Linear Equations: Using Symbols

Video Script

Scene		Full Transcript
1	**Skylar:**	He shoot, he scores! The crowd goes wild! Hey, Skylar here. Today I'm at the ice arena waiting to watch the hockey team practice. Their practices are **intense**, and fun to watch. My buddy Adam is the starting goalie, and he's got a bit of problem. He's got to buy a new hockey stick before the first game of the season, which is just four weeks away. He's struggling to save up enough money each week to meet his goal. By using models and algebra, we can help Adam set up his budget and get another problem solved!
2	**Skylar:**	Adam has been shopping around and just found an amazing deal on a stick for forty-four dollars. Now he just needs the money to buy it. He has eight dollars saved up, and he would like to know how much money he needs to save during each week for the next four weeks.
3	**Voice-Over Skylar:**	This is a pretty common problem that can be solved in multiple ways. We're asked to find when a steadily increasing amount reaches a certain level. First, we'll start with a dynamic model, and then find a solution. Then, we'll find a solution algebraically. And last of all, we'll demonstrate the connections between the two methods. Using this process has helped keep me out of the math penalty box more times than I can recall. So again, Adam wants to buy a forty-four dollar stick. He has eight dollars saved, and he wants to know how much money he needs to save in each of the next four weeks. Our dynamic model for this problem, is a balance. On the right side, we'll place forty-four dollars, the cost of the stick. On the left side of the balance, we'll place the eight dollars, Adam has already saved as well as four money bags, one for each week. We need to find how much money Adam needs to save each week. Both sides of the balance have equal amounts. Eight dollars, plus the amount Adam will save in the next four weeks, forty-four dollars. To find how much is in the bags, we first subtract the eight dollars Adam has saved from both sides of the balance. Forty-four minus eight is thirty-six. Adam needs to save an additional thirty-six dollars to buy the hockey stick. Lets figure out how much he needs to save each week. One way to figure this out, is to determine how much is in one of the four bags. Lets divide the thirty-six dollars by four, which equals nine. That means that nine dollars needs to be saved every week!

4	**Skylar:**	Nine dollars a week? That's it? Cut out a movie a week and you could easily save that. Why don't we go back and find the solution to what we just did, algebraically.
5	**Voice-Over Skylar:**	Here's the algebraic equation. 4d + 8 = 44. "D" is the number of dollars to be saved each week. First, subtract the eight dollars he already has from both sides. That leaves four, the number of weeks, times d equals thirty-six. Then we need to find the value of d. So, we multiply each side of the equation by one fourth, or, you can divide each side by four. Either way, you get the same answer, d=9.
7	**Skylar:**	Today, we used models and algebra to help Adam save to get his new equipment. You can use the same process to solve all sorts of problems, and to check your work. Problem Solved.