Transcript for November 27 - 29, 2007

"Some Management Issues: Homework and Vocabulary"

The class is working on Investigations 1 and 2, *Moving Straight Ahead*.

The video has been cleaned to make viewing and hearing easier, but is unedited otherwise.

Some Management Issues: Homework and Vocabulary
Class:  7th Grade, 20 students when everyone is present.
Date:  November 27 – 29, 2007
Edited to 34 minutes.

Note: there are 4 extra video personnel in the classroom.

**Chapter 1: Introduction**
**Time: Approximately 00:00:00 – 00:00:20   (Times from start of video)**

**Title Slide:**
Some Management Issues: Homework and Vocabulary

**Slide 1:**
Using Homework as a Learning Tool.

The following unedited video clips show two examples of the class taking
8 – 9 minutes to discuss homework before turning it in to be graded.

**Chapter 2: Questions on ACE p. 14, *Moving Straight Ahead.***
**Time approximately:   00:00:20 – 00:08:00 (Times from start of video)**

**Slide 2:**
ACE #6 page 14, *Moving Straight Ahead.*

Line 1, 00:00:30          T:   6C and D is where I had questions first.
                         And the first question was about what do the
                         points where the  line crosses the Y axis mean
                         for each sponsor.   So to help us out I think we
                         need to know  what we're talking about with the
                         Y axis.

                         Tyler:   For C I put the starting dollar for when
                         what

                         T:   But what is the Y axis?    Kind of help
Line 10, 00:00:47        people know what you're talking about.

                         Tyler:   Distance?

                         T:   So is the Y axis where we were talking
                         about the distance that they were walking?

                         Student:   No.

                         T:   Is it the money?

                         Students, off-camera:   Yes.

                         T:   Which one is the Y axis?

                         Melanie:   The one going up.

                         T:   So we're looking at the vertical one.
Line 20, 00:01:08        It's on page 14, if you're trying to remember
                         what  the heck are we talking about.    This are
                         those -  these are those three sponsors, Sponsor
                         A, Sponsor B, and Sponsor C,  and their pledge
                         plans for the walk-a-thon.   So you're looking
                         at where that line,  each one of their lines,
                         hits the Y axis.   What does it tell you about
                         their pledge plan?    And so Tyler, you were
                         saying what about it?

                         Tyler:   I said just starting dollar,  because
Line 30, 00:01:33        when it started it was just zero.   When it was
                         zero, like for Sponsor A, it was zero dollars,
                         Sponsor B five dollars,  and Sponsor C two
                         dollars.

                         T:   So that starting makes me think of like
                         Alana  with that five dollar donation type
                         thing.   That's what you're talking about?

                         Tyler:   Yup.

                         T:   Anybody have another thought on 6C?

                         Student:   [Unintelligible]

Line 40, 00:02:04        T:   Well, that's how Tyler was describing it,
                         or like Alana described it as a donation to
                         begin with.

Bryce:  Is it talking about the first one?

T:  It's talking about for each sponsor,  what that point when it hits the Y axis is telling you.

Bryce:  I put that it's telling you how much, how much money it is for that time or how long it'd take to get that much.

Line 50, 00:02:27    Melanie:  Yeah, that's what I put.

T:  So say all, both of what you just said.    I didn't hear the second part.

Bryce:  That it tells how much money for that amount  of time or how long it took to get that much money.

Student:  That's what I wrote down.

T:  So where do you get time?    That's what I'm struggling with.

Bryce:  Er - distance -

Line 60, 00:02:46    Student:  Yeah, hours.
Travis:  So, like if walked  five, um, five kilometers,  that's how much he'll get at that time.

T:  So when it hits the Y axis,  how far has he walked?

Student:  He walked one..

T:  Has he walked one kilometer when you're hitting the Y axis.
Student:  Yes.

Line 70, 00:03:06    Students, off-camera:  No.

T:  So how far would you say they've  walked when they're hitting the Y axis?

Student:  Zero.

T:  Is it zero when they're hitting the Y axis?

Students, off-camera:  Yeah.  Yeah.

T:  So now if I think about that and what  Bryce said, how can I combine it?

T: Ricky.

Line 80, 00:03:26    Ricky:  It's how much  money you have when, when you haven't walked any kilometers.

T:  Is that what each point tells us?

Ricky:  Yeah.

T: So if I am Sponsor C, how much money when someone hasn't walked any kilometers?

Student: Five dollars?
Student: Two.

T: Sponsor C?

Student: It's two.
Line 90, 00:03:46          Student: Oh, yeah.

T: Two dollars. What about Sponsor B if they haven't walked any kilometers?

Students, off-camera: Five.

T: And what about Sponsor A?

Students, off-camera: Zero.
T: Zero. So it is in a way like Tyler said, it's start up, or when we've walked zero, how much money we have.

Line 100, 00:04:04          Becca: So for Sponsor B, did they like give you two dollars to start out with and then they were adding on like, kind of like the one problem we had where -

T: Sponsor B?
Becca: Yeah. Where they would give the money and then they would pay you for all the kilometers you walked further.

T: Are you talking about Sponsor C, maybe?

Becca: Yeah, that one.

T: So you said is Sponsor C like --

Line 110, 00:04:26          Becca: Ummm, let me find the problem. Like the one where they would just give you the money to start out with and then they would pay you even more if you - the kilometer -

T: You mean like Alana?

Becca: Yeah.
T: Where Alana had a five dollar donation plus fifty cents a kilometer. Is that what Sponsor C is doing?

Student: Yeah, it's two dollars for, just in
Line 120, 00:04:47          advance, and then a dollar, a dollar fifty cents for every kilometer.

Student: She gets two dollars or -

T: We're back in Problem 1.3.

Student: It looked like a dollar fifty.

Student: That's what I thought.

T: She's talking about Problem 1.3.

Student:  Oh, yeah.

T:  You guys are talking about a different one. Yes, it's the same idea,  the same idea.  And then the other question was on D, or are there still questions on C?

Student:  D.

T:  D.  Um, write the coordinates of two points on each line.  What information does each point represent for the sponsor's pledge plan?  Well, if I chose Sponsor A,  could you give me a coordinate on Sponsor A.  Coordinate pair on Sponsor A.  Ricky.

Ricky:  Um, 1X and 3Y and then 2X and 6Y.

T:  I've got to write it down.  What did you say again?

Ricky:  Um, 1X and 3Y and then 2X and 6Y.

T:  And then what do those points tell you about Sponsor A?

Ricky:  Well, like, I don't know what they can tell you,  but like how, the distance they're walking,  I guess.

T:  How does this one tell me the distance walked?

Ricky:  Well, like between them, like if they're both double .

T:  Tell me more, 'cause you've confused me. Tell me more.

Ricky:  It's hard to explain.

T:  If I just look at this point,  what's it telling me?

Ricky:  Um, oh,  you get three dollars for one kilometer.

T:  Is that what that point tells?

Student:  Yeah.

T:  What's the other point that Ricky said tell you?

Bryce:  It tells you that you get  six dollars for going two kilometers.

T:  Is that what it says -  six dollars for two kilometers?    Melanie.

Melanie:  I thought you only had to do like, um,  for a sponsor you only had to do like Y times the next three,  just two points on the X

Line 170, 00:06:42       and then on the Y.   One point on the Y and the X, and then you got -

T:  D - for letter D you have to pick two points on each line and then tell what they mean.

Melanie:  Oh.

T:  Two points on each line.   Does that answer your question on D?   And C.  Other questions on homework?   Melanie.

Melanie:  5A.

Line 180, 00:07:10       T:  5A.

Melanie:  Like I know the answer but it doesn't say what unit, so I just put units per hour.

T:  Oh, I see.  That's fine.
Student:  I put something per hour.

T:  I would assume -  but it's been since last week since you did number 3 with  Jose, Mario and Melanie.   I would have assumed it was miles per hour  because she's riding bikes with
Line 190, 00:07:31       them, but you're right.   The problem itself doesn't say  whether it's miles per hour or kilometers per hour.  Good point.  Yes.

Ricky:  Um, I was kind of confused on 5B.

T:  5B.

Ricky:  It was just like, I don't know-

Student:  If you put them all in the same graph.

Ricky:  So what were we supposed to say?   Like if she had helped last year it'd be
Line 200, 00:07:52       compared to the other ones?

T:  Yes.
Ricky:  Alright.  That's what I did.


T: Make sure you staple your graph on so you don't forget to turn it in,  and your name is on it.   Turn them in.

**Chapter 3: Questions on ACE page 32, *Moving Straight Ahead*.**
**Time approximately:  00:08:01 – 17:43 (Times from start of video)**

**Slide 3**
ACE #2, 3 page 32, *Moving Straight Ahead.*

Ricky sees a similarity between this homework and the homework from 2
days before.


Line 1, 00:08:11          T:  I'm hearing there are questions on the
                          homework.

                          Class:  Yes.  Yeah.  2.A.  2.B, 3.B

                          T:  Instead of using the exact question that's
                          there,  instead of being Gilberto, um,  let's
                          just do a different person.  What if they had -
                          um, Sally joined the race,  and they were going
                          to give Sally a 10-meters head start  and Sally
                          walks at 1.75 meters per second.  And it
Line 10, 00:09:00         says to write an equation for Sally.  So what'd
                          I say - 10-meter head start?  And Sally's
                          walking rate is 1.75 meters per second.

                          Student, off-camera:  What one is this?

                          T:  This is for 2.A but I made up a different
                          person with different numbers.  So it says
                          write an equation.  If I want to write an
                          equation, what am I thinking about?  Bryce.

                          Bryce:  What variables are we looking for?

                          T:  Yeah.  What variables are we going to be
Line 20, 00:09:29         looking at?

                          Bryce:  Um, time and distance.

                          T:  Are we going to look at time and distance?

                          Bryce:  Yes.

                          T:  So how are the time and distance related to
                          each other in Sally's case?  How is the, how
                          is one variable going to change as the other one
                          does?

                          Student, off-camera:  The distance will get
                          longer as the time goes.

Line 30, 00:09:50         T:  We're going to get more distance as the time
                          goes on.  So how does that happen for Sally?

                          Tyler:  Um,  I had it great in my head but I
                          forgot.

                          T:  What were you thinking?

                          Tyler:  Um,  I don't know.

                          T:  Travis.

Line 40, 00:10:14

Travis:  The distance changes for Sally by one, 1.75 meters per second,  so each second it'll go that much farther.

T:  So every time a second goes by she goes 1.75 more meters.
Travis:  Yup.

T:  Ok.  So how could I put that into an equation now,  with her head start of 10. Kristen.

Kristen:  1.75 times X,  which would be, um, the number of seconds,  and then you'd add 10 for the head start.

Line 50, 00:10:41

T:  And that would equal her distance?

Kristen:  Yup.

T:  I'll just call it D for distance.   Is that true?   Does that still say what we were talking about,  that her distance is going to increase,  is going to increase by 1.75 meters every second,  and has that head start of 10? So for #2 you want to look at Gilberto and what he's doing.   Does he have a head start,  how is he moving every second,  and write an

Line 60, 00:11:10

equation for Gilberto.    Other questions on the homework?

Ricky:  Um, 3.D.

T:  3.D.

Student, off-camera:  Did he say D or B?

T:  D, I think.

Ricky:  You asked the same ques-  this is like the same thing as like, last week, or whatever.

T:  So tell us why it's the same thing.

Line 70, 00:11:38

Ricky:  Because it just tells you at zero how, um, much, wait,  how, yeah, how far they went at zero.

T:  So if we're hitting it at the Y axis -

Student, of-camera:  Oh.

T:  Is it going to tell you how far they are at zero?

Student, off-camera:  Yup.

T:  It is the same question we had the other day.   You're right.  Yeah.

Line 80, 00:11:59

Ricky:  So, on 2, er, 3.F,  I was confused 'cause wouldn't they walk together?

Student, off-camera:  Yeah, that's what I thought.
Ricky:  Once they got -

Student, off-camera:  That's yea that's what I said.
Ricky:  I didn't know which one to put, but I put

Student, off-camera:  Once they meet don't they want to like,  start walking together, or does want to,  like, run away from the other?

Line 100, 00:12:11      T:  Maybe they really don't like each other, you're right.

Student, off-camera:  Then why would they want to
Student, off-camera: Then why would they catch up to each other.

T:  You know, that's a really good question.
Student, off-camera:  You know, that's what I was thinking.

Line 120, 00:12:19      Student, off-camera:  If I'm going to catch up with somebody -

T:  What would it look like after the two girls meet each other?

Jayna:  It would cross, but -

Student, off-camera:  I think it would look the same.

Student, off-camera:  I think they want to stay the same if they want to keep talking to each other.

Student, off-camera:  'Cause they're friends.

Line 130, 00:12:33      Travis:  But if you're friends, you don't want to, oh hi, oh bye.

Student, off-camera:  Hey, how's it going?  Bye.

T:  They're just going to see each other and then  Tara's going to keep walking at her rate and Ingrid's going to walk at her -

Student, off-camera:  And Ingrid's going -
T:  Rate and they'll never see each other again.

Line 140, 00:12:45      Student, off-camera: -10 minutes later and she's going to be standing there.

T:  You know, I would agree with you if you wanted to  say that they were going to continue then to  walk at the same pace and how the graph would look after that.  I would agree that they might like each other  and they want to continue walking together,  or if you said that Ingrid

Line 150, 00:13:00

and Tara are just going to  go "Hi" and then keep walking at their own rate,  I would agree with that, too.    You're right.

Student: 3.D.

T:  3.D.   Ricky was saying we had that question the other day.   If it's hitting the Y axis, he says that means that you, that you haven't had any time yet,  and so it's telling what distance you've gone  in zero amount of time. If it's - it's where you're hitting the Y axis. So if I was thinking of Sally,  where would this graph hit the Y axis for Sally?

Line 160, 00:13:30

Student, off-camera:  Ten.

T:  At ten.  It would be like Sally's head start -

Student, off-camera:  So -
T:  Before a time has started.

Student, off-camera:  I'm so confused.

Student, off-camera:  Me, too.

Student, off-camera:  I'm still confused.
Becca:  Okay.   It, where it, see how,  like, there's, hold on -  I need to go look the

Line 170, 00:13:47

question -

Student, off-camera:  What page is it on?

Student, off-camera:  31.

Student, off-camera:  32.

Becca:  Okay.   Do you see how Tara's doesn't start at zero?

Jayna:  What information    finds out something give another problem

Becca:  Um, for D?

Jayna:  Yeah.

Line 180, 00:14:12

Becca:  Graph the distance on X,  so you find out where the Y intercept _____

Jayna:  So D's talking about where they start?

Travis:  Exactly.

T:  D talking about where they start.

Bryce:  I thought it was when they crossed a Y axis line that,  that means he's growing.

T:  Well, if I had these two  and I'm looking at where do they cross the Y axis,  this one's crossing here and this one's crossing here.

Line 190, 00:14:47        So what does it tell me about their walking?
                          Bryce.

                          Bryce: So, as they cross the first one,   wait a
                          minute.   Aren't the other lines Y axis lines
                          too?

                          T:  Oh, I see, because they all have an X and a
                          Y.
                          Bryce:  Um hmmm.

                          T:  In their coordinates.  Good point.   But
                          it's looking at where it crosses this,  which
Line 200, 00:15:07        is called your Y axis,  and this is your X axis
                          down here.

                          Bryce:  I know, but like -

                          T:  It wants to know where does it cross this
                          line here,  the Y axis.   What does it mean.
                          Bryce:  But aren't the other ones Y axis lines,
                          too?

                          T:  What other lines?

                          Bryce:  Like on the grid, like on the grid,
                          like the line that people are walking at.

Line 210, 00:15:28        T:  Like all of these lines?

                          Bryce:  Aren't those Y axis lines, too?

                          T:  They're lines that have a Y value,  but the,
                          when you make your graphs,  these are your axes
                          to set up your graph.   You've got an X axis and
                          a Y axis  to set up your graph.   It wants to
                          know when does it cross this thing,  the Y axis.
                          But you're right.   There are Y values on each
                          one of these,  but this is where -  called the
                          Y axis when you set up your
Line 220, 00:16:04        graph.    It's like the -
                          Bryce:  It tells where they start?

                          T:  It does tell where they start.   When it
                          hits the Y axis,  it's where they're starting
                          from.     So if I had Ricky,  and I'm going to
                          give him a 35-meter head start -

                          Student, off-camera:  That's too much.

                          T:  And Ricky's going to walk at 1 meter per
                          second,  where's he going to hit the Y axis?

                          Student, off-camera:  Thirty-five?

Line 230, 00:16:30        T:  At 35.    And then he's going to move at 1
                          meter per second,   and Bryce is right.   Each
                          one of these points here has a certain  amount
                          of time and a certain amount of distance.   So
                          they do have an X and Y value,  but this is
                          called the Y axis,  where he's starting from.
                          Other questions.    Melanie.

                          Melanie:  Okay.  Um,   I couldn't find Gilberto.

Line 240, 00:17:13

T:  Gilberto is the,  what they give you at the very first part of question 2.   He has a head start of 20 meters and he walks at  2 meters per second.    And then you're going to look at how would he compare  to Henri and Emile that we've been looking at  for a couple of days, with his head start -

Melanie:  Oh.
T:  And his walking rate.

Melanie:  Okay.

T:  Revise anything you want to on your Ace, make sure your name's on it, and turn it in.

**Chapter 4: Organizing Vocabulary Lists**
**Time approximately:  00:17:44 – 27:18 (Times from start of video)**

**Slide 4**
**Organizing Vocabulary Lists**

(see also Exponential Decay DVD, Growing, Growing 4.1, Chapter 9, for another example of students creating a definition.)


Line 1, 00:17:53          T: So we've got all these ideas kind of spinning around,  and when you were doing this on your Ace last night,  some of you were finding some difficulties with vocabulary.  So maybe today we can clear up the vocabulary  a little more before  we head into the next problem.

                          T:  Um, I think we're struggling a little bit around the equations,  and it might be just
Line 10, 00:18:23         because we don't  have a common language about how to work with these equations.   If I think about what they've looked like so far,  we had, um,  the little guy's,  and we had his big brother - oops,  I forgot his head start, didn't I?   And we've had equations with the pledge plans and we had equations with our walking rates,  equations with Lee and Gilberto and Alana's walking rates,  and they've all seemed to look like this.   And we kind of
Line 20, 00:19:00         described it the other day in our vocab.   How did we put it in our vocab the other day?   What were we saying about the equation vocab the other day?   Becca.

                          Becca:  The rates get multiplied by a variable and sometimes another number is added or something.

                          T:  And that's how we were describing this.   We had their rates multiplied by one of the variables,  and sometimes we had that starting
Line 30, 00:19:23         point added in.   So if I kind of generalize that,  they've all kind of looked like that, where we have some sort of a rate multiplied by the variable  and sometimes we've had that start-up,  or we could even say here he had no start-up or his start-up was zero.   So they've all kind of have this form of an mx + b.   And I want to give some fancy terminology for this rate,  this constant rate that always appears in our equation,  and this head start, or this
Line 40, 00:20:03         start-up.   And this rate we can call the coefficient,  and the start-up or this head start we can call the  Y intercept.   So let's put those in vocab.    How can we define the coefficient so that we'll remember it?

                          Student, off-camera:  Is this still in Moving Straight Ahead, linear?

Line 50, 00:20:49

T:  Um, I would put it separate.   Underneath where you have equation,  I would like skip a line or two in your vocab   and put coefficient.     If that little m in front of the x is the coefficient,  how do you want to define coefficient?    Kristen.

Kristen:  Um, the, the number being, being multiplied by the rate.

T:  Would that make sense?

Jayna:  What?

T:  Jayna said "What?"

Line 60, 00:21:20

Kristen:  Like,   the number that is being multiplied  or the rate that is being multiplied, like um -

T: Let me write that down and then we can change it if we need to.   She said it's the rate multiplied -  and then she said like the 2.5 here -  so maybe putting in an example.    Is that enough, or do we need more?    Travis has a confused look.

Travis:  Well, I don't..
T:  Would you fix it?

Travis:  No.

Line 70, 00:22:11

T:  It's okay?
Travis:  Yeah.

T:  And then how about Y intercept?     Is it where the graph starts?

Student, off-camera:  Yeah.

T:  Should we put where the graph starts?

Melanie:  Isn't that when the rate starts, starts on the Y axis?

Line 80, 00:22:50

T:  Is it where it starts on the Y axis. Bryce says is that that letter D we did in homework last night.

Travis:  It's the, it's like the,  where the beginning of that, um, plot starts on the Y axis.

Line 90, 00:23:38

T:  So if I have a graph,   tell me how -  I'm trying to write down what you guys said.   On a graph, it's kind of like where it starts,   or you could say when it hits the Y axis.    Is that what you're saying?   And that is that question that was on letter D in #3 of homework last night.    When it hits the Y axis, what is it talking about?   Well it is where our data has been starting, but we can also call it the Y intercept.

Bryce:  What about, um, like, a negative number?

T:  Tell me what you mean.

Bryce:  Like, like we always,  we're talking about the Y intercept is like the zero,  well, like zero this way or that way.    Well, what
Line 100, 00:24:04        if it was like a negative number?    Where's the Y intercept?   Is it the same line, or is it like -

T:  So you're saying if I had a four-quadrant graph,  where is the Y intercept?   The Y intercept is going to be wherever it's hitting this line.   It's talking about when X equals zero.   So I think you're right.

Bryce:  But that's not where it started, though.
Line 110, 00:24:28        T:  We need to clear this up a little bit.   It might not actually start at that point, you're right.   And that's why I kind of put it in quotes,  because I agree with Bryce.   So far everything we've done has all  been positive numbers and positive situations,  and we've always had our data start when X is zero.   But you're right.   We could have information starting before that zero point.    So I think you're right.  We do need to clean this up.
Line 120, 000:24:58       You could also say it means   when the X equals zero,  because we are going to start to see situations where our data -  the information we have is going to start before that zero.     But the Y intercept is always going to be when  the X equals zero.    That's where a Y intercept is on a graph.   Where would the Y intercept be these in equations?    Where is the Y intercept if I'm looking at the equation?

Tyler:  X, at zero X.

Line 130, 00:25:32        T:  So whenever X is zero,  I'm going to be at my Y intercept.   I would agree.    If I look at this equation,  what's the Y intercept?

Ricky:  Forty-five.
T:  Is it 45?   And what's the Y intercept of that equation?  Melanie.

Melanie:  Zero?

T:  Is it zero?

Melanie:  Yeah.

Jayna:  You have to put the plus and then any
Line 140, 00:25:54        number that's going to be the Y intercept

Becca:  So won't it be like the number that's added?

T:  So an equation -  could I say it's the number added?   Is that what you want to say?

Student, off-camera:  Would it still be that when you subtract it?

T:  What if we subtract it?

Student, off-camera:  Yeah.

Line 150, 00:26:20          Student, off-camera:  Could you move it back a little.

T:  Sure.

Student, off-camera:  Thank you.

T:  What if I subtract it?  What would that be saying?

Student, off-camera:  It would go -

Travis:  It would go below.

Jayna:  Subtract the -

Melanie:  It would go down into the negatives on the graph.

Line 160, 00:26:38          Jayna:  Yeah.  It'd go into the negatives when you're minusing 10, so then you'd have

Melanie:  So it would go -

Jayna:  It'd go negative 10 -

T:  It'd be down here, negative 10 -

Jayna:  Yeah.

T:  And then what would it do?

Student, off-camera:  It would just keep going up by 2.

T:  Going up by 2.

Line 170, 00:26:52          Student, off-camera:  Yup.  And then it'd finally get to positive.

T:  And finally get positive.  This vocabulary might take us a while to get comfortable with, but I also think it might help clear up some of the confusion  we had on the homework last night.  It'll give us some common language to work with.  In today's problem,  it's going to use that vocabulary, and so that will help.

**Chapter 5: Students Using New Vocabulary**
**Time approximately:  00:27:19 – 00:30:52 (Times from start of video)**

**Slide:5**
Tyler and Emmett use their new vocabulary, coefficient and y-intercept, in Problem 2.3.


Line 1, 00:27:29          Emmett:  I don't know.  Maybe its 50?

                         T:  Is it 50?

                         Tyler:  $50?

                         T:  Is it $50 for shirts at the Mighty T-Shirts?

                         Tyler:  No, it's one dollar.

                         Emmett:  It's $1 per shirt but then what's the 49 for?

                         Tyler:  Forty-nine is like a nonrefundable $49.
Line 10, 00:27:48        If you just say, okay,  $49 to the company,
                         'cause like when, for the japanese field trip
                         we have to pay a nonrefundable $100 so they know
                         we are gonna be on it.

                         T:  So some sort of a deposit.

                         Tyler:  Yeah.

                         T:  Okay.

                         Tyler:  The deposit and the one dollar's  for
                         the t-shirt when you buy a t-shirt.

                         T:  So if the 49 is some sort of a deposit,
Line 20, 00:28:16        and the dollar is the amount per shirt,  if I
                         put that in our new vocabulary,  which of those
                         is going to talk to me about the Y intercept
                         and which is going to talk to me about
                         coefficient?

                         Tyler:  Well, the Y intercept would be $49
                         because you're starting at zero dollars  and you
                         already have    and for -

                         T:  Oh, for zero shirts, they paid $49.   Okay,
                         gotcha.

Line 30, 00:28:40        Tyler:  And for the, um,   the coefficient you'd
                         put the N  because you're also adding $1 to the
                         49.

                         T:  Is that right?

                         Emmett:  I don't know.  I'm confused.

                         T:  So, we're trying to decide, Sean,  if the 49
                         is the Y intercept or not,  and then what is the
                         coefficient in the first one.   And we were

Line 40, 00:29:24   saying the deposit is $49, and then you're paying a dollar per shirt.  So, you said if it's zero shirts you're paying $49.  That feels like a start-up to me.  That's how much you're starting with.  So that would be the Y intercept.

Emmett:  Okay,  'cause you're starting on the Y axis at 49.

T:  $49, and then what happens.

Emmett:  Then plus the number of t-shirts.

Line 50, 00:29:49   T:  Okay.  So my coefficient is the rate that I multiplied by my variable - what would the coefficient be?

Emmett:  Would that be the cost, the cost of each shirt?

T:  Um hmmm.  So now if I go to No-Shrink, what's their Y intercept?

Tyler:  Their Y intercept is zero because you pay when you're at zero you pay for your dollar, and the Y intercept would be 4.5 because it's 4.5 dollars for each t-shirt.

Line 60, 00:30:14   T:  You just said the same thing - Y intercept for both.

Emmett:  You said Y intercept is zero and then Y intercept is 4.5.

Tyler:  I mean the co - the coefficient.

T:  Is that right?

Emmett:  Um, wouldn't it be the cost times the shirt?

T:  And what is the cost for the shirts this time?

Emmett:  $4.50.

Line 70, 00:30:39   T:  $4.50?  So is our coefficient $4.50 and our Y intercept zero?  So now you can use that to figure out the two, what it's going to cost at each company for 20 shirts.


**Chapter 6: The teacher refers to new vocabulary**
**Time approximately:  00:30:53 – 00:34:03 (Times from start of video)**

**Slide:6**
The teacher references the new vocabulary during the exploration of Problem 2.3.

Line 1, 00:31:01   T:  What's the plus 6?

Lilly:  Um, the stuff they're- the pledge

Student:  I think -

Student:  Maybe they get 6 for every one  and then some  minus X.

T:  What do you think the minus X is telling them?   Well, let's see.   Could we make a table or a graph that might help us?

Line 10, 00:31:30    Lilly:  Um, I don't know.   I don't know how to make  it.   It's confusing me 'cause it says, like Y is multiplied some dollars -  it says Y equals 3, 3X and then it's X plus 6.    I, I wonder if this 6 is -  like that -   I'm not sure.    It says X is the number of kilometers left after taking away X.

T:  So we do have a negative X, which is weird. I agree.

Lilly:  Maybe they're not walking any kilometers, just paying $6 -

Line 20, 00:32:12    Student:  Yeah.
Lilly:  Like, uh, just, um, donating it.

T:  What if they did walk a kilometer?

Lilly:  Um -
T:  What would happen?    If they walked zero, would they have $6?

Student:  Wouldn't they get $6 no matter what? If that's what that means,  'cause if they get $6 donated no matter what just like, uh,  the $10 of Alana or something.

Line 30, 00:32:49    T:  So you think that Plan 2 may mean they just get $6  whether they walk or not?   What does Plan 3 mean?

Lilly:  Um,   that, I think that one means that they're just paying $2 'cause Y, like,  ' cause it says Y equals 2 that means that -  it's just like no matter what it'll be 2.

T:  So does Plan 3 mean no matter what you get $2?

Line 40, 00:33:19    Lilly:  I'm like, I'm sure on that one  but I'm not sure on that one.   It's like I have no idea what that means.

T:  Well, if we think about yesterday and this idea of a  Y intercept and a coefficient,   can you find the Y intercept and the coefficient in Plan 2?

Lilly:  Um, -

T:  Do you have any thoughts, Melanie?

Melanie:  Um -

Line 50, 00:33:59

T:  Maybe you guys can look at Y intercept and coefficient,  or a table or a graph for Plan 2, to help you figure out what's going on in that one,  and I'll come back in a minute.