Two Storage Tanks

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District: Pittsburgh Public Schools
Grade: 8

Student: Well 900, well 900 is the head start on this one right here, and it subtracts by 50 and uh the third one- uh, is, uh.

Teacher: Okay, can I stay with this one and ask you about this one? You said that 900 is the head start. What does the 900 mean for the problem? What is that 900?

Student: It's- it's for the gallons of water.

Teacher: For which tank?

Student: The… water… loss

Teacher: Can you show me where it's at? The water loss, I can take that. So where is this 900 on that graph that you're talking about? Okay. Nicole the next thing he said was about the minus 50. Where, I don't see the minus 50.

Student: Cause it starts from 900, and then it subtracts 50 within like… it starts losing 50 every single time

Teacher: Okay, you say it starts losing 50 every single time. Can you be more specific about how *[Inaudible]*

Student: Every time the uh, water starts flowing into tank "W".

Teacher: So as the water's flowing in, this water's flowing out. And you're saying that's losing 50 as this water's flowing in?

Student: Yeah.

Teacher: What's that time she's talking about?

Student: Every hour.

Teacher: Every hour. Remember what we discussed yesterday? When things happen, there has to be a relationship. It's not just the one thing happening, it's happening at the same time something else is. So this is every hour.

Student: Every hour.

Teacher: Okay, so that's where that 50 comes from. Okay? Marshall can you relay back where that 50 comes from?

Student: It- it's the, um, hours.

Teacher: Fifty is the hours?

Student: Hold on. She, she meant like, every time- every time that it goes down it minus by 50 at each hour.

Teacher: Nice, very nice. Leon, there is another equation here. Do you wanna go through that one with us?

Student: For "W"

Teacher: Sure.

Student: Yeah.

Teacher: So, are we saying that this one's tank "T"?

Student: Yes, that's tank "T".

Teacher: Okay.

Student: And *[Inaudible]* it adds by 50, because you can tell, as it goes up, and on every hour it's like 350, the next hour it's 400, the next hour it's 450 then the next hour it's 500.

Teacher: I want you to find another way, for me, to prove that that's what's happening with "W", and I'm gonna come back. When I was here before, you were talking about increasing 50 gallons an hour. Are we still in that place, 50 gallons an hour?

Student: Uh-huh.

Teacher: Okay, prove to me why you're still in that place.

Student: Well first we start at 300, because if you look at the *x*-axis it's 0, and then the next, when you look at…

Teacher: Okay, I'm just point at it, so we can focus, go ahead.

Student: And then if you look right there, right there- that's 300 and that's open 1.

Teacher: Okay, can you keep going with that?

Student: The next, we add 50 more and it's 400.

Teacher: Is that 400?

Student: Oh. (laughter)

Teacher: Do you see where he's looking? Look at your first point on the Y-axis at (0, 300). Marshall, can you look there? Nicole, are you there? He said the next point after one hour was at 350. And then he went to the next one and he said the next one is 400. And I said to him, is that 400?

Student: Yeah, I think I know where he's going. I think I know where he's going-

Student: Why are we not at 25 instead of 50?

Student: Yeah.

Teacher: Is this at 400?

Student: Yeah.

Student: It went to 25.

Student: Oh, it went to 25 and then- it goes by 25.

Teacher: Now let me ask you something. You referred to this table here. What made this table go by 50?

Student: The way you put it in.

Teacher: The way you put it in. So what, tell me specifically, what made it- what about what you put in here, whoops, I'm sorry- made it go by 50.

Student: When you put 50 by the rate and put that on the X-axis.

Teacher: When you put 50 as the rate and you put the X after it.

Student: It was an accident.

Teacher: It's okay, there's nothing wrong. There's lots of good stuff there. Now, aren't you responsible, though, for looking at that and saying, wait a second, Leon, this doesn't go 50 each hour. It goes-

Student: 25

Teacher: Why? Why does it?

Student: Wait a second, Leon. It doesn't go 50, it goes 25…

Teacher: Why are you saying it's 25?

Student: I know that 300 and then it went up and then it went to 25 which was 325.

Teacher: Is that an easy one to read, though?

Student: No.

Teacher: Where is the next really easy one to read?

Student: At 2 hours.

Student: I think- I think it's kind of easier for me-

Teacher: At 2 hours.

Student: I think that one's kind of easier for me.

Teacher: What are you going to have to do right now, though?

Student: Change everything.

Teacher: Not everything, change-

Student: Change the equation.

Teacher: Change the equation. Change the 50 into 25. But I also want you to work with what you're talking about on your graph because I see some easy- uneasiness about the graph. How did you decide on these equations? Let's just pick this one. How did you decide on that equation? If you're looking at Leon because you know that was a conversation you two had- are you ready to answer that for me right now- by yourself? You can say no, cause I can come back.

Student: Alright. Can you come back?

Teacher: Can I come back? I can come back. But I need to be able to ask any of you that question, so I'm going to come back.

[End of Audio]