

Research on Block Play

- A study of everyday math activities of preschoolers by Tudge and Doucet (2004) found that most children were seldom or never involved in explicit mathematics activities, whether in the course of lessons or play with artifacts designed to encourage mathematical experiences.
- The skills acquired in one stage of the life cycle affect learning at subsequent stages. Manipulation of blocks helps youngsters develop early skills, including math literacy – the language of numbers. Critical periods for understanding symbols and relative quantity, two significant math prerequisites, occur before the age of five years (Huttenlocher, Jordan and Levine, 1994).
- Children construct knowledge through their senses and their experiences in the world around them. Lev Vygotsky, a Russian psychologist, believed that through play, children stretch beyond their own understanding and develop new skills that support further learning. Through play, children develop an ever-growing sense of themselves and others, knowledge of the physical world, and enhanced ability to communicate.
- Empirical studies have related construction play or block abilities and mathematics learning in children. Hanline, Milton, and Phelps (2001) found a relationship between preschool children's ability to classify, seriate and conserve in their construction play to later performance on standardized achievement tests in kindergarten and first grade.
- A longitudinal study looked at the relationship between the complexities of block play in preschool children and their later math skills. Block play and math performance were related in junior high and high school. Researchers found a significant relationship between preschool block performance and number of math courses taken, number of honors courses, mathematics grades achieved, and weighted mathematics 'points' scores ((Wolfgang, Stannard and Jones, 2001).
- The National Council of Teachers of Mathematics has led the current reform in American education. According to the NCTM Standards, mathematic concepts are introduced and taught with manipulatives, primarily a variety of blocks. Manipulatives are used to teach all concepts at all levels, K-12 (Ansel).

References:

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