT: So it could be a blue and a pink.

STUDENT: That's how mine was.

STUDENT: So it can't be the two blues then. So yours is right. It can't be the two blues; it has to be a blue and a pink.

STUDENT: But first how do we prove that...so okay, how can we prove that parallel lines are congruent and alternate interior angles are congruent and...

STUDENT: If the two segments…

STUDENT: So if we just drew a random transversal, we have to be able to prove that this is congruent to this and this is congruent to that; and then we can prove that these two lines are congruent or parallel. Do you have a compass?

STUDENT: Oh, there's one up there.

STUDENT: I don't know how to use these.

STUDENT: Put this right here and make sure it is straight along the line.

STUDENT: Okay, so that's one twenty three.

STUDENT: That's pretty much one twenty three.

STUDENT: Is that it?

STUDENT: Yeah, but how do you explain it? Wait.

STUDENT: These dots have to be congruent. It doesn't have anything to do with the dot; it has to do with the length. The lengths of the top two segments of the diagonals have to be congruent.

STUDENT: I don't know how to... How are we going to write that down?

STUDENT: See this one has three dots and this one has two but the length, they're both congruent.

STUDENT: But look, but look if you put them next to each other they're not congruent like that.

STUDENT: The dots don't really matter.

STUDENT: Yeah it does.

STUDENT: Wait.

STUDENT: Well, look these are congruent, four and three.

STUDENT: Yeah, that's what I'm saying.

STUDENT: These right here, if you block it off these two are congruent.

STUDENT: So then the segments have to be congruent. It's not about the dots then.

STUDENT: Yeah, I think it has to do with the segments not really the dots. I think the dots are just there for reference.

STUDENT: Well then if they are congruent then suppose it goes like that on the dot. Well, does that make a trapezoid because they are not lined up?

STUDENT: Wait, let me see how I did mine. We have to figure out some sort of property and say that...

CATHY HUMPHREYS: May I please talk to the facilitators for a couple of minutes up here.

STUDENT: Because you matched it up with the dots.

STUDENT: Because you told me to.

STUDENT: Is that me?

STUDENT: Yeah.

STUDENT: Oh, but no it doesn't have to be Annabelle.

STUDENT: So what do we write?

STUDENT: I think we should just write what we think about it mathematically, not what…

TEACHER: So tell me why you were worried about those dots? For what purpose was that?

STUDENT: Because a lot of the things that we wrote had to do with the midpoint.

TEACHER: Okay.

STUDENT: So we don't know if we should go by what the dots are telling us or by what mathematically.

TEACHER: So what do the dots tell you? What do they tell you in terms of...?

STUDENT: They break the entire segment up into parts.

TEACHER: Okay. Is there another way of doing that without using the dots? Is there another tool that you could use because basically you say that there are more dots on this side than there are on this side?

STUDENT: No. So this is the midpoint.

TEACHER: Right, yes. So I'm just saying if it crosses here.

STUDENT: These two do not look congruent.

TEACHER: So what is the length from here to here versus the length from there to there?

STUDENT: She said to stop talking.

STUDENT: Why?

STUDENT: I don't know.