
READY for SCHOOL Parent News: **Beginning Geometry**

Preschoolers develop early concepts of geometry as they manipulate shapes and become increasingly aware of spatial relationships. Van Hiele's (1986) Levels of Geometric Thinking may help you understand the stages of development you will see in your child:

- Level 0 – Children learn to recognize geometric shapes by viewing them as a whole.
- Level 1 – Children learn individual characteristics of shapes such as “a triangle has three sides.”
- Level 2 – Children learn more complicated relationships between the characteristics of a shape – for instance, they may come to understand that a square is a rectangle because it has all the same properties of a rectangle.

Most preschoolers are operating at level 0. Children in the primary grades are typically at level 1. Providing children with opportunities to explore and experiment with shapes and their properties allows them to move through the stages, but movement is typically slow. A few suggestions follow for activities and materials to encourage geometric thinking in young children:

- Block play is great for shape recognition. Children learn much just through their own spontaneous, independent block play. For example, the simple process of matching and sorting similar blocks at clean-up time builds geometric thinking. When you have time, asking open-ended questions may help to spur children's thinking to the next level. Ask questions such as:
 - “How is your block tower different from mine?”
 - “What will happen if I take out the bottom block?”
 - “Can you tell me what I need to do to make my block building look just like yours?”
 - “Can you put 2 blocks together and make another shape?”
 - “We are getting ready to clean up now – how will you remember what you built?”
- Make spatial vocabulary a regular part of the language you model for your child. Acting out stories such as “The Three Billy Goats Gruff,” for example, offers numerous opportunities for children to show their understanding of “under,” “over,” “across,” “near,” “far,” etc.
- Ask shape questions as part of your play together. For example having shape blocks or cardboard or paper shapes available, ask “Have you seen this shape before?” “Where have you seen it?” “Can you find a shape like this in our home?” “Do you think this shape would roll or slide?” “Can we stack these shapes?” “Can you cut this paper to make another shape?” “Can you make a square (circle/triangle) with pipe cleaners/yarn?”

Resources:

Copley, J. V. (2000). *The Young Child and Mathematics*. Washington, DC: National Association for the Education of Young Children.

van Hiele, P. M. (1986). *Structure and Insight: A theory of mathematics education*. Orlando, FL: Academic.