

Natural Resources pH Classroom

Student: ... soy beans.

Teacher: Soy beans, yeah. Team one, you guys have to do ...

Student: Soy beans.

Teacher: Soy beans. Yeah, because you had nothing here to put [crosstalk 00:00:08]. You guys understand the concept of the planting, but we're having a hard time with the [TDS 00:00:15] and the pH, because you guys usually get it perfectly to where it's at right now and then it starts to burn or it starts to die off. We're normally seeing that you guys' TDS and pH levels have been off. Today, what we're going to do is we're going to practice, reinforce that to make sure you guys all have this down and then we'll actually go out into the greenhouse. I'll individually call you up. You guys will test each tank, that's going to be your self assessment for today, and then while other people are, while I'm doing that, other people will be doing their side jobs.

As you can see, team one ... Team one, you guys are going to plant soy beans and make fertilizer; your fertilizer tank is low. You guys are also going to have to check your lettuce because a lot of them are doubled. You guys got to take out one, leave the other one.

Team two, you guys just have to plant cucumbers and plant soy beans. Your cucumber tree should be good. We're going to run it to test to make sure no water is leaking, but it should be set to go. Okay, so as long as you have that system running for today, just run it with water to make sure that it's sanitized, so next week you guys can put your plants in. Okay? We understand that.

Student: Yep.

Teacher: All right, so, practice makes perfect. What does TDS test? When you're doing your hydroponics, what does it test? What are you testing for?

Student: Fertilizer content.

Teacher: Fertilizer content. Very good. If your fertilizer is too high, what does your plant look like?

Student: Burned and [inaudible 00:01:38].

Teacher: Your leaves are burning. Very good. If your TDS is too low, what does it look like?

Student: Yellow.

Teacher: It's very yellow and it pretty much stunts the growth. It's not going to get any bigger than that. What about pH? What does pH test?

Student: The acid.

Teacher: Acidic and ... [inaudible 00:01:54]. If your acidity is too high, say it's a red color, what happens to your plant?

[00:02:00]

Group: Dies. [inaudible 00:02:02]

Teacher: What does your plant look like if you have too much acidity?

Student: Yellow.

Teacher: It starts to turn ... You're starting to see yellow factors in there. What if you have a base and it's turning blue or purple?

Student: Something's wrong.

Teacher: Something's wrong, yeah. What is that plant telling you? It needs? [crosstalk 00:02:24] It's going to need a little bit of boost. If your pH is too high, say it's red, what do you need to do with it? What do you put?

Student: PH up. [crosstalk 00:02:34]

Teacher: You put pH up. Okay, because that will even it out to make it go down. If it's too low and your color is blue, what do you put?

Group: PH down.

Teacher: PH down, that will even it out. Okay? The paper that I just gave you is going to be a mini lab. You guys are going to work in little groups. If you look at the first one, your directions ... In your groups there are five tests of different fertilizer solutions. These fertilizer solutions I've gathered from around our facility and I made them ourselves, so they have been tested. Okay? These are what you guys are seeing on a daily basis, nothing new. You're going to write your number of the cup you are testing and you're going to write the TDS meter. I only have two meters because yes, these meters are expensive, so please share. Yeah? What is the first thing you do with the meter? [crosstalk 00:03:21] Turn it on and take off the ...

Group: Cap.

Teacher: Cap. If you have the blue cap on, it ain't going to read. Yeah, so you take off the cap. When you're done you put the cap back on. You turn it on and you put it in the TDS cup. You read the reading. Okay? You're going to write the TDS reading next to it in that box. The next thing ... Is that TDS good for lettuce? You're going to write yes or no. If it is not good for lettuce, you're going to write what we have to do to make it good for lettuce. Okay? Same thing with the cucumbers, same thing with the soy beans. What is the

[00:04:00] range for lettuce for TDS? [crosstalk 00:04:00] Nine hundred to [crosstalk 00:03:56] thirteen hundred, that is your range. If you're in between that number you're good. If you're not, you need to fix it. Okay?

What about cucumbers and soy beans? What is your range? [crosstalk 00:04:11] Thirteen hundred to fifteen hundred. Very good. Why do you think it's higher than lettuce? Why is cucumbers and soy beans higher TDS than lettuce?

Student: It flowers and it's longer.

Teacher: There's flowers and there's actual fruit coming out from the plant, whereas lettuce is just a leafy green, okay, so it can be lower. If the lettuce TDS was too high, it will automatically start to burn. Yeah?

Student: Yeah.

Teacher: You have four cups to test for TDS. Okay? Four cups for TDS. Then you have two questions to answer on the bottom. On the back ... I mean, sorry, you have five cups, five tests for TDS and then you have four for pH. Okay? When it comes to pH, I have four testing kits. Okay? Each team will have one, you'll go around. You fill up the tube full?

Student: No.

Teacher: No. How full do you fill it?

Student: Half.

Teacher: Half way. Yeah? How many drops do you put in?

Group: Three.

Teacher: Three. Then you put the cover on and you shake it. What color are we looking for? [crosstalk 00:05:08] That's the color we want because the pH for [inaudible 00:05:14] is?

Student: Seven.

Teacher: Seven. Very good, which is neutral, that's exactly what we want. If it's red, that means they have a lot of ...

Student: Acid.

Teacher: Acid. If it's blue, green, purple, you've got a lot of ...

Student: Problems.

Teacher: [crosstalk 00:05:25]. Then, same thing like your TDS, you're going to write the cup

number, you're going to write the color for the pH reading. Sorry, I put TDS, just cross that out and put pH reading. Then you're going to tell me what it does for the lettuce, what you have to put in, what you have to put in for cucumbers and what you have to put in for soy beans. If your lettuce is to ... Your pH is too acidic, you're going to put pH ... [inaudible 00:05:48] Up. [Base 00:05:50], you put pH ...

Student: Down.

Teacher: Down. Yeah. It kind of messes with everybody, the up and down part. Then you have your two questions on the bottom. Is there any questions?

[00:06:00]

Student: How many people do you want in the group?

Teacher: Three to four. [crosstalk 00:06:04] Okay? Three to four. Get in your groups while I set up everything, please.

Student: All right. [crosstalk 00:06:11]

Teacher: On this side of the room, you guys will be testing your TDS. [crosstalk 00:06:29] On that side of the room, you guys will be testing your pH factors. [crosstalk 00:06:38] Make sure you guys label the correct cup that you guys are testing because you guys may not be doing it in order. All right, here's another [inaudible 00:07:00]. All TDS is on that side and all pH will be in the middle. Okay? You guys are going to have to walk around a little bit. Does somebody have another pH tester? You guys got one. One ... [crosstalk 00:07:18] Is there two there?

Student: No, only one.

Teacher: One. I'm missing one more. Does somebody have ... Oh, right there. I'll take that [inaudible 00:07:26] TDS. Thank you. TDS is on that side, pH is on this side. Let me know if you guys have any questions. [crosstalk 00:07:37] Mm-hmm (affirmative), perfect. Whatever cup you guys are [crosstalk 00:07:40]. What color do you think that is?

Student: Let me see it. [crosstalk 00:07:57]

[00:08:00]

Teacher: So you got an orange. Okay, what do you do? [crosstalk 00:08:06]

Student: Miss ...

Teacher: Yeah? [crosstalk 00:08:07] You're going to [crosstalk 00:08:10]

Student: TDS number four and then [crosstalk 00:08:15].

Teacher: ... different. I don't want you guys [inaudible 00:08:27]. [crosstalk 00:08:30]

Student: ... reading the color?

Teacher: Mm-hmm (affirmative), you put the color and if it's good for all [crosstalk 00:08:53]. Then you guys can move to the next one. [crosstalk 00:09:15] When you guys are done, empty it out so the other team doesn't see the color. [inaudible 00:09:31] No cheaters, no cheaters. [crosstalk 00:09:37] Okay, so what color [crosstalk 00:09:47] No. [crosstalk 00:10:00] 00:10:01

Student: So [inaudible 00:10:41], you're putting no, yeah, for all three of them. [crosstalk 00:10:49]

Teacher: ... the color of the water. [crosstalk 00:11:21] Perfect. Because it's orange?

Student: Yeah.

[00:12:00]

Teacher: Good. [crosstalk 00:11:51] What happened? [crosstalk 00:14:24] When it's red, that means you have too much acid ... Too acidic. What do you think [crosstalk 00:14:39]

Student: Yellow.

Teacher: Yellow. [crosstalk 00:14:44] Pretty much [crosstalk 00:14:44] and you squeeze a lemon all on top of it. What's going to happen to the ... [inaudible 00:14:52]

Student: Red. [crosstalk 00:16:26] Red. [crosstalk 00:16:42]

Teacher: What if the TDS is very, very high. [crosstalk 00:17:13] caliper is telling you it's way over, O-V. The caliper will only read up to four thousand five hundred. [crosstalk 00:17:20] super high. If it goes O-V, you could just go O-V to tell me what we have to do. [crosstalk 00:17:25] It did go up to five thousand? [crosstalk 00:17:27] Right? [crosstalk 00:17:31] That's the highest and I should never see it like that. [crosstalk 00:17:36]

[00:18:00]

Student: Ten thousand [crosstalk 00:17:41]

Student: ... start at thirteen. Yeah?

Teacher: They start at thirteen?

Student: Thirteen hundred [crosstalk 00:18:23]

Teacher: What do cucumbers start at?

Student: Thirteen to fifteen hundred. Yeah?

Student: Twelve, I thought. [crosstalk 00:18:33]

Teacher: No, I know it's not twelve. [inaudible 00:18:41] It's either eleven or thirteen. [crosstalk 00:18:43] Eleven to fifteen. There you go. [crosstalk 00:18:48] Did we find it? [crosstalk 00:19:21]

[00:20:00]

Student: It's orange. [crosstalk 00:19:46] It's acidic [crosstalk 00:19:52] I'm not sure. Wait, is it acidic?

Student: Acidic. [crosstalk 00:20:05] It's acidic. [crosstalk 00:20:10]

Student: No, the lower the base.

Student: No, the higher is the base. [crosstalk 00:20:14]

Teacher: All right. I'm going to give you a few more minutes to finish up. Once you're good have a seat. We're going to see what everybody came up with. [crosstalk 00:20:57] ... pH though. [crosstalk 00:21:13] All righty. It looks like everybody is wrapping up. Very good. Your TDS readings ... Cup one? What was everybody's around about readings for cup one, TDS? [crosstalk 00:21:33] One eighty? I got a one thousand eighty.

Student: No, no.

Teacher: Oh, one eighty.

Student: Yes.

Teacher: One hundred eighty.

Student: Cup one?

Teacher: One eighty for cup one. [crosstalk 00:21:44]

Student: Oh, no, no, no, no, no, my bad.

Teacher: For cup one. [crosstalk 00:21:49]

Student: Nine seventy.

Teacher: [00:22:00] Nine seventy? Nine fifty. Nine seventy, nine fifty for cup one for TDS? Is that about where everybody's at? Nine fifty to nine seventy? [crosstalk 00:22:01] Okay. For lettuce, is that good or bad?

Group: Good

Teacher: Good. Cucumbers?

Group: Bad.

Teacher: Bad. What do we need to do?

Group: Add fertilizer.

Teacher: Add fertilizer. Very good. Soy beans?

Group: Bad.

Teacher: Bad. [crosstalk 00:22:14]

Group: Add fertilizer.

Teacher: Add fertilizer. Any questions with cup one?

Student: No.

Teacher: Cup two, what was our readings?

Student: One seventy.

Student: One eighty.

Teacher: One eighty, one seventy, one sixty. That's about the same range. Now, lettuce?

Group: No.

Teacher: It's bad. Right? One hundred eighty, not one thousand, one hundred eighty ... So what do you need to do?

Group: Add fertilizer.

Teacher: Add fertilizer. Cucumbers and soy beans?

Group: Add fertilizer.

Teacher: You need to add fertilizer. One eighty ... That's just pure water. Okay? When it's in that range, that's just pure water. Okay? Cup three. What did we get for TDS? [crosstalk 00:22:50]

Student: Twelve eighty.

Teacher: Eleven hundred, twelve eighty ... [crosstalk 00:22:56] Twelve forty. Okay. All around the

same. What do we do for lettuce?

Student: Nothing. [crosstalk 00:23:01]

Teacher: Lettuce is good. Cucumbers? [crosstalk 00:23:03] Soy beans?

Student: Good.

Teacher: Good. Cup four.

Student: We have a problem.

Student: Eight sixty.

Teacher: Eight sixty.

Student: Too high.

Teacher: Eight hundred sixty?

Student: No, low.

Student: Oh, for three or four?

Teacher: Mm-hmm (affirmative). [crosstalk 00:23:22] Number four we got eight sixty? Some got ... Did anybody get a different number for number four?

Student: Twelve eighty.

Teacher: You guys got twelve eighty.

Student: Twelve eighty.

Teacher: Twelve eighty? [crosstalk 00:23:34] Ten eighty. Those of you who got the eight sixty ... Is it good?

Group: No.

Teacher: No, so you guys are going to have to put ...

Group: Fertilizer.

Teacher: Fertilizer. Okay. Those of you who got the twelve eighty?

Student: It's good.

Teacher: Why do you think it's different from one to the other? [crosstalk 00:23:51] You see how sometimes they got eight eighty and they got twelve eighty? Why do you think that changed? You guys used the same cup. [crosstalk 00:23:57]

[00:24:00]

Student: The stuff dissolved more.

Teacher: It could've dissolved more or the ...

Student: They didn't wash the meter.

Teacher: Exactly. The meters had not been washed. You guys are just popping them in, popping them in. Whatever it was in the last one it could affect the other one. Okay? When we do it outside, what do you guys have to do?

Group: Wash it.

Teacher: You have to wash the meter every time you change the reservoir. Okay? It could be still reading from the last reservoir, so you've got to wash it. Good thing you guys caught that. Very good. What about cup five? [crosstalk 00:24:28] Over five thousand. Way too high. What do we need to do for all three?

Group: Add water.

Teacher: Add water to dilute it. Now let's say your reservoir is all the way full but it's still reading five thousand. What do you do?

Group: Dump off some water.

Teacher: Very good. Bail out water. You get a bucket, you just bail out water and then you put water, then you test it again. Okay? Very good. Any questions on TDS?

Group: No.

Teacher: If your TDS ... What happens to the vegetable crop if the TDS is too high?

Group: Burns.

Teacher: Burns. Too low?

Group: Turn yellow and stunt growth.

Teacher: Growth stunts and your vegetables start to turn yellow. Very good. PH readings cup one?

Group: Red.

Teacher: We got red.

Student: Orange.

Teacher: Some got orange. What does that mean?

Student: PH up.

Teacher: You add pH up because you have too much?

Student: Acid.

Teacher: Acid. Very good. Cup two?

Student: Good.

Teacher: Good. You got [inaudible 00:25:24] yellow. Cup three?

Student: Good.

Student: Yellow.

Teacher: Good. [inaudible 00:25:25] yellow. Cup four?

Student: Yellow.

Teacher: Yellow. Very good. It was very difficult to make ... I could not make blue. I got all these readings from your tanks and the other ones. That means you guys have been doing really, really good, that I could not change it no matter how many different things I put in, I could not change it. You guys are doing an awesome job on that. I literally put four different fertilizers in one of the cups and it still did not change. You guys are doing an awesome job. What happens to the vegetable crop if the pH is too high?

Student: It will burn.

Teacher: Burn. PH too low?

Student: It will stunt.

[00:26:00]

Teacher: It will stunt. Very good. PH and TDS, they both can do kind of the same thing, but it does affect the plant and you won't be able to see it. Right? All right. Any questions on this? We should be good from here out. I shouldn't have any questions about TDS, no questions about pH. Right? We should be ...

Student: Yeah.

Teacher: ... awesome opossums. All right. Team one, you guys are planting soy beans, making fertilizer and checking your lettuce [crosstalk 00:26:24] doubles. Yeah. You guys need to get all your supplies. I have no supplies out there for you.

Student: Did you reprint the paper?

Teacher: The fertilizer content?

Student: Yeah.

Teacher: No. I will get that for you. Your seeds are all right there. Please make sure you do not get the seeds wet.

Student: It's half of fertilizer and half of [crosstalk 00:26:40]

Teacher: Very good. Make sure you guys are mixing correctly. Team two, your fertilizer [crosstalk 00:26:44]

Student: ... water.

Teacher: Team two, you [crosstalk 00:26:49] cucumbers and planting soy beans today. Make sure you guys [crosstalk 00:26:52]. How many extra do you guys usually plant, just in case it does not germinate? [crosstalk 00:26:59]

Student: Five.

Teacher: Five extra. Yeah. Say your lettuce, your cucumber, you need eighty ... You should be planting eighty-five. Okay. Your lettuce, I mean your soy beans, you guys are only doing half. Team two does half, team one does half. You guys each do five extra. You guys are doing that. I'm going to go check on our [inaudible 00:27:14] while you guys do that. When I get in there, be ready. I'm going to individually call you to test the tank and that's going to be your assessment for today. Any questions? All right. Can you guys put all the pH and TDS ...

Student: Miss [inaudible 00:27:30], are you going to watch us when we do the fertilizer first?

Teacher: Mm-hmm (affirmative). You guys can get all your supplies [audio skips 00:27:36]

Student: Do you want this on your desk?

Teacher: Yes, please turn in your papers. [crosstalk 00:27:40] two meters and two test kits for today please.

Student: I've got one. [crosstalk 00:27:47]

Teacher: All the cups ... If we can get all the cups together and put them on the outside table, please, so that way nothing will spill inside. All the testing cups, please take outside. [00:28:00] [crosstalk 00:28:04] Yeah, [crosstalk 00:28:06], just water and fertilizer. Thank you. Thank you. All your supplies should be left [inaudible 00:28:13]. Don't forget your cart. [crosstalk 00:28:19] How are we doing in here? [crosstalk 00:28:46] How was your [inaudible 00:28:53]? Did you guys test it? [crosstalk 00:28:55] Okay? Your pump is going through the ... Your pump is coming inside from here right? [crosstalk 00:29:24] Yeah, you all need [crosstalk 00:29:27]. I don't even know [inaudible 00:29:31]. [crosstalk 00:29:38] Very good. While some of you guys are doing that ... All this is set up [00:30:00] [inaudible 00:29:49] Make sure you guys check your pH and your ammonium nitrate [crosstalk 00:30:02]. Very nice. [crosstalk 00:30:08]

Group: Yeah. [crosstalk 00:30:12]

Teacher: Good job guys. [crosstalk 00:30:21] running today. Right? Right? [crosstalk 00:30:23]

Student: Are you guys following her?

Student: Yeah. [crosstalk 00:30:37] It's the first time we really had to do one like this. Most everybody's sitting in desks. You know what I mean? This is much better. Huh? Do you guys want to go sit in desks?

Group: Nope.

Student: No.

Teacher: Does it work? [crosstalk 00:31:13] It was shooting out right?

Student: Yeah.

[00:32:00]

Teacher: All right, so are we just giving it a little bit of a drop? That's not too bad though. Okay. We're going to do, still get your plants ready for the system. After, we'll get the [inaudible 00:32:09] fix it up. Chris, will you turn off the water? Get yourself set up [inaudible 00:32:14]. [crosstalk 00:32:16] The blue one?

Student: Yeah, I guess somebody [crosstalk 00:32:19]

Teacher: As soon as you [crosstalk 00:32:25] All right, so let's see. Student, you're up. Grab a TDS meter. [Student 00:32:38], you're up. Grab a TDS meter. [crosstalk 00:32:44] Leave them all alone. We're going to test them all. I'm having everybody [inaudible 00:32:48] the test. Don't change anything. You've got a TDS meter? [crosstalk 00:32:55] Mm-hmm (affirmative). Was that one like no water content?

Student: Yeah.

Teacher: Okay, so those of you guys should be getting your [perlites 00:33:14] ready.

Student: Is there another bucket?

Teacher: There should be one more upstairs. [crosstalk 00:33:20]

Student: Fourteen hundred.

Teacher: Fourteen hundred. Good or bad? [crosstalk 00:33:24] Very good. Check the pH. You're good. Go ahead and test. [crosstalk 00:33:31] What is it?

Student: ... forty. Add fertilizer.

Teacher: Add fertilizer. Very good. Check the pH. Student, Allison, TDS. [inaudible 00:33:49] No we can use that. Get down to [crosstalk 00:33:53]

Student: Who's next?

[00:34:00]

Teacher: Student. [crosstalk 00:33:57] Student, you can check that one. [crosstalk 00:33:59] Allison, you can check [inaudible 00:34:05]. [crosstalk 00:34:13] Perfect.

Student: Half, half ...

Teacher: Half, half of each. [crosstalk 00:34:23]

Student: Where's a mixing spoon? [crosstalk 00:34:34]

Teacher: Student ... [crosstalk 00:34:46] You put a little bit [crosstalk 00:34:51]. It has a little bit of [crosstalk 00:34:52] on it but it looks pretty good. Good job. [crosstalk 00:34:55] Student, you can do TDS for that one. [crosstalk 00:34:57]

Student: Eleven hundred.

Teacher: Eleven hundred, so what do you need to do? [crosstalk 00:35:01] Very good. Now check pH.

Student: I got nine ninety.

Teacher: You got nine ninety?

Student: Yeah.

Teacher: What do you do [crosstalk 00:35:04] For cucumbers? [crosstalk 00:35:11]

Student: Add fertilizer.

Teacher: Very good. Check your pH. [crosstalk 00:35:15] the spoon over here. [crosstalk 00:35:30] What you got?

Student: Eleven hundred.

Teacher: Eleven hundred? [crosstalk 00:35:35]. Good. Check the pH. [inaudible 00:35:49] [crosstalk 00:35:54]

Student: Turn off the water? [crosstalk 00:35:57]

[00:36:00]

Teacher: Team one, make sure you guys [inaudible 00:36:04] fertilizer [inaudible 00:36:06]. Wash it off before you start mixing. [crosstalk 00:36:08] Good job [inaudible 00:36:08]. [crosstalk 00:36:12] and you can check TDS [crosstalk 00:36:18]. Empty out those tanks, wash them up. Let's go. Everybody got their baskets accounted for? All these baskets are getting counted? Count your baskets. [crosstalk 00:36:32]

Student: What is this? Lettuce or cucumbers? [crosstalk 00:36:42] Oh, lettuce, yeah. [crosstalk 00:36:43]

Teacher: You got this. You got this. What do we have?

Student: Eleven [crosstalk 00:36:48]

Teacher: Eleven ninety. Is that good or bad? [crosstalk 00:36:51] It's good. Very good. It's between what? [crosstalk 00:36:55] So you're good on that. Now you're going to check the pH. What are you? [crosstalk 00:37:05] Eleven hundred. Good or bad? [crosstalk 00:37:07] Very good [crosstalk 00:37:12] and the cabbage [crosstalk 00:37:21]. Where the cabbage is?

Student: Yeah, where it was.

Teacher: Okay. [inaudible 00:37:30] Okay.

Student: Okay. [crosstalk 00:37:38]

Teacher: ... you're up.

Student: This is good. This is good. [crosstalk 00:37:47]

Student: It was ten ten.

[00:38:00]

Teacher: Ten ten? [inaudible 00:37:58] Eleven hundred for your lettuce? [crosstalk 00:38:14]

Student! [inaudible 00:38:18], you're up. [crosstalk 00:38:19]

Student: Do the pH now?

Teacher: Yep, do the pH now.

Student: Student! [crosstalk 00:38:27]

Teacher: ... what have you got? Very good. [crosstalk 00:38:39] Good. Then you can start cleaning out the fertilizer bins. [crosstalk 00:38:51]

Student: Twelve ninety.

Teacher: Twelve ninety. Is that good or bad? [crosstalk 00:38:56] Now check the pH. Pick those up.

Student: Grab the little stubs.

Teacher: You guys got all your baskets? [crosstalk 00:39:03] grab your seeds? They should've been right inside the classroom. I brought them all.

Student: What if there is fertilizer left? [crosstalk 00:39:11]

Teacher: Just dump it.

Student: Okay.

Teacher: Yellow, very good. [crosstalk 00:39:18] Very good. Check the pH. [crosstalk 00:39:26] [inaudible 00:39:29]. [crosstalk 00:39:33]

Student: ... did they put fertilizer in here already?

Student: Yeah. [crosstalk 00:39:40]

Teacher: Empty those out and start washing. [crosstalk 00:39:46] You guys move a tub?

Student: Yeah. [inaudible 00:39:51] ants.

Teacher: Shoot it down with the hose. [crosstalk 00:39:54] It will be all right.

Student: Hey, at least they aren't fire ants.

[00:40:00]

Teacher: That's not too much. Just [crosstalk 00:40:01]

Student: ... dump this fertilizer out? [crosstalk 00:40:18]

Teacher: What you got?

Student: One oh one.

Teacher: One hundred and one?

Student: Yeah.

Teacher: One, zero, one? Only three numbers. [crosstalk 00:40:47] ... one thousand ten. One thousand ten. Is that good or bad for cucumbers? [crosstalk 00:41:02] Very good. [inaudible 00:41:11] fertilizer. Very good. Now check your pH. What did you get? [crosstalk 00:41:17] Twelve hundred for lettuce? Good or bad? [crosstalk 00:41:23] Very good. Now check your pH. [crosstalk 00:41:34] Shane, can you just, after they're done, just do a quick [crosstalk 00:41:51] over here? Tanner, I'm sorry. After they're done, do a quick shoot over here so they can [inaudible :42:00] ... and Tanner. [inaudible 00:42:00] Good, now check your pH. [inaudible 00:42:17] What is it? Eleven hundred even?

Student: Yeah.

Teacher: Very good. Check the pH. [inaudible 00:42:34] [crosstalk 00:42:38]

Student: Ten eighty.

Teacher: Ten eighty for lettuce. Good or bad? [crosstalk 00:42:47] Very good. Five thousand [inaudible 00:43:24]. Very good. [inaudible 00:43:29] All the way to the top. Now once you guys have all your baskets done with your [inaudible 00:43:41]. Very good. [inaudible 00:43:41]

Student: ... cucumbers and soy beans?

Teacher: Cucumbers and soy beans. [inaudible 00:43:47] Very good. Very good. Very good. I want you to actually calibrate [inaudible 00:44:00] . [inaudible 00:44:25] Team one, make sure you guys also plant your cucumbers. Make sure it's not [inaudible 00:45:27] that's all [crosstalk 00:46:00]. [inaudible 00:46:03]

Student: Ours. Yeah.

Teacher: Are you guys going to put them over there?

Student: Yeah. [inaudible 00:46:18]

Teacher: Everybody all watered [inaudible 00:46:30] all watered for the weekend.

Student: No water. [inaudible 00:47:08] They're mine, too. [inaudible 00:47:11] [crosstalk

00:47:27]

[00:48:00]

Teacher: ... one quick water on the top [crosstalk 00:47:29] [inaudible 00:47:42] You guys have twenty minutes [inaudible 00:48:41] clean up after [inaudible 00:48:44] your broom and sweep everything up after. Twenty minutes to finish. [inaudible 00:48:49] Make sure you guys double check your buckets. Make sure your water levels are still good on your hydroponic buckets and stuff. [inaudible 00:49:17] All right, I'm going to check

[00:50:00] [inaudible 00:49:18]. Keep on task. Good job. [crosstalk 00:49:24]

[00:52:00]

Student: You've got a mess to clean up bro. [crosstalk 00:51:32]

[00:54:00]

Student: Put your thumb over the hole. [inaudible 00:52:22]

Teacher: ... everybody, what you guys accomplished. Everybody had their own [crosstalk 00:58:06] today. Ten minutes. Bell rings in ten. Remember, recap for next week. I don't see you guys until Thursday, okay, so please make sure ... Hopefully everything got accomplished. Did we accomplish all our cucumbers?

Group: Yes.

Teacher: You're team one. Your cucumbers are all planted?

Group: Yeah.

Teacher: Team two. Cucumbers all planted? Soy beans? [crosstalk 00:58:42] Soy beans are planted, cucumbers are planted for team two? Yeah? Team one, soy beans? [crosstalk 00:58:50] fertilizers. All right, good. Then we cleaned out, we dumped it out, [crosstalk 00:58:55], all that's cleaned up? Perfect. [crosstalk 00:58:57] Write your exit passes, make sure they're on my desk. Make sure your areas are clean, no rubbish left on the tables. [crosstalk 00:59:15] Make sure your names are on these exit passes, too. Yeah. It doesn't help me if there's no name. [inaudible 00:59:33] [crosstalk 00:59:46] Exit passes. Everybody's doing that, everybody had a job today. [crosstalk 00:59:50] I have one

[01:00:00] meter here. Where's my other meter? [crosstalk 00:59:59]

Student: I seen [crosstalk 00:59:58] blue basket.

Teacher: Make sure by the end of this period I've got two meters in the drawer or else nobody's leaving if I don't have the two meters in there. [crosstalk 01:00:09] Exit [inaudible 01:00:10], exactly what you accomplished today because everybody had their own jobs [crosstalk 01:00:15] that everybody did something today.

Student: It's what we did individually?

Teacher: That's what you did individually. [crosstalk 01:00:32] [inaudible 01:00:43] [crosstalk
[01:02:00] 01:00:50]

Student: It tastes good. I really like it but ... [crosstalk 01:02:11]

Teacher: Everything's back from outside, everything's [crosstalk 01:03:15] [inaudible 01:03:28]
[01:04:00] [crosstalk 01:03:57]

Student: Yeah, I'm going to get a dollar dog. [crosstalk 01:04:10] Do you have four quarters?
[crosstalk 01:04:15]

Teacher: Good job. Make sure [inaudible 01:04:44]. Remember you have [inaudible 01:04:47]
brown bags today. [crosstalk 01:04:51] There is an assembly today so make sure you
guys are prepared for the assembly. [crosstalk 01:05:00] All right. Huh? [crosstalk
01:05:08]

Student: ... I seen her this morning [inaudible 01:05:13] [crosstalk 01:05:16]

Teacher: You guys have seven minutes. Good job guys, very good job today.