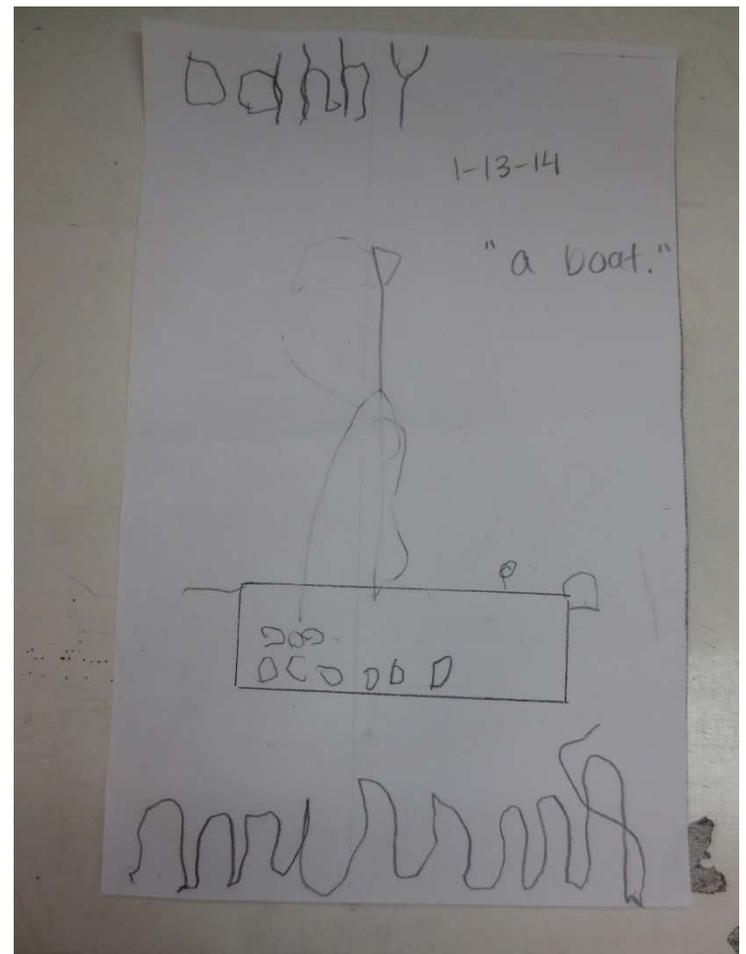


Individual shapes



Space



Block Play

The beginning block builder deals first of all with the spatial relations of objects to each other, as described by the geometric system of topology.

- **Topology** is the study of geometric properties and spatial relations that refers to the way in which constituent parts are interrelated or arranged.
- **Projective Geometry**

Concepts in Topology

- Proximity
- Order (Seriation)
- Separation
- Surrounding, Enclosure

- Continuum
- Dimensionality



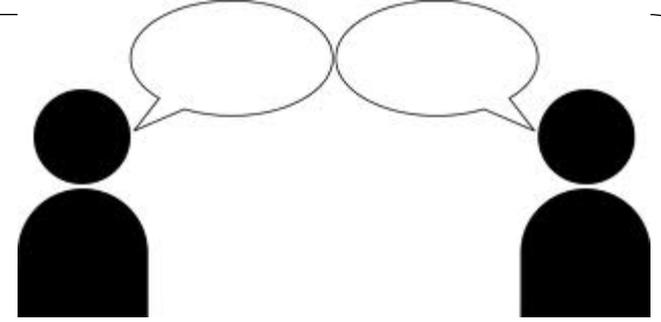
Space

Stages of Block Play



- Refer to the handout

Application Activity



- Think about challenges that you have faced or anticipate that prevent you from encouraging Block Play in your classroom.
 - Share it with a partner. Discuss pitfalls and possible solutions.
- Refer to the Template

Standards

Standard 4.4: Children develop spatial and geometric sense.

4.4.1 Respond to and use positional words (e.g., in, under, between, down, behind).

4.4.2 Use accurate terms to name and describe some two-dimensional shapes and begin to use accurate terms to name and describe some three-dimensional shapes (e.g., circle, square, triangle, sphere, cylinder, cube, side point, angle).

4.4.3 Manipulate, compare and discuss the attributes of:

- (a) two-dimensional shapes (e.g., use two dimensional shapes to make designs, patterns and pictures by manipulating materials such as paper shapes, puzzle pieces, tangrams; construct shapes from materials such as straws; match identical shapes; sort shapes based on rules [something that makes them alike/different]; describe shapes by sides/angles; use pattern blocks to compose/decompose shapes when making and taking apart compositions of several shapes).
- (b) three-dimensional shapes by building with blocks and with other materials having height, width and depth (e.g., unit blocks, hollow blocks, attribute blocks, boxes, empty food containers, plastic pipe).

Preschool Teaching Practices

Effective preschool teachers:

- Use positional words (e.g., over, under, behind, in front of) to describe the relative position of items and people, and encourage the children to use them (e.g., “Michael is sitting next to Ana.” “I see that you used yellow paint under the blue stripe on your painting.” “Are you in front of or behind me?” “The car is on the right.”).
- Dramatize stories that make use of positional words (e.g., *Rosie’s Walk* by Pat Hutchins).
- Use everyday experiences to foster understanding of spatial sense (e.g., talk about locations in the school, map the classroom by learning/interest area, invite children to use blocks to create simple scenes or locations [e.g., the park, the zoo] ask children to describe and/or draw how to get from the classroom block area to the easel).
- Provide materials that can be put together and taken apart indoors and outdoors that help children to develop spatial and geometric sense (e.g., puzzles of varying complexity, items to fill and empty, fit together and take apart, or arrange and shape; materials that move; tunnels to crawl through).
- Introduce vocabulary describing two- and three-dimensional shapes and constructions (e.g., circle, sphere, square, cube, triangle, rectangular prism, pyramid; side, point, angle) and use that vocabulary when interacting with children and materials in learning centers, small groups, and individual settings.
- Provide opportunities for children to compose and decompose pictures and designs with two-dimensional shapes (e.g., tangrams, in collage arrangements, two-dimensional manipulative shapes, computer and interactive whiteboard software, handheld device [such as a tablet] applications).
- Provide opportunities for children to compose and decompose with three-dimensional shapes (e.g., unit blocks, hollow blocks, three-dimensional manipulative shapes, boxes, balls, three-dimensional styrofoam shapes).
- Provide opportunities for children to talk about their two- and three-dimensional designs with other children and with adults.
- Provide opportunities for children to explore and describe the differences and similarities between attributes of two- and three-dimensional shapes (e.g., “It’s like a can.” “It has 3 sides and 3 points, so it’s a triangle.”) and constructions (e.g., faces of attribute blocks, balls, blocks of all shapes, boxes, beads).

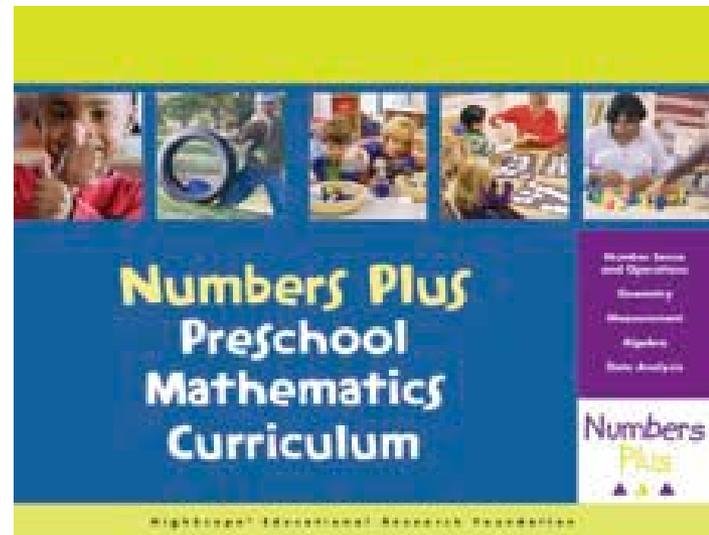
Refer to the Handout

Numbers Plus Lessons

Topics:

- Shape
- Transformation
- Spatial reasoning

High Scope





- Refer to the *High Scope Extensions Article: Spatial Learning: Beyond Circles, Squares, and Triangles.*

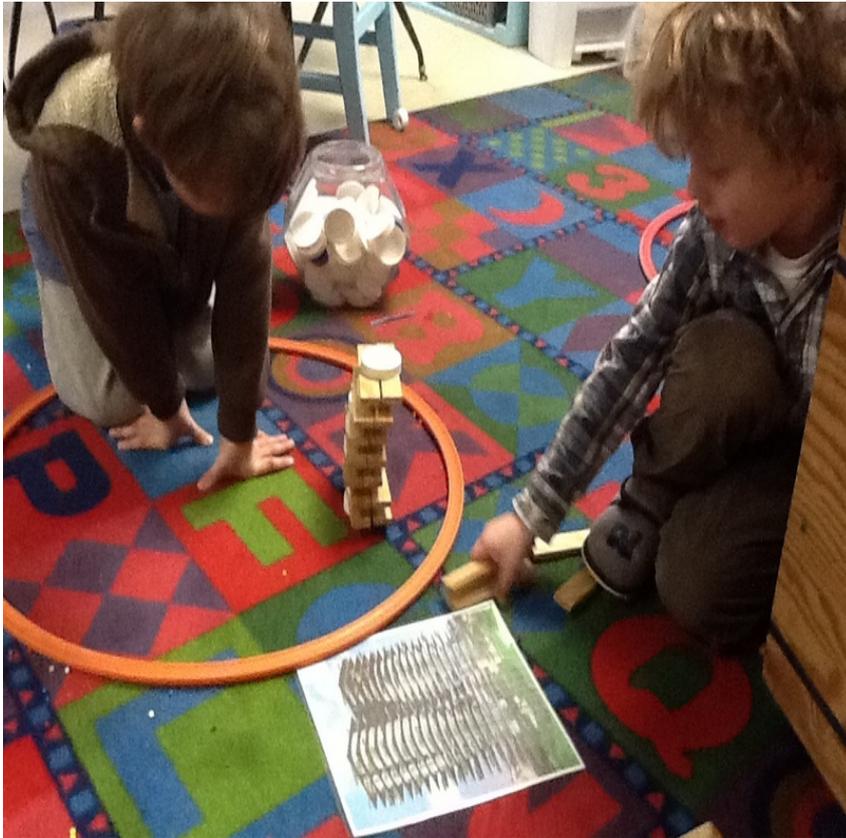
- Included as a Handout

Simple Ideas!

- Add Boxes of different sizes to your block area.
- Encourage children to create a prop for pretend play.

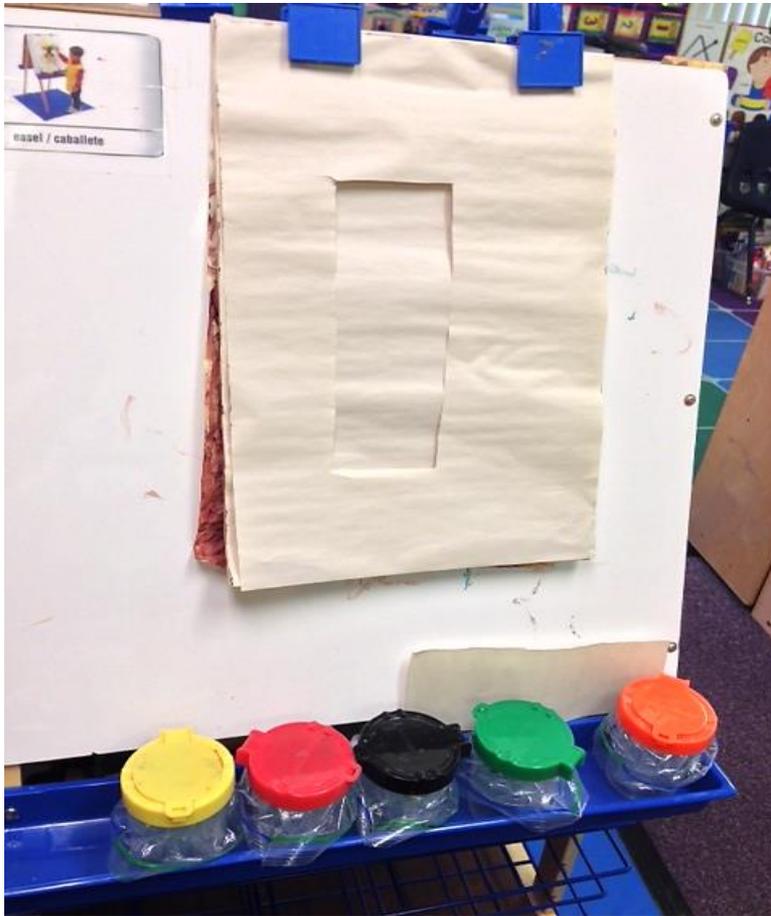


Simple ideas!



- The use of a hoop adds another dimension as they need to work within the assigned space.
- It can also be used as a strategy to develop physical self-regulation.

Simple Ideas!



- Easel

You may cut out different shapes on the paper and encourage children to paint around the shape.

Simple ideas!

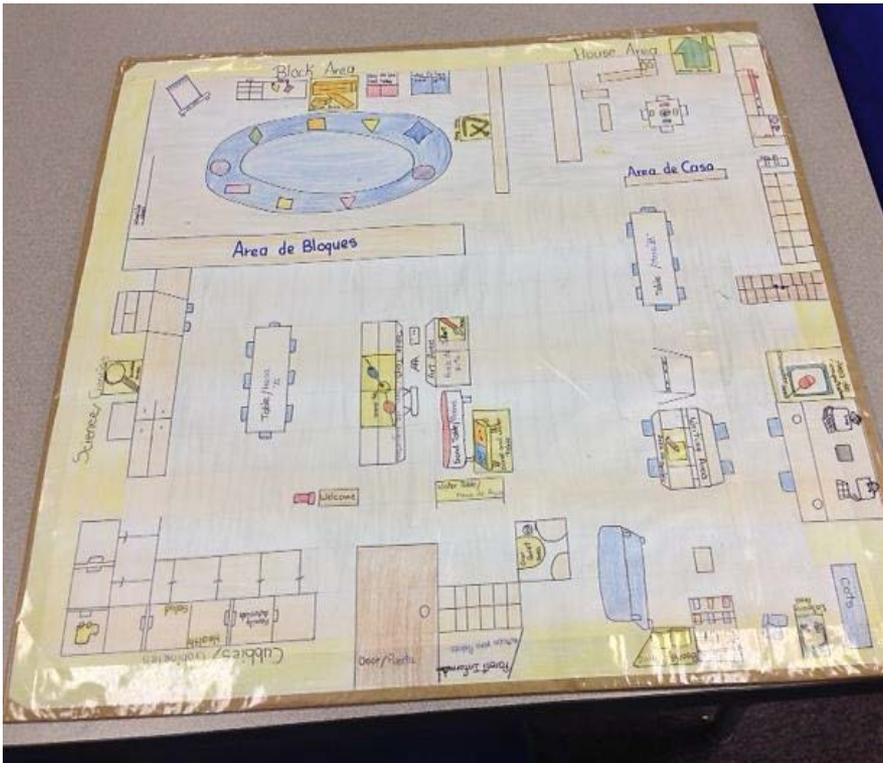


- Build a fort.

Simple Ideas!

- Concrete map

You may create a concrete map with children and use it during planning and recall.



Simple Ideas!



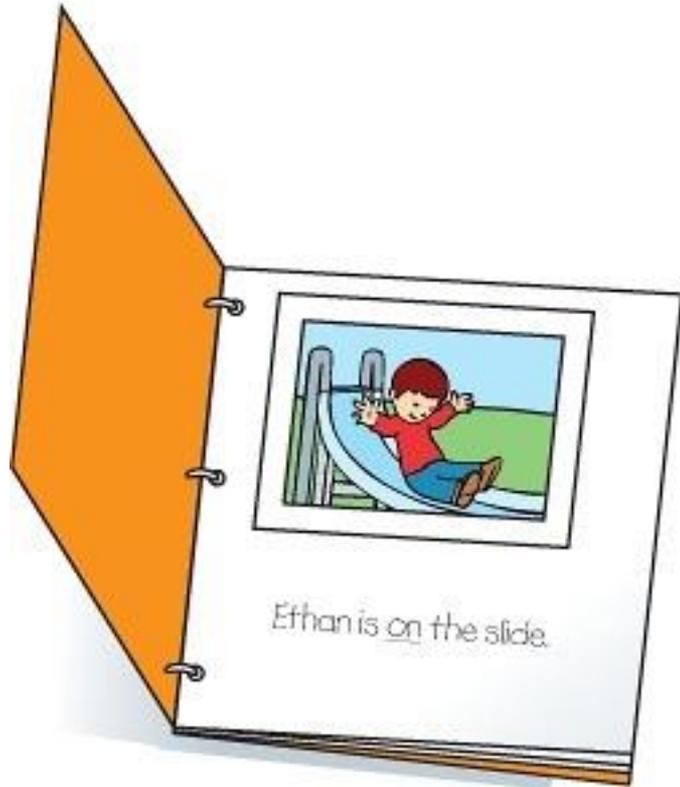
- Use manipulatives or use characters from literature like David to pique their interest.

Simple Ideas!



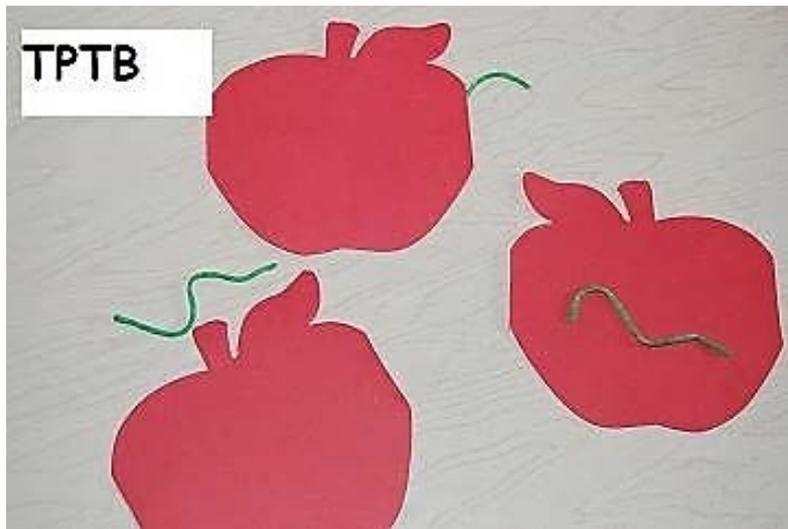
- Puppy and the bandages.

Simple Ideas!



- Illustrate the concepts with a class book.

Simple Ideas!



Create Flannel board pieces for characters from literature like

- The Very Hungry Caterpillar,
- Lowly the worm, from Richard Scarry or
- the worm from Diary of a worm by Doreen Cronin.

Simple Ideas!

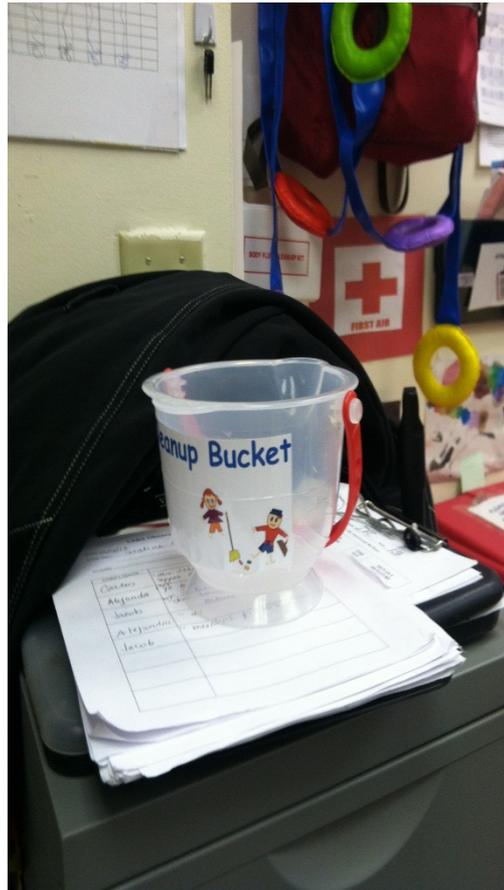


- Use tangible objects supplemented by visuals to illustrate the point.
This could be done as a large group.

Simple Ideas!



Simple Ideas!



- Clean up buckets not only help modify a challenging behavior, but also support the KDI of filling and emptying and well as concept of separation.



Unmistakable causal link between music
and spatial intelligence.

Insert an audio clip* to play as the next slide shows.



Resources

- *NJ DOE Preschool Math Standards*

<http://www.nj.gov/education/ece/guide/standards/math/master/standards.pdf>

- *Educating Young Children Chapter 16, Space*
- *Stages of Block Building, The Block Book, 3rd Edition, NAEYC*
- *High Scope Extensions Article: Spatial Learning: Beyond Circles, Squares, and Triangles.*
- *Building Foundations for Spatial Literacy in Early Childhood, Young Children, November 2005, NAEYC*

Questions?

Thanks