

DIVISION I (GRADES K-1)

Mathematics Pentathlon® Games & Essential Resources

SHAPE-UP™

The game of Shape-Up integrates fact families with geometric shape recognition, attributes, algebraic thinking, spatial visualization, and directionality. The former two abilities relate to the goal of Shape-Up. The Shape-Up gameboard is comprised of a connected network of circles which each contain a large or small version of a geometric shape. There are eight different shapes which are rotated and colored in different ways. To win the game, students are to position one of their chips on the small version and the other chip on the large version of the same shape. What enriches this task is that in order to win students are to focus on the attributes of shape and size and disregard the rotation and color of the shape. Chip movement is based on the roll of a die. Students choose to move one or both of their chips up or down on either side of the gameboard. Strategic play is based on using fact families effectively to determine better options.

HEX-A-GONE!™

The Hex-A-Gone gameboard is comprised of connected hexagons, trapezoids, rhombi and squares which students cover using pattern block shapes (triangles, two types of rhombi, trapezoids, squares, and hexagons). Students may use one or more blocks to fill a geometric region. For each turn students choose one, two, or three pattern blocks in an attempt to be the last player to place a block on the board (the goal). A limited number of blocks in the bank and available spaces on the gameboard motivate students to carefully observe and analyze their options. A wide array of mathematical skills are enhanced by playing this game including spatial visualization, estimation, measurement, fractions, algebraic thinking, and deductive and inductive thought.

CALLA™

Number sense, deductive thinking, directionality, and one-to-one correspondence are developed in this challenging game which is varied from the many ancient African and Asian counting games. In this strategy game students distribute centimeter cubes around the gameboard to plan for free turns and captures that result in acquiring the greatest number of cubes in their "Calla" (the goal).

KINGS & QUADRAPHAGES™

Horizontal, vertical, and diagonal movement, which is the basis of many mathematics/science concepts, is practiced in this simple, but challenging entrapment game. In addition, students experience a dynamic use of counting skills while exploring deductive thinking and the topology of open and closed regions. Students take turns placing a chip (referred to as a square-eating Quadraphage) on a grid-type gameboard and moving their pawn (the King) to entrap the opposing King.

STAR TRACK™

Number sense, inequality, addition, measurement, mapping, and decision making are experienced in this game which uses connected chain links. Students take turns selecting two chain links of various lengths from a bucket and deciding which is the better choice of the two chains. While the chain length determines how many spaces they will move on the gameboard, numeral and pentagram landings as well as bump rules help students consider that bigger is not always the better choice.

The Guide for Teaching & Sequencing the Mathematics Pentathlon® Program for Division I (Grades K-1): This step-by-step Program Guide of Math Pentathlon lessons provides effective and detailed guidance to adults who are teaching the Math Pentathlon Program at their school. The Guide is organized into monthly lesson plans with 4 lessons per month for weekly implementation.

Adventures In Problem Solving Activity Book I (K-3): This publication connects the games with ongoing classroom and club instruction. Prerequisite skills for playing the games as well as many other problem-solving activities are described in a user-friendly format.

Investigation Exercises Book I (K-3): These problem-solving worksheets develop a more analytic focus and greater insight into the multiple strategies of each game.

MATH CONTENT & STANDARDS: MATHEMATICS PENTATHLON® PROGRAM

(The Games, Adventures in Problem Solving, and Investigations Exercises)



Developed in Games and Adventures/ Investigations only



Developed in Adventures and/or Investigations only

		COMPUTATIONAL REASONING														LOGICAL/SCIENTIFIC REASONING							SPATIAL/GEOMETRIC REASONING																											
		Counting	Number Sense	Algebra	Number/Numeral Recognition	One-to-One Correspondence	Equality	Inequality	Addition	Subtraction	Multiplication	Division	Fractions	Decimals	Measurement	Prime & Composite or Odd & Even Numbers	Exponentiation	Factorials	Probability	Observation	Classification	Communication	Patterning	Hypothesizing & Experimentation	Deductive Reasoning	Inductive Reasoning	Number Theory	Combinatorics	Geometric Figures & Regions	Directionality	Topology	Networks	Structural Analysis of Space	Symmetry & Reflections	Congruence	Similarity	Area	Transformational Geometry												
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