

RAFT IDEAS

Topics: Problem Solving, Logic, Mathematical Reasoning

Materials List

- ✓ 16 rectangular containers (for 4 x 4 puzzles)
- ✓ 4 each of 4 unique items, preferably different colors
- ✓ Long, thin cardboard strips to separate sections
- ✓ 6 cardboard rectangles sized to fit in the bottom of a container.

This activity can be used to teach:

CO Math Standard 4: Shape, Dimension and Geometric Relationships

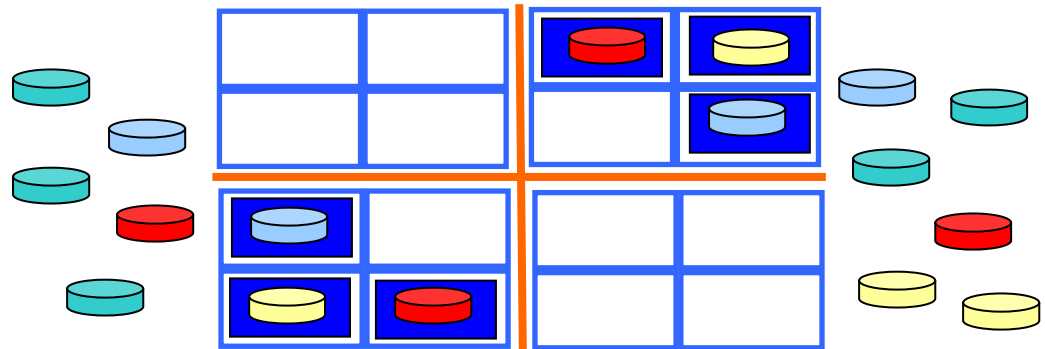
- Logic and Mathematical Reasoning
 - Spatial Reasoning
- Grades: 2, 3, 4, 5, 7, HS
21st Century Skills:
- Collaboration
 - Self-Direction



2875 Blake Street • Denver, CO 80205

Tactile Sudoku

Problem Solving with Realia



Even young children can enjoy this popular exercise in logic when it is simplified down to a 4 x 4 grid!

Assembly

1. Set-up the containers and separating strips to create 4 sections of 4 (see illustration above.)
2. Place cardboard rectangles into the boxes with “given” information (i.e. – Items in these boxes cannot be removed.)
3. Place the “given” puzzle items into these 6 boxes, and place the additional items near the puzzle area for placement during play. (see page 2 for sample puzzles)

To Do and Notice (for 1 or 2 solvers)

Use logic and deduction to solve the puzzle by determining placement of each puzzle piece so that:

- Each row has 1 of each item
- Each column has 1 of each item
- Each quadrant (little square of 4) has 1 of each item

The Content Behind the Activity

Modern Sudoku puzzles evolved from a number grid concept called “Latin Squares”, accredited to 18th century Swiss mathematician Leonhard Euler. Variants of number grids have appeared in puzzle magazines since the late 1970’s, called Number Place. In the early 21st century, newspaper syndication helped popularize the grid puzzle under the name Sudoku (from Japanese for “Solitaire with Numbers”).

While even the earliest versions of the number grids were 9 x 9, simpler versions using 4 x 4, 6 x 6, or other variations provide younger students with excellent logic and problem solving opportunities more aligned to their development levels.

Taking it Further

- When working with pre-school children, introduce the concept by working through a couple puzzles together in small groups. Verbalize the process throughout and encourage students to share observations and rationale.
- Extend the board to 6 x 6 for greater challenge.

Web Resources (Visit www.raft.net/more for how-to videos and more ideas!)

For more history on Sudoku and links to puzzles, go to:

www.sudokuaily.net/history.php

		C	A
			B
B			
A	C		

	B		
D	A		
		B	C
		A	

		B	
	D		
		C	
	A		

		C	
D	C		B
A		D	C
	D		

C		D	
	D		C
B		A	
	A		B

		D	
A			
			D
	C		

	C		D
D		C	
	A		B
B		A	

		C	
	D		
		A	
	B		

		B	
C	B		A
D		A	B
	A		

	A		
D		A	
A	B		C
		B	

			C
	D	A	
	B	C	
D			

	C		
B			C
D			A
		D	

	A		
D		A	
	D		C
		D	

C	B		A
D		B	C

		D	
		A	C
	C		
A	B		

	D		
B		D	
	C		D
		C	

C			
	B	C	
	A	D	
			A

B		A	
			B
D			
	B		A

	B		
D	A		
		B	C
		A	

C			
	B	C	
	A	D	
			A

	B		
C		A	
	C		A
		D	