

The Simplifying Radicals Card Game

Rules and Idea taken from:

<http://mswagnersclass.wordpress.com/2012/10/25/a-game-for-practicing-simplifying-radicals>

We started with a deck of cards for each pair of students in my class. (I got these cards for free from the local casino – it’s a great teacher trick, so if you’re looking for free decks of cards, hit up the casino!)

We assigned values to each of the cards in a standard deck (just like in Richard’s game). As a class we chose that an Ace is 1, numbered cards are “as is”, the Jack is 11, the Queen is 12, and the King is 13

In this two player game, each player receives half of a standard deck of cards. Players then flip over one card each to form the radicand of the radical they are meant to simplify. For example, if a “3” and a “2” are flipped over, then the players would race to simplify the square root of 32. If the cards were a Jack and a Queen, the players would race to simplify the square root of 1112.

The player that gives the correct answer first wins both cards. If there is a tie, the cards stay on the table and two more cards are played, with the winner taking all four cards. The player with the most cards wins!

After playing this game with my class, we noticed that most of the card combinations resulted in a radicand that could not be simplified further. For example, if the cards were “2” and “3”, then the $\sqrt{23}$ couldn’t be simplified further. However, if the cards were “3” and “2”, then the $\sqrt{32}$ could be simplified to $4\sqrt{2}$. I think the next time we play the game, I’ll add a rule that students need to be able to simplify both radicals (to make it a little more interesting).

I really liked watching how my students interacted with each other throughout the game. I found it neat to see that the students who had fairly similar skills were very much about the “racing”, whereas if students were in a pairing where one student was stronger at simplifying radicals than the other it turned into more of a “quizzing” scenario where the stronger student was assisting the student who was developing their skills. It made me super proud of the students I teach, and it was one of those very cool teacher moments where you are reminded how fantastic it is to have a caring classroom community.

I also am wondering about adapting the game for simplifying cubed roots, or fourth roots. I may make a set of cards that could be used for that activity, so that there would be fewer cases where it isn’t possible to simplify the expression.

Extra comments on blog-helped with instructions

Leslie T. | [March 26, 2013 at 12:00 pm](#) | [Reply](#)

I absolutely love this idea!! We had a blast playing it tonight. Thank you so much for sharing it with everyone! ead where you had issues with a lot of answers being simplified and I ran into that my first hour. To fix that I had the students switch the cards if they ended up simplified and try that number. If both situations ended up being simplified, then they split the cards. So for example, if the students drew a 6 and a 7 and tried to simplify $\sqrt{67}$, they realized it was already simplified. Since this occurred, they would switch the numbers trying to simplify $\sqrt{76}$ simplifying it to $2\sqrt{19}$. If they tried this with 1 and 7, then they would both $\sqrt{17}$ and $\sqrt{71}$ is simplified so they split the cards