Guess a Function *(Dyrholm)*

USES This is designed for Grades X, XI, and XII but much of it is also appropriate for junior high. It is felt that these games are more useful if the student is familiar with the various types of "conditions" and with the process of taking differences. Their uses would be as an interest captivator, a teaching device, a review technique, and as an enrichment.

MATERIALS
1. Horseshoe Tale - Based on counting the cost of each successive nail (nails vs. cost).

2. Tower Puzzle - Puzzle which generates the same function as the horseshoe tale (disc vs. moves); available from materials center.

3. Peg Game - Available from materials center - can be constructed easier with checkers (pegs vs. moves).

4. Forming Squares - 1" squares used to form successive squares (edge vs. 1" squares).

5. Cube Construction - Unit cube used to form successive cubes (edge vs. unit cubes).

6. Checkers - Eight squares in a row, home square empty (checkers vs. moves).

   a) Game 1, jump any number or move one square.
   b) Game 2, move one square only.

7. Elevator - Eight squares in a row. Checker on square indicates full load. Black checker is elevator which must transport the loads from each floor to the basement (load vs. time).

[*Plotted points have been joined on all graphs although it may be hard to justify as all these games deal with discreet points and not a continuum - however, the points were joined to better demonstrate graph shapes of the various functions.*]

REFERENCES from *The Mathematics Teacher*

Allen, H.A.J. "Making Sense Out Of Nonsense," March 1974, pp.270-272.

Arpaia, Pasquale J. "Discoveries in Mathematics: How Are They Made?", May 1974, pp.447-449.

Baersig, Teresa M., O.S.F. "An Analysis of Elementary Functions for High School Students," April 1972, pp.355-370.

Brieske, Thomas J. "Functions, Mappings, The Mapping Diagrams," May 1973, pp.463-468.

Brown, Lynn H. "Discovery of Formulas Through Patterns," April 1973, pp.337-338.

Collister, Larew M. and Thomas R. McCabe. "But What If It Doesn't Factor?", February 1973, pp.155-157.

Draim, N.A. "A General Algorith for Factorization," December 1973, pp.741-746.

Garf, David. "Some Techniques in Handling a Slow Class in Elementary Algebra," November 1972, pp.591-594.

Goldberg, Dorothy. "$A = P (1 + r/n)^{nt}$ or How To Gain Some Interest in the Classroom," April 1972, pp.310-312.

Henry, Boyd. "Some Investigations for Students of Mathematics," March 1973, pp.231-234.

Himmelberger, Warren J. "Puzzle Problems and Diophantine Equations," February 1973, pp.136-138.

Moore, Thomas E. "Cayley's Color Groups," November 1973, pp.615-618.

Morrow, Lorna J. "Flow Charts for Equation Solving and Maintenance of Skills," October 1973, pp.499-506.

Munger, Ralph. "An Algebraic Treatment of Magic Squares," February 1973, pp.101-107.

Newell, Robert A. "The Twelve Nights of Christmas," December 1973, pp.707-708.

Nicolai, Michael B. "A Discovery in Linear Algebra," May 1974, pp.403-404.

Olson, Edward L. "Common Summation Formulas Before Induction," May 1973, pp. 453-454.

Palmaccio, Richard J. "An Analysis of a Simple Periodic Sequence," March 1972, pp.255-259.

Rapapart, William J. "Paper Folding and Convergent Sequences," May 1974, pp.453-457.

Rogers, Joseph W., and Margaret Anne. "An Algorith for Partial-Fraction Expansion," March 1972, pp.237-239.

Smith, William D. "A Mod Transformation for Second-Year Algebra," December 1974, p.751.

Stern, Burton L. "Algebra In Card Tricks," October 1973, p.547.