

# O1R\_estats full conjecture map

Sunday, October 11, 2009  
9:05 PM

S4: What's the ball made out of?

S1: Is it hard? (the pith ball)

question

S4: No. (Shaking her head) It looked hard but its not. It's like

CONFLICT & RESOLUTION

S3: Styrofoam.

claim

S4: feels like styrofoam yeah.

S4: Oops. (Laughter)

S3: (Inaudible comment.)

S1: (Inaudible comment.) Yeah, on camera, they got you

S2: I think it has charge.

claim

S4: Bring it near the ball to see if it worked. (S2 brings the plate near the pith ball.)

S1: No.

S4: A little bit.

S3: Your sweater sucks.

S4: Here, try the, try the cloth. (Passes S2 the cloth.)

S2: Which side should I do it on? Like that? (Rubbing the plate.)

S4: I don't think it really matters.

S3: (Inaudible comment to S4.)

S2: /The sides too?/

S4: (In a mocking tone.) "I think rubbing creates static electricity."

S1: (Laughter.) You're good. (Pause as S2 continues to rub the Styrofoam plate and then holds it up to the pith ball.) Is it doing anything? (They do not see any attraction between the plate and the pith ball.)

S4: Let's go with the little pieces of paper approach.

S2: Yeah.

S4: How about we use this extra tutorial?

S2: How about, that sounds like a good idea.

(Laughter.)

S4: All right, we'll use notebook paper. (Laughter.) /??/ yet. (To S3)

(Inaudible comments by S1 and S3.)

S4: I'm kidding. (Laughter as they look at the camera.)

S3: There's the /?/.

S4: And I'm sitting here with the microphone right in front of me. "Let's tear up the tutorial." POPPING OUT & POINTING OUT

(S2

S3: (Inaudible comment. Laughter.)

S2: You're gonna set the whole building on fire. Oh great, if there is a fire they'll think I did it. POPPING\_OUT(they)

S4: Do you think he watched that last semester like before this semester?

S2: Maybe.

S4: All right, we'll try it with these little pieces of paper. (Puts the pieces of paper on the table and S2 holds the charged Styrofoam plate to them.)

S1: Yeah I saw. (the paper jump up)

S4: Oh, it definitely works.

S2: Oooh-wahhhh. (waving the plate over the paper.)

S3: Maybe that was a fluke.

CONFLICT

S4: Must be windy in here or something.

S2: Okay. That's great.  
S4: Okay.

(05:15)

[00:04:51.05]

S3: It's so damp in here, it's not going to work that well.

S4: It's hot, too.

[00:04:56.26]

4.57 S2: So why, I don't get this. What's the rational explanation for why there's no sparks between our hands. Is it 'cause they're moist?

5.03 S3: Because -

5.04 S4: Because of moisture.

5.05 S3: - there's so much moisture in the air and its a conductor.../electricity/ (Motions with his hands.)

5.07 S4: In he air and in your skin, it's mostly in your skin. (S2 nodding.)

CONFLICT

5.19 S4: (To S2) But why does, is it just moisture?

5.22 S1: So moisture prevents -

5.24 S4: 'Cause they're

5.24 S1: it?

0 Simultaneous conversations:

5.25 S3: Because it's, it's a conductor so like its not going to let charge build on your hands because moisture's a conductor so it's like gonna dissapate off into the atmosphere...[Pointing to his fingertips.]

0 S1: Okay.

0 S4: I mean they're neutral, our hands are neutral. No matter how much you rub your hands the papers aren't going to /jump to them./

CONFLICT

5.31 S2: So what happens when you scuff your feet on the carpet and then you touch the door nob?

0 S3: ...before it actually builds up enough so that you'd see a spark.

5.37 S4: I guess it stays in your body.

0 S2: Does it carry through your body?

5.39 S4: Yes. But I guess its just, it must be too moist.

CONFLICT\_RESOLUTION

0 Return to Group Discussion:

5.43 S1: Mmm-Mmmm.

5.46 S1: What about two plates?

[07:55]

7.26 S2: So, but that would work with the plate thing though 'cause they're two separate plates and they're made out of the same thing.

7.3 S4: Yeah. (Rubbing two plates together.)

7.31 S2: So I guess maybe if they're...

7.36 S4: (Holds the rubbed plates to the pieces of paper.) No.

7.37 S1: It's not working.

7.38 S3: I gotta think its because there's just moisture and, then, I guess--

7.41 S4: I definitely think moisture with the hands.

7.43 S2: Yeah.

7.44 S4: But I don't know why it doesn't work with the plates.

CONFLICT

7.49 S3: If one of them is not charged to being (begin?) with then I don't know though--

7.52 S4: No. Because --

7.54 S3: Yeah. I see.

7.56 S4: If, if they had no net charge to begin with, would either one of them have a net charge as a result of rubbing? [Reading from the tutorial.] We said in lecture that if you take an uncharged balloon and rub it against uncharged hair, you get a charge.

8.09 S2: Its still, 'cause it like concentrates the ??-

8.11 S3: Yeah 'cause it transfers /them-though/, so yeah

8.13 S4: It concentrates the ions?

8.15 S3: Yeah its, its like a transfer. Like they just rub it and like excite, excite the s, like (Laughing at his inability to get the words out.) excites electrons and they jump up to the balloon.

[08:45]

0 (3 second pause)

8.3 S2: That sounds good. [Sounds not convinced.]

8.3 S3: I've got a speech impediment. (Laughter.) HUMOR

8.32 S1: So there is a charge created when it rubbed --

8.35 S2: So is there a net charge to begin with? They're both neutral until you start changing up the, I guess the balance of how they're spread out. (Wiggling her fingers.)

0 [7 second pause while they write on their tutorials.]

8.48 S1: So a charge is still created?

0 S4: Yeah.

8.52 S1: But, if the charge was there, wouldn't we be able to pick these [pieces of paper] up? CONFLICT(inconsistencyWithExperience)  
0 S2: I don't know.  
8.57 S3: Yeah I don't see why -  
8.57 S4: Why if you rub the plates aren't they excite, like, if you rub things together we say that electrons get excited and whatever a charge. But like, why wouldn't it work with plates?  
9.09 S2: I thought it did work with plates?  
CONFLICT(inconsistentExperiences)

[11:40]

10.25 S2: What happens if you rub two balloons together? Can you stick them on the wall?  
10.3 S4: I don't know.  
10.31 S3: I don't think we can rub balloons right now  
10.34 S4: I don't think it would work.  
CONFLICT?  
10.37 S2: Because you clothes stick to themselves too like. (Laughter.)  
0 S4: Yeah.  
10.4 S2: Have you ever like took a shirt out, a shirt out of the dryer and went to like shake it to fold it and its like kcreeer [Strange sound as she scrunches up her body to show the shirt].  
0 S4: Yeah.  
10.45 S2: You can like hear it [Laughter] like crackling.  
10.47 S4: The only place I've seen sparks from static electricity was in my sheets coming out of the dryer.  
10.51 S2: Really?  
0 S4: [Nods her head.]  
0 [5 second pause.]  
10.55 S4: All right, I have no idea.  
10.56 S2: Alright. Next. [They all flip over their tutorial.]  
10.57 S4: The joy of tutorial. POPPING OUT;  
AFFECT  
10.59 S2: I know.  
11 S4: It confuses you. [Laughter.]  
11 S2: No, no, uh closure.

[12:00]

11.42 S4: Yeah. We did play along we just didn't know we were. [Laughter.]  
POPPING OUT  
11.42 S2: So we just walked through all of that now we're on part three. We just made up like every [??]  
11.49 S4: The tape is charged for the same material. Why doesn't it work with the plates? I don't know. Let's go to the next question.  
11.53 S2: Now we're ready f - Oh we gotta, wa - we gotta do our, our TA check. [in finger quotes.]  
11.58 S4: Oh.  
11.58 S2: Before we're allowed to continue.  
11.59 S3: Are, aren't we supposed to go and try to fix whatever discrepancies  
12.05 S1: Yeah. Um.  
12.06 S4: Yeah.  
12.09 S2: We're reconciling.  
12.13 S1: So the two pieces of tape did get a charge, but not plates.  
12.18 S2: So.  
12.2 S4: So we're pretty much saying it depends on the material. That we need to look at the properties of the materials.  
12.28 S3: [?How good] a conductor I guess. [?Something like that] I don't think tape's a very good conductor though.  
12.33 S4: No. CONFLICT  
12.34 S3: I'm just guessing. [Laughter.]

[12:15]

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12.34 S3: I'm just guessing. [Laughter.]  
12.35 S2: It's probably better than foam though I guess, since it was able to generate [shakes her hand.]  
12.4 S4: No well if you think about something that might get staticy, I would think Styrofoam.  
12.44 S3: What are we [ending up doing?]  
12.46 S4: Styrofoam's really good with static. Like that's why this [the pith ball] is made out of it for sure. [5 second pause.] Like if you rub this [rubbing plate with cloth], we know that this gets staticy. [holding plate to pieces of paper that do not move.] Okay.  
13.03 S2: Not when you do it. [Laughter.]  
13.04 S4: Apparently, um, that's not right either.

0 [Laughter.]

13.07 S3: Well we saw it earlier so –

13.1 S4: Yeah, but I mean does the cloth get staticy too?

13.16 S2: I would assume it was, it was. If it was hot and dry enough, just like sheets and the sweater come out of the dryer.

00:24:11.28]