

## Transcription Focus on Teaching and Learning Video: Sample Math Problem Solving

**K. Barker:** Hello, I am Keith Barker and host of “Focus on Teaching and Learning” and the director of the Institute for Teaching and Learning here at the University of Connecticut. I have with me in the studio Chuck Vinsonhaler, professor of mathematics. Chuck, you have had a long career in teaching. Tell us a bit more about it. Tell us about your general philosophy of teaching and learning.

**C. Vinsonhaler:** It has been 30 years, Keith. I came to UConn in 1968 and so this is where I have done all my teaching. And you asked me up for a philosophy, so I would say that when it comes to learning the thing I try and emphasize is that it is exciting. Through our study of subjects like mathematics we can come in contact with the great minds of history. And yeah, I mean exciting; it goes on your whole life. It’s a lifelong process. And finally, the hard part is that it is work. It is something you have to work at. And I think those same three things could be said about teaching. It’s an exciting thing to do. It is something that you never stop learning about and it is work...

So, if you'd like to see an illustration of the simplify principle, we could play a little game. There are 31 pennies on the table here and this is one of a host of this type of game. And the rules are, we take turns and each person can remove up to 5 pennies at a turn and the person who removes the last penny wins. And you can give this to students and have them play and they might learn something about it but if you simplify the problem you can learn something about it much faster. So, for example, if it was a 1-penny-game and I said: “How would you play to win this game?” I think you would choose to go first and take the penny. And the same thing would happen if I put 2, 3, 4, or 5 pennies on the board. You would say: “I’ll go first” and you would take all the pennies and win. But if I change it to 6 pennies, the game becomes different because now you can win only by going second. Because whatever penny I take, if I take 2 pennies, now you can take the rest and win. And so, we could work up the ladder like this, each time adding a penny and you would see the winning strategy and very quickly the students find the pattern and then they know how to play the whole game. So, simplifying is a good way to attack a problem.