Original Creative Work

Citation: Noel Patson, Recorded or Rendered Work, Web Exhibition, *Square Matrix Permutations* Wolfram Mathematica.

http://demonstrations.wolfram.com/SquareMatrixPermutations/

Research Background
The demonstration is an interactive display that illustrates the connection between the permutations of square matrices and the Pisano sequence which is related to Fibonacci numbers. This approach is appealing to both kinaesthetic and visual learners. The initial discovery of the connection was first reported in:

N. Patson, *Pisano period and permutations of n × n matrices*, Australian Mathematical Society Gazette, Vol 34, Number 1, pp 39-43.

Research Contribution
• Innovation – This presentation is the first time the Pisano sequence has been illustrated using an interactive approach.

Research Significance
The demonstration has been through a rigorous review process†.
    † http://demonstrations.wolfram.com/FAQ.html

The demonstration has been referenced in the following 3 websites
http://www.filepie.us/?title=Pisano_period
http://www.ancient-rome.info/Pisano_period
http://mathworld.wolfram.com/PisanoPeriod.html

Author: Noel Patson
Date: July 2008