



Drake found a sale on bacon at the Winn-Dixie. They were selling 4 packs for \$10.

- How much would Drake pay for 6 packs?
- How much would he pay for 1 pack?

Transcript of class:

T: Let's go ahead and discuss this problem. If you had McManus last year, Nolsheim last year, Arb last year, or me last year, some of you actually had me, right Brittany, some of you had me last year. And so you know, right Jamison, how it goes in here. We like to debate and argue, Josh, in really positive ways. We like to share our thinking. And when somebody is sharing their thinking, what's your job? What do you think?

S: To listen.

T: Yeah, to listen. Why? Just to be respectful? Why should you listen?

Chris: It's respectful. And other people are listening too.

T: Yeah, it's respectful. And what's the...

Austin: You might like their ideas.

T: You might like their ideas. And then you should steal it right? Steal their ideas! Alright. So that's why I want you to listen. So, I'm gonna be asking you, when somebody's up here presenting, Alex, I want you to be listening, trying to understand their way. What if you didn't do it their way? Should you try to understand their way? Or just say, 'puhhhh!', who cares'?

Austin: Who cares?

T: They didn't do it my way, I don't need to listen, right? Naw! You need to listen because as Austin just said, you might like their way better, right?

S: Right.

T: So, you should steal it. So, I'm gonna be asking you guys questions. Let's say that Brittany is up here explaining, I'm gonna ask K to explain what Brittany just did. And if he can't he needs to ask a question, right? OK. So let's go ahead and get started. What did you guys get as an answer? Um...What'd you guys get?

S: I got 15.

T: 15. I'm assuming 15 dollars, right? Anyone get a different answer than \$15? Nobody. Everybody got \$15? Austin, you got something different?

Austin: No, I was gonna answer the second question.

T: OK, we'll get to that in a second or we may not get to that. Or we might even get to by answering the first one too. Alright, I would like Brittany to start. She was very brave. I asked her if she wouldn't mind explaining, being the first one up and she said, "I'd love to Dr. Stephan. That'd be great." So, she and Vanessa are gonna come up together because it's a little intimidating being the first up to explain. So, Brittany come on up and explain what you guys did. This is Brittany's way [T writes *Brittany's way* on the board].

Brittany: Oh, I have to write it too?

T: Well, what do you guys think? Should she write something on the board or should she just read it from her paper?

Alex: It's easier to read it from your paper other than write it.

T: It is easier when you're the speaker, right Hugo? To just speak it from your paper? What about if you're the person listening? What's easier for you if you're trying to learn?

Austin: It's easier to read it.

T: It's easier to read it Austin says. So, what do you think? What's your advice to her? Should she write something down for you to read?

S: Yeah!

T: What do you think Christian?

Christian: Yeah.

T: Yeah. Do you mind writing it...are you not gonna give her support [speaking to Vanessa]?!

Vanessa: She got the answer. I didn't.

T: OK. While she's writing, see if you can tell just from what she's writing, what she did.

T: Alright, just take a second to let it soak in before Brittany says anything. Just look at what she's written and Brittany can you stand a little bit more to the side so they can see over here? Study that for a second. [pause 5 seconds] Alright, I think we're ready. Can you explain what you did to everybody?

Brittany: Um I knew that 4 packs was \$10. So I did 4 divided by 10 and got 2.50 so one pack was 2.50. And then I knew I had to get 6 packs so I added the four and one was 2.50 plus 2.50 was \$5. And 10 plus 5 is 15.

T: Don't look at me! Did you get it? You got it?

S: Yes.

T: You got it? You liked it? Did you understand what she did, Christian? K? Did you understand it?

K: Yeah!

T: Could you re-explain it? [K indicates yes]. Hold your hand up if you've got a question. If you don't have a question...hang on...before she escapes, anybody got a question for her? That means if I call on around, you'll know, you'll be able to explain her way, right? Alright. I'm gonna call around. Vanessa, you're her partner, what'd she do, how'd she solve this one?

Vanessa: I don't know.

T: You don't know? Where was your hand? I just said, if you've got a question...oh no! You don't know. You don't have a question.

Vanessa: I know.

T: You what?

Vanessa: I can explain it.

T: Well go for it. Re-explain it. Start from right here. Tell people what she did again.

Vanessa: OK, well, she has 4 packs which equals \$10.

T: Christian! [loud whisper]

Vanessa: And she divided 4 and 10 and she got 2.50. And then she did 10 plus 2.50 plus 2.50 and that's \$15.

T: Alright, Christian, why did she add 10 plus 2.50 plus 2.50 ?

Christian: To get you to the 15.

T: How does that get you to the 15. I think we all know that if we did it in the calculator, 10 plus 2.50 plus 2.50 plus

Christian: It's four packs and she had to get to 6 packs. So she added 2.50 two times.

T: That's important. Thank you Christian. Do you understand what he, what she did? No other questions for Brittany? You OK? How about you? Alright, I see some people writing things down. You might want to jot down Brittany's solution if you didn't do it her way because it's pretty nice, isn't it? I saw some different ways and I think I wrote down that Alex had a really cool way. Alex, you and your partner want to come up? Please?

Josh: I don't know what he did.

T: You don't know what he did? Uh-oh! We're gonna have to work on our partnerships aren't we? We'll work on that this week. We all need to know what are partners are doing. So, Alex had a little bit different of a way, didn't you?

Alex: Yeah, but I didn't write anything down.

T: Maybe you could write something down right now. Maybe, sometimes it's hard to know what to write down, so maybe you guys can help him get his thoughts on the board somehow.

Alex: Do I have to write it down or can I just say it?

T: What do you guys think? What would be best for you guys?

Ss: Write it.

T: Should we give it a try? It's best for them if you could write something down, but maybe what he, try this Alex. Since he's struggling to write it down, maybe you could just say it out loud and then somebody could help you know what to write. See if you could plug into it with just what he's saying.

Alex: Because it says he has 4 packs, if you add two more to that, you're just adding \$5 because half of 4 is 2 and half of \$10 is 5. So, basically 2 packs is 5. [inaudible] If you divided 2 by 5 you get \$2.50.

T: How did it work for you? How did that work for you? Did you, were you able to follow him?

Keyanna: Sort of. It was fast.

T: Going a little fast. Say it a little louder and a little slower. You don't need to explain this part if you don't need to. Just explain this part. Alright, give it a shot again. Listen guys.

Alex: For four, for \$10 you're getting 4 packs. And if you want 6 packets you're only adding half of what you paid for the four packets which would be \$5. So adding 5 to 10 you're getting \$15. And for the 1 packet you can divide 15 and 10 and get \$2.50.

T: Did you follow it this time? Help us write something down. What would we write down? What are some key things we could write down? What are some key calculations? Somebody? Brittany?

Brittany: He divided both by two.

T: Divided both by 2. Is that what you were gonna say? Alright. So four packs...this might be helpful, to learn what to write down, 4 packs was equal to \$10. And you said [pointing to Brittany] it's important to know, right Austin, that you divided both in half. Why is that important to know? I don't know your name. What's your name? Angelica. Why is that important to know? Why is that a key step for him?

Angelica: It's good to know the first thing he did?

T: Alright. That's important, right? What else you guys? If this is such a key step, what's so key about it? Austin?

Austin: It's because if you add 2 packs to 4 packs you get 6.

T: Is that right?

Alex: Yes.

Austin: So, if he found out how much 2 packs was worth, he'd be able to add it to get 10 to find out how much he'd have to pay for 6.

T: Repeat what he just, what Austin just said. What's your name?

Christina: That like 15, like if you add the four and the two it would equal 6. [inaudible] And then like 15 or 6 packs is \$15.

T: Alright, did you catch it? Are you alright with it? Josh, you good? Thanks Alex. Now, Alex said he didn't quite do it this way, but maybe similar? So, together we came up with a good way to write down a little bit what was in Alex's head. Austin?

Austin: It's kind of like timesing two each time. It's a pattern.

T: What's the pattern?

Austin: Times two.

T: What's times two each time? The packs are like times two. Or like...cause 1 pack is like 2.5. The second is 5. The fourth is 10. Then the 6 would be 15. It's going, the uh money is going up by 5 and the packs is going up by 2.

T: Are you catching that? He says that 2 packs was \$5. He's noticing a pattern. Do you see his pattern?

Austin: Except for 1 between 2. It's not going up by twos, it's going up by ones.

T: Yeah, so 6 packs...what's.

S: 15.

T: Yeah. Thank you. So if you were to predict 8 packs...

Austin: If you were doing like 3 and 5 in between, it'd only be going up by 2.50.

T: Alright, so if you were only going *one* at a time, it would be doing up by 2.50 each time, but if you're going up 2 every time, it's doing up by \$5 each time. You buy that Hugo?

Hugo: Yes.

T: Hey, that's the kind, that's exactly the kind of thinking I'm asking you to do in here. Is that kind of out of the box thinking. Seeing patterns when they exist.

Keyanna: That's hard.

T: What's that?

Keyanna: It's hard.

T: It is, isn't it?

Keyanna: For me.

T: But we're gonna do that so much this year, what's your name [Keyanna], Keyanna. We're gonna do that so much this year, Keyanna, that it's gonna get easier and easier. Because you're gonna have to be able to do something like that on FCAT, in real life. You're gonna have to be doing some of this thinking. So, I'm glad you said that Keyanna, because this is important. It's important to get that out there. And be okay with saying, "this is hard!" But you're gonna bet better. Alright, I'll tell you what. Did anybody have a different... Jamison, show your way. And be happy about it. Let's see, I think we have some room over here. He had a cool way of writing it up and doing the calculations so see what you think about this. And this, if you like this way, write it down. Because you had a hard time, didn't you?

Let us all look at that for about 30 seconds. Christian I want you to look at it. Maria, I want you to look at it and see if you can figure out what he is doing. Let's give Jamison a chance to explain and then we'll have him field your questions. Go ahead Jamison.

Jamison: OK, so when I first looked at the problem it said that 4 packs was \$10. So, 4 and 10. And then I tried to get to 1. I divided 4 by 4 to get 1 and 10 by 4 to 2.50. Then I did 1 times 6 to get 6 and then 2.50 times 6 to get to 15.

T: Alright, Rebecca. Any questions for him? Could you re-explain it? Want to give it a shot? Try to explain it. [Rebecca: What?] Try to re-explain what he did. Jamison, make sure she's got you right here.

Rebecca: He did 4 divided by 4 and that's 1. And he did 10 divided by 4 and that's 2.50. And 2.50 is how much you have. And then he did 2.50 times 6 and that's \$15 for 6 packs.

T: Alright, um, Josh, what do these numbers on the top stand for in the problem, for Jamison? What are they standing for?

Brittany: Oh wait.

T: You got a question?

Brittany: No, I thought you were talking about denominator and numerator.

T: Oh yea, they are numerator and denominator, but I'm talking about the bacon packs and the money. What are those top numbers? Maria, do you know? Josh, what do those top numbers stand for? These right here?

Josh: How much comes in a pack?

T: How much comes in a pack? Can you be more specific? Like what does that 4 mean?

Josh: The number of packs.

T: How many packs. Maria, what were you gonna say?

Maria: Wouldn't it be like finding the unit rate?

T: Woo! Did you hear that? What do you think? That was kind of directed at you? What did she just ask? What did Maria just ask?

Brittany: The unit rate.

T: What did she just ask? Oh no! Y'all listen. Maria ask again real loud.

Maria: Wouldn't that be finding the unit rate?

T: What in the world is unit rate?

Austin: Oh, I know what that is!

S: It's like the simplest part of the problem.

T: Yeah, like the simplest rate you can find? What is that simplest rate when it's called a unit rate?

Austin: It's a rate with a 1 in it.

T: It's a rate with a 1 in it, right? Awesome! Awesome! Is that what you did? Try to get, so he got to the unit rate. So, Maria, what's that 1 stand for in our problem? And then, what's this 2.50 stand for? What's this mean? You said the unit rate so I was gonna see if you knew what it meant. Want a buddy to help? Call on your buddy.

S: That one pack costs 2.50.

T: That one pack costs 2.50. There it is. And then you use that unit rate, Jamison, to find out how much 6 packs cost. What do you think about Jamison's way?

Chris: It's good.

T: It's pretty good!

Keyanna: It's complicated.

T: It's a little complicated but it's not confusing now is it? You started off, Keyanna, by saying it was confusing, but now it's just complicated. But you understand it, or no?

Keyanna: Not really.

T: Oh, what part don't you get?

Keyanna: The whole thing.

T: Oh no. The whole thing. Let's start here. Do you understand that part?

Keyanna: Uh, 4 over 10. That four, that four packs cost \$10.

T: She doesn't understand the whole thing, huh? You understand it, that part! What's this part all about Keyanna? See if she can get it. I bet she can, don't you? What's that next part all about?

Keyanna: Does it say 250? [T: No. Austin: That's 2 point 50]. Oh. That one pack costs \$2.50.

T: Hmm...she surely doesn't get this problem does she?

Keyanna: Well...

T: And then what? What's this stand for?

Keyanna: That's one pack and it costs \$2.50.

T: Uh-huh. What's this stand for?

Keyanna: 6 packs and \$15?

T: Uh-huh and how do you get there?

Keyanna: By multiplying.

T: By multiplying both by six. She doesn't get the whole problem, does she? Y'all crack me up. Y'all always say that. I don't get it and I say what and you say the whole thing. And listen to what she did. She just almost re-explained the whole problem.

OK, here's what we need to do. One thing I want to say is y'all did great on this first try. This was our first try at explaining to each other. Applaud Brittany! Great job. First person up there. That's fantastic. So thank you for that. And Alex for coming up. And who else came up? Jamison. I appreciate you coming up too. I also appreciate you guys be able to or trying to re-explain. What I didn't see today was hands with questions. And I know there was some confusion out there but you guys didn't raise your hand. So, in the future, maybe it wasn't you, but in the future I want you to raise your hand when you have a question. It's ok to ask questions in this class, alright? Rebecca, are you ok with that? So, thank you for a really good discussion. A great one for the first day! We're gonna continue on like this for the rest of the school year. And you watch, as we go through K, as we go more and more time, you guys are gonna get really close to each other and you're gonna start arguing and become a real team.

S: That's not good to argue.

T: Arguing in a positive way. Debating. But not arguing like in a mean way.