Early Geometry Concepts: Making Connections to the Real World

Melinda Schwartz, Ed.D.
Learning Services Educator

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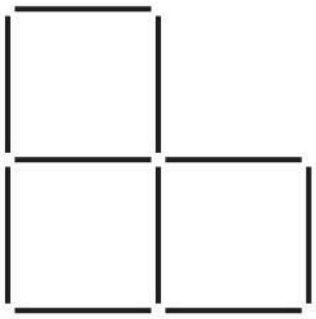
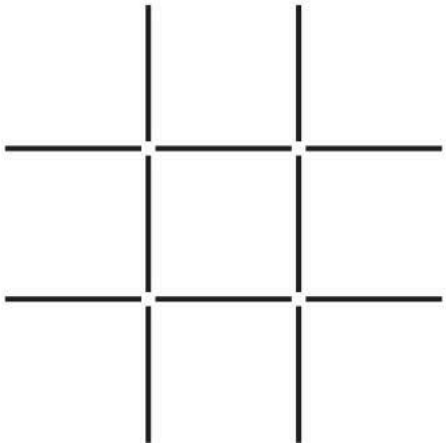
geo toothpick puzzles



Take away 2 toothpicks to make 2 squares that are exactly the same size.

Add 4 toothpicks to make 5 triangles.



Move 3 toothpicks to make exactly 3 squares.

Math in the Early Years - Food for Thought…

"Mathematics knowledge at age 7 is a stronger predictor of socioeconomic status (SES) in adulthood than is childhood SES, over and above the effects of IQ, reading achievement, and intelligence" (Ritchie and Bates 2013).

Synthesis of IES Funded Research 2002-2013, July 2016

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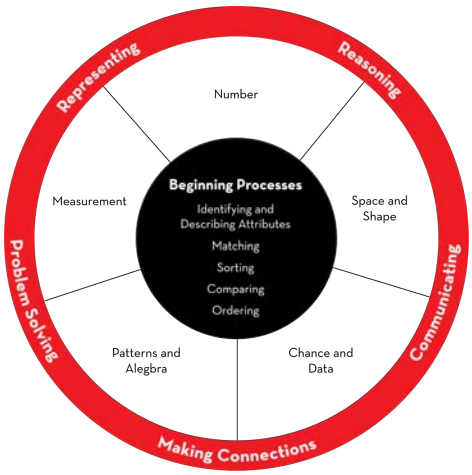
Pre-requisite Skills



Early Childhood Mathematics Framework

Irons, 2007

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Geometry is…

- the **exploration** of space, size, and position.
- the manipulation of mental pictures, often called **visual thinking**.

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Geometry involves…

- Eye-motor coordination
- Figure-ground perception
- Position-in-space perception
- Perception of spatial relationships
- Visual discrimination
- Visual memory

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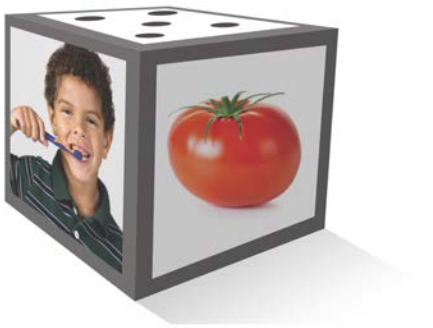
Attributes of 3D Objects

- Flat Surface or Face
- Edge
- Corner or Vertex
- Apex
- Curved or Rounded Surface



Analytical Approach to 3D

Emphasizes the **attributes** of the object.

- Does it roll, stack, or both?
- Same number of faces, edges, corners?

Holistic Approach to 3D

Involves building **families** of objects with geometric similarity

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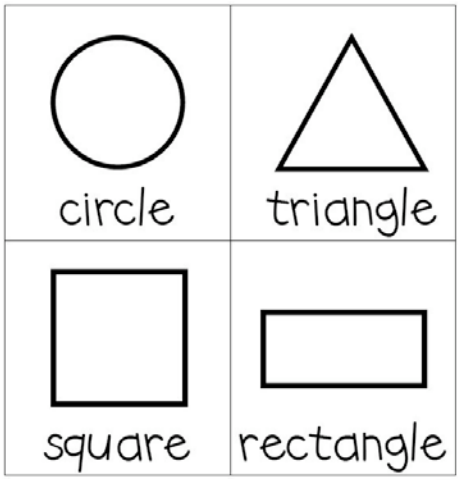
2D Shapes for Young Learners

2D shapes come **from** 3D objects!

Attributes:

- No thickness
- Are flat
- Corners
- Sides



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