# Linear Equations: Tables and Graphs

## Video Script

| Scene | | Full Transcript |
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| 1 | **Mia:** | Woo! Hi, it's Mia, and I just got finished with my run. I'm training for my first big marathon. While I was out, I was thinking about writing algebraic equations and expressions and that problem that I helped my friend Justin solve, remember? He was the guy who was trying to determine where and when his friends were going to meet along the trail.<br><br>If you haven't watched that video, I suggest you check it out before watching this.<br><br>There are different ways to look at math problems, and often many strategies to solve them. If you just use a few basic tools you'll be off and running. So lace up your shoes and lets get another problem solved. |
| 2 | **Voice-Over Mia:** | The example involving Scott, Shawn and their trail run is a good example to work with. Originally I used a line representing the trail to describe what was going on in the algebraic equation, and then we reviewed the equation. However, you could also use a table to compare the number of hours each person ran, and the distance both are from checkpoint A.<br><br>Often, you will use a table that looks like this for your problem. The heading of the three columns for this table are: Number of Hours, Scott's Distance from Checkpoint A, and Shawn's Distance from Checkpoint A.<br><br>You should remember that Scott was traveling four miles per hour and Shawn was traveling seven miles per hour.<br><br>When Shawn started, he was at mile maker one and Scott was at mile marker ten. After one hour, Shawn had traveled seven miles and was at mile marker eight, and Scott had traveled four miles and was at mile marker fourteen.<br><br>After two hours, Shawn had traveled fourteen miles and was at mile marker fifteen, and Scott had traveled eight miles and was at mile marker eighteen.<br><br>Finally, after the third hour, Shawn had traveled another seven miles and Scott another four, putting them both at the twenty-two mile marker.<br><br>Tables like this will help you see relationships and find the solution. |
| 3 | **Voice-Over Mia:** | A second strategy involves using a graph to visualize the problem to determine the solution.<br><br>For example, here the horizontal line represents the number of hours Scott and Shawn have been running, and the vertical line represents their distance from checkpoint A. We can easily plot where both men are when Shawn starts out.<br><br>At the first hour, we plot eight for Shawn and fourteen for Scott. At the second hour, we plot fifteen for Shawn and eighteen for Scott. We can begin to see that both relationships are linear. Shawn's progress is represented by a |

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| | | straight line, so is Scott's progress. This is because they are both traveling at a constant speed. The point where they intersect must be when Shawn and Scott are at the same location at the same time. That's after three hours!<br><br>Whether you use a table, graph, equation or number line, the solution and conclusion are the same.<br><br>Four h plus ten equals seven h plus one (4h + 10 = 7h + 1), four times three plus ten equals seven times three plus one (4(3) + 10 = 7(3) + 1). Twelve plus ten, equals twenty-one plus one. It checks! Three hours is when they will meet. They will both be twenty-two miles from checkpoint A.<br><br>By representing our situation in multiple ways, we can see the connections between the situation and algebraic equations, graphs and tables. |
| 4 | **Mia:** | Incorporating these methods into your approach to solving math problems, will give you more ways to say, that's another problem solved! |