## Abstract Strategy Game

## Mind Vectors

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## Included in Your Game

- Game board printed on 22" bandanna
- Fabric stuff bag
- Bag of game pieces - 25 each of three different colors
- Game instructions


## Mind Vectors Game Space

The game space is $4 x 4 x 4 x 4$. However only the first two dimensions are linear.

## Dimensions

The first two dimensions in the Mind Vectors game space are shown in the figure on the right. Each colored grid is a two dimensional playing surface.

The third dimension is cyclical.


The first two dimensions, $x$ and $y$.


The third dimension is cyclical among different-colored grids. From each grid the next instance is the adjacent grid going clockwise or counter-clockwise. The figure on the left shows a vector (line) from blue to purple grids. (It could also be viewed as from the purple to the blue grid.)

The fourth dimension is like the third dimension. It is cyclical as well. Instead of colors, instances are separated by compass points.

The figure on the right shows a diagonal vector through all four dimensions. To describe positions on the game board use cartesian style coordinates. For instance the vector on the right has the four locations at:

- $(4,4$, blue, SW $)$
- $(3,3$, purple, NW)
- $(2,2$, red, NE $)$
- (1, 1, green, SE)

A vector through all dimensions.


In this example the third dimension goes counter-clockwise and the fourth dimension goes clockwise.

## Game Rules

This game is for 2-3 players ages $\mathbf{8}_{-}^{\star}$ and above. It takes about $\mathbf{3 0}$ minutes to an hour.

## Goal

Get a vector first. Four pieces in a row in one or any combination of dimensions is a vector. Pieces must all be in sequence (not from first to third to second to last and so forth).

## To Play

Separate game pieces into colors, and each player gets all of one color.

Alternate turns placing one game piece on an unoccupied space per turn. Moves should be to build a vector or block your opponent from building a vector.

## *Simplified Version

Try playing on just one quadrant of the game board on just one set of colored grids. It becomes a three dimensional game instead of four, only one cyclical dimension. The vector shown is $[(1,2, R),(2,2, G),(3,2, B),(4,2, P)]$.


Use one quadrant for a simplified version of Mind Vectors

## Educational Note

This game is good for teaching spatial relationships.

