

# GRYB® Game System Manual

## Overview

### Easy Play-Right-Away Instructions

To get going right away with enough to play a game right now refer to the “GRYB Quick & Easy Game Instructions” on the other side of this manual. Later, you may want a more challenging game. Then read these instructions and create your own version of GRYB.

### The Game Surface

The GRYB Game Surface (*Figure 1*) is based on a structure called a *quaternary tree*. It is named so because it resembles a tree (an upside-down tree). Each colored circle is referred to as a *node*. The root is the node with the name GRYB on it. From there it branches to the four nodes on the one large top *quadrangle*. From each node on this quadrangle, it branches to another four nodes on a quadrangle directly beneath, and encircling the node. It is *quaternary*, meaning that from each node on the tree it branches to four more nodes. At the final level there is no further branching and the nodes are referred to as *leaves*. The root is also referred to as the *head node* (see *Figure 3*).

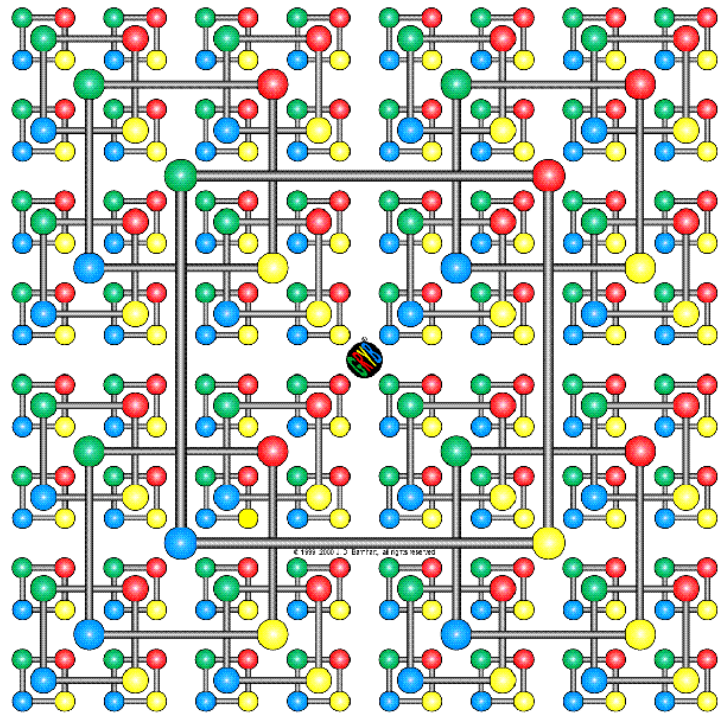


Figure 1. The GRYB Game Surface

### Quadrangles

The quadrangle (see *Figure 2*) is used to organize the game board into recognizable depths and minimize visual confusion. From any one level to the next level, the number of quadrangles is four times that of the previous level. On every quadrangle the nodes have the same colors arranged in the same order.

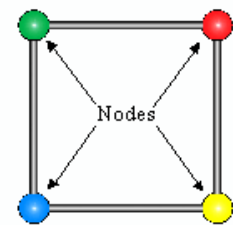


Figure 2. A quadrangle

### Levels

There are four levels of quadrangles. The head node with GRYB on it makes a fifth level in the tree, but it is only one node, not a quadrangle of separate colored nodes.

### Colors of Nodes

The color scheme of nodes is what gives GRYB its name. GRYB is an acronym for *green*, *red*, *yellow*, and *blue*. The cyclical order of these colors is kept the same throughout every quadrangle on every level.

### Optional Components

#### Dice

A four-sided dice piece is given for use in playing GRYB. Each side has either green, red, yellow, or blue on it. This is used to determine moves, thereby introducing an element of chance into the game. There are also ways to play without using the dice. **WARNING: children 3 years old or under should not get their hands on the dice—possible choking hazard!**

## Tokens

The GRYB game surface has been designed to use pennies and dimes as token pieces in game play. Also of use could be candies, nuts, or anything which may sit still and be discernable as two sets of tokens. About twenty five tokens of each of two different varieties should be enough to play most games. **WARNING: Keep the tokens away from kids ages 3 & under—choking hazard!** For those who wish to play with nicer-looking game pieces, sets of glass stones are available for purchase. GRYB stones should be of colors which are discernable from each other as well as from the colors of the GRYB game surface. We include 30 each of orange and purple plastic tokens.

## Bag

GRYB is designed to be a pocket game, however, fabric bags to carry the stones, dice and game-surface are available for purchase.

## Care, Cleaning, and Hygiene

The GRYB game surface is printed on a 100% cotton bandanna. Hand wash, dry flat and use a low-medium iron on non-printed side when still damp to smooth out wrinkles. Only wear clean GRYB game surfaces as you would clean clothing. Practice good mental hygiene.

## Game System

The number of ways to play different games on the GRYB game surface is vast. The basic tree structure of the GRYB game surface is a basic structure like a Chess-Checker board. Below are some of the different parameters for constructing your own game to be played on the GRYB game surface. Then at the end of the list of parameters, a list of some of our original games, from easy to difficult, have been invented for you.

### Traversal of the GRYB Game Surface

Although there are so many ways to play on the GRYB game surface, the way you move on the game surface is basically the same in all GRYB games. There are three ways to move; new moves, vertical moves, or horizontal moves.

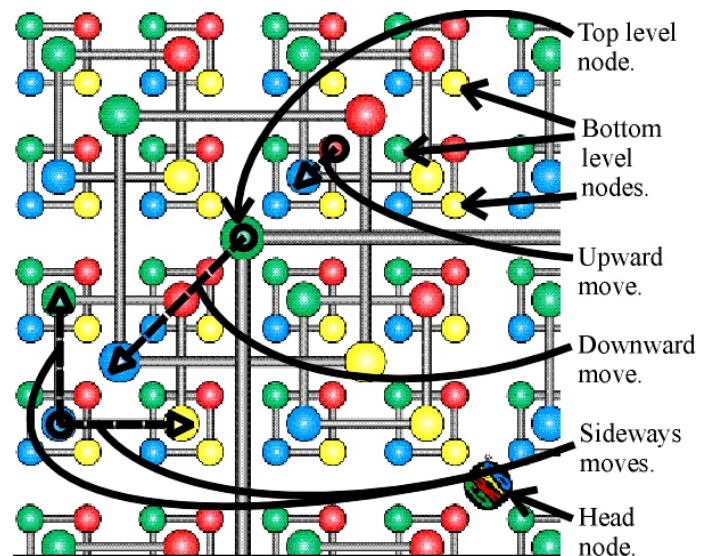
### New Moves

A new move is to introduce a new token into the game. This is done typically either at the top (head node or to a node of the top quadrangle), or at the bottom (a node of the fourth or lowest level). Some ways to play the game require that all the tokens be placed on the game surface prior to starting the game.

### Vertical Moves

Vertical moves are moves between levels downward or upward. One move downward from a node is to any one of the four nodes on the quadrangle on the next level directly below it, and encircling the node you are moving from (see *Figure 3*). Any *leaf* node is at the very bottom and does not have any lower levels to move down to. A downward move has only four different possibilities.

A move upward is the opposite of a move downward. From any one of the four nodes of a lower level quadrangle, a move upward is to the one node onto the next level up, and to the node encircled by the quadrangle you are on. The head node is at the top end of the tree and is the furthest up. A move upward has only one possibility. The parameter *reincarnation* changes these rules slightly.



*Figure 3. Portion of the GRYB Game Surface showing top & bottom nodes, vertical & horizontal moves, and the head node.*

## Horizontal Moves

Horizontal, sideways, or lateral moves are usually made on the same quadrangle. One move may be to a node to either side of the occupied node on the same quadrangle. As in *Figure 3*, there are only two possible sideways moves (on a single level). To move to the opposite node of a quadrangle would take two moves. In multi-level horizontal moves, one of the levels comprising the position is varied to the side. See *Multi-level Moving* for a more detailed explanation.

## Notation of Tokens on Game Surface

For simplicity's sake, notation of token positions uses a top-down path. To refer to the position of a token, use the most direct path of travel, and write down the initial of each color it passes through and ends upon. As in *Figure 4*, the position of symbol ① is **G**. The position of symbol ② is **GBBR**. Symbol ③ is at **GGY** and symbol ④ is at **GR**.

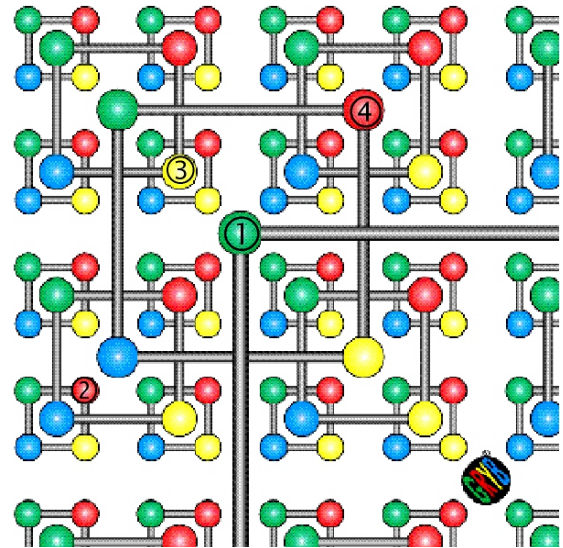
## Parameters of Play

Below are optional parameters you may use to define the way you want to play GRYB. Use the ones you want and discard the ones you don't want to use. As long as all players understand what the parameters are beforehand you can combine them any way you are logically able.

### Goal

The goal in GRYB is to put your tokens covering green, red, yellow, and blue nodes which are connected (and sequential if integrating multiple levels). A winning construct is called a GRYB. A simple example is to occupy all four nodes of a single quadrangle. More difficult to see are multi-level GRYBs; placing tokens on nodes which combine two or more levels.

Also, whether or not you play from the top down or the bottom up is going to determine your final goal. If you are playing from the bottom up your goal would most likely be the top quadrangle. Cover each of the four nodes, and you win. If you play top-down, you could have all of the bottom quadrangles as possible destinations. As well, you could award more points for deeper levels, and have any quadrangle as a winning destination. The example games show more about how this works.



*Figure 4. A portion of the GRYB Game Surface with symbols showing token placement. NOTE: The numbers do not relate consecutive moves.*

### Number of Moves per Turn

You can vary the number of moves per turn. Usually one or two moves per turn are the most workable. But each single move must be as described above in "Traversal of the GRYB Game Surface." With multiple moves per turn, you can either move one token multiple moves or multiple tokens one move per turn.

With multiple moves you must decide whether or not moving one token through an occupied space is permitted.

### Prescribed or Free Moves

Prescribed moves use something like rolling the dice or pulling colors out of a hat to determine where you will move. Free moves do use such a device. With free moves, you may move anywhere you choose within the limits of the rules.

The four-colored dice is provided to determine the color of each move. You would roll the dice to determine the color of the node you will move to unless you use the parameter *residents*. With *residents*, you can determine the color which you move from.

### Multi-Level GRYB

This is where the winning construct or token moves may incorporate more than a single level. This may be the most difficult parameter to incorporate. This parameter is so challenging, there is much discussion about it further on in the game manual under "**Sumo GRYB.**" Once you master this parameter you may proudly wear the title of "GRYBmeister" with all the respect it is due. You have earned it (as well as a few bumps and scrapes from falling down dizzy). Many are content to play

without this parameter ever being introduced, but those brave souls who venture into these deadly waters can surely claim attainment and may proudly wear the GRYB upon his/her crown.

### Headless GRYB

Headless GRYB denotes simply that you not use the head node (the center circle with “GRYB” on it). The top of the game surface begins with the top quadrangle.

### Big & Little Endians

Taken from Gulliver’s Travels, this refers to whether or not the game starts at the top or the bottom of the game board. The top is the little end (1 node) and the bottom is the big end (256 nodes). In Gulliver’s Travels it refers to whether one should crack an egg on the big end or the little end.

### Gravity & Levity

This refers to whether you may go up the tree (levity) or down (gravity). You may have either or both. This is used cooperatively with the *big & little endian* parameters. A variation of this is “push” and “pop.” A push is where a player introduces a token on an upper level and pushes a chain of tokens down a level to nodes of his/her choice. The pop is similar but in the upward direction. Tokens may be pushed off the bottom or popped off the top.

### Lateral Moves

Lateral moves may be made if this is a parameter. Further decide if the moves are *lethal* or not, or perhaps multi-level.

### Residents

This refers to tokens placed in a formation prior to the start of the game, as in Chess, Checkers, or Chinese Checkers.

### Reincarnation

This means that you can move from a leaf node at the bottom to the head node on top as one move. Used mainly with gravity and not levity.

### Token Limits

You can limit the number of tokens in play. This parameter is a good complement to the reincarnation or the space-time warp parameters. With more freedom of movement, you may want to restrict the number of tokens in play. Common numbers are from ten to twenty tokens each.

### Lethal Encounters

This parameter means that you may replace your opponents token with one of your own when you land on their occupied node. You may want to restrict this parameter to only vertical or horizontal moves. One variation is using an additional die roll or coin flip to determine the outcome of a battle between two opponents.

### Teams

Instead of playing one player against another, play in two teams of players. Devise your own rules about discussion among team members about moves.

### Invent Your Own Parameters and Game Rules

If you find a different way of playing that uses a parameter not described above, please do so. There are many games that this basic game-surface design could support. If you have one that you think would be very popular, tell us about it at: <http://www.jdbgames.com/gryb/submtgr.htm>, and we may decide to publish it and credit the idea to you. Following in the section “*Game Examples*” are some games that we have devised for you to try. They vary in complexity beginning with the easiest first.

## Game Examples

### Quick & Easy GRYB

One of the simplest games to play on the GRYB game surface, this one uses the colored dice (see “Optional Components”).

**To play** follow the instructions on the page at the end of this manual titled “GRYB Quick & Easy Game Instructions.” Parameters used this game are: Little Endians, Gravity, Headless GRYB, Prescribed Moves, One-move-per-turn, and Lethal Horizontal Encounters.

### ‘Drangles

Short for Quadrangles, ‘Drangles is basic single-level GRYB. Players alternate turns making two moves per turn. Move one token twice or two tokens once. Tokens may only be introduced through the head node (the only first move). Subsequent moves for any token on the game surface must either be downward to an unoccupied node, or horizontal to an unoccupied node. You may move through an occupied node with your first move if there is an unoccupied node to land on past it with your second move. The object of the game is to get four of your tokens covering all four nodes of any one quadrangle. Different numbers of points are awarded for different level quadrangles. See “Scoring GRYB” for more information. Parameters include Free Moves, Little Endians, Gravity, Lateral Moves, and Two-moves-per-turn.

### Sumo GRYB

This game is like ‘Drangles except that this game uses **multi-level GRYBs**. In multiple-level GRYB, a GRYB consists of **four of your own tokens arranged so that they sit in a cyclical sequence, each on a different color; Green, Red, Yellow, and Blue; on one or more levels.** Any level incorporated must have each token on this sequence of colors. Otherwise, each token must sit on the same color on that level. The clockwise or counterclockwise sequence of colors must be one specified in “EQUIVALENTS to GRYB” below. If you start at any one point of a GRYB and move through the other points in a clockwise or counterclockwise motion, the order of nodes for each level incorporated spells an equivalent. **EQUIVALENTS to GRYB: GRYB, RYBG, YBGR, BGRY, GBYR, BYRG, YRGB, RGBY.**

Single-level GRYBs are on quadrangles and are relatively easy to spot. When you integrate more than one level into one GRYB, the game becomes more challenging.

Figure 5 contains some examples of GRYBs integrating two levels. In this figure, level one is integrated with each of the other levels.

The table below shows the levels integrated and the positions of tokens in each GRYB in Figure 5:

Level Combination	Token Notation
<b>A:</b> 1 <sup>st</sup> & 2 <sup>nd</sup> levels	GR, RY, YB, BG
<b>B:</b> 1 <sup>st</sup> & 3 <sup>rd</sup> levels	GGY, RGR, YGG, BGB
<b>C:</b> 1 <sup>st</sup> & 4 <sup>th</sup> levels	GYGG, RYGR, YYGY, BYGB

Notice that in GRYB B the second level is always the same color. Similarly, in GRYB C the second and third levels have the same color represented.

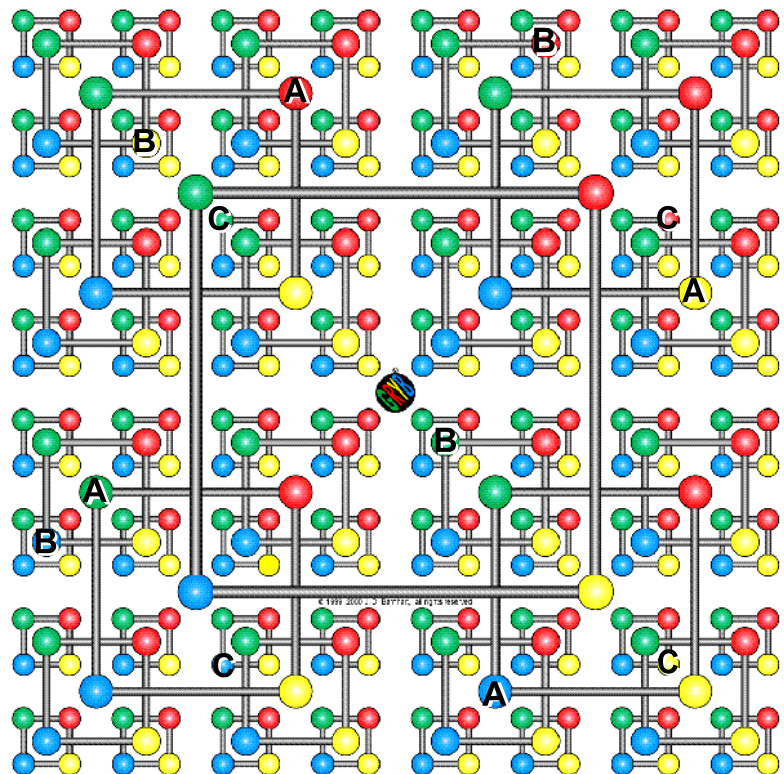


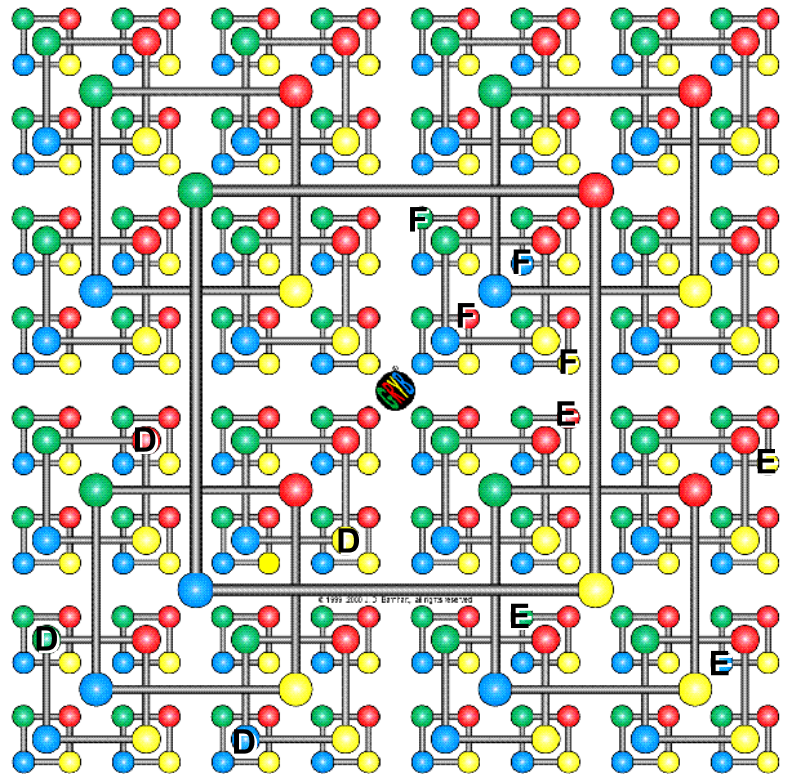
Figure 5. The GRYB Game Surface and multiple-level GRYBs integrating the first level with another level.

**Figure 6** shows the integration of two levels without integrating the first level. Notice that each GRYB is under one top node. This is because the level one color is the same for each point on a GRYB. It should also be noted that other levels not integrated into a GRYB also have the same color represented throughout the GRYB. For instance, in GRYB “E” the level-3 color is always red.

Also important is the cyclical nature of each GRYB within the levels represented. In moving through a GRYB’s points going clockwise or counterclockwise, the colors always move incrementally—**not skipping colors**, but always spelling a “GRYB EQUIVALENT.” (See above.)

The levels represented and token notation for the GRYBs in **Figure 6** are in the table below:

Level Combination	Token Notation
<b>D:</b> 2 <sup>nd</sup> & 3 <sup>rd</sup> levels	BGR, BRY, BYB, BBG
<b>E:</b> 2 <sup>nd</sup> & 4 <sup>th</sup> levels	YGRR, YRRY, YYRB, YBRG
<b>F:</b> 3 <sup>rd</sup> & 4 <sup>th</sup> levels	RBGG, RBRB, RBYY, RBBR

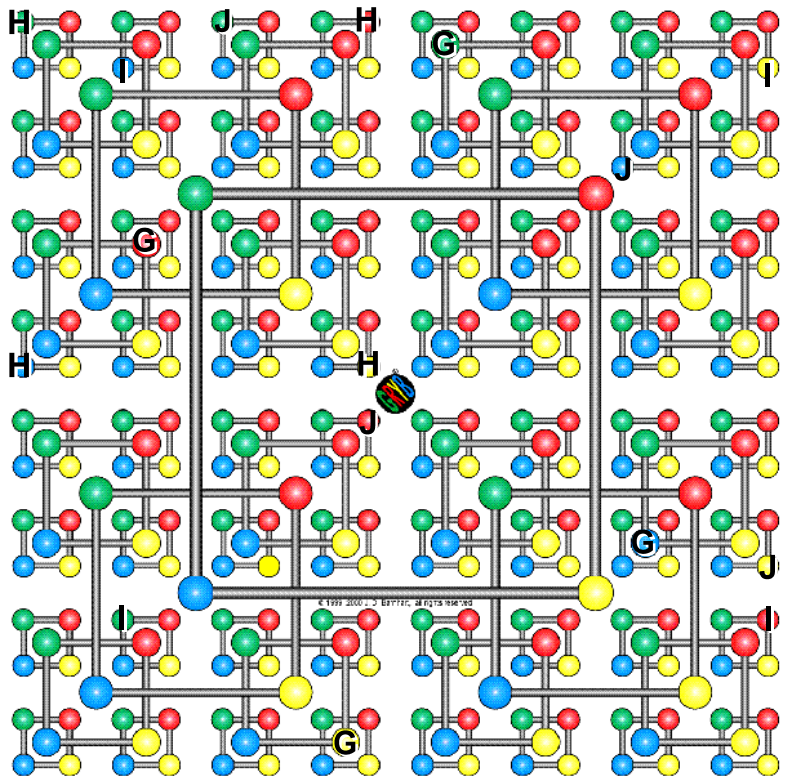


**Figure 6.** The GRYB Game Surface and multiple-level GRYBs integrating two levels of the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> levels.

**Figure 7** shows GRYBs integrating three different levels. From the chart below, find the token location in **Figure 7**:

Level Combination	Token Notation
<b>G:</b> 1 <sup>st</sup> , 2 <sup>nd</sup> , & 3 <sup>rd</sup> levels	GBR, RGG, YRB, BYY
<b>H:</b> 2 <sup>nd</sup> , 3 <sup>rd</sup> , & 4 <sup>th</sup> levels	GGGG, GRRR, YYYY, GBBB
<b>I:</b> 1 <sup>st</sup> , 2 <sup>nd</sup> , & 4 <sup>th</sup> levels	GGRB, RRRY, YYRR, BBRG
<b>J:</b> 1 <sup>st</sup> , 3 <sup>rd</sup> , & 4 <sup>th</sup> levels	GRGG, RRBB, YRYR, BRRR

Notice that within each level incorporated into a GRYB, the cycle of colors is intact. As with double-level GRYBs, the levels not integrated are represented by a single color. An example is in GRYB “I;” the 3<sup>rd</sup> level color is always red while the incorporated levels cycle through adjacent colors. Also note that as you cycle through the points, the colors always spell a “GRYB EQUIVALENT” on each level incorporated. If adjacent tokens skip to opposing colors on any level, the points will not construe a valid GRYB.



**Figure 7.** The GRYB Game Surface and multiple-level GRYBs integrating three levels.

In *Figure 8* two different GRYBs are shown. GRYB “K” is an example of a GRYB integrating all four levels. GRYB “L” shows a 2<sup>nd</sup>-level-only GRYB. The table below contains the levels integrated and the point locations:

Level Combination	Token Notation
<b>K:</b> All four levels	GRYR, RGBG, YBGB, BYRY
<b>L:</b> 2 <sup>nd</sup> level only	GGBR, GRBR, GYBR, GBBR

Check to see that it has each level integrated correctly. An alternative method to using the table of GRYB equivalents is to find the green node of the level you wish to check, and visually trace through the other points of the GRYB clockwise or counterclockwise locating the red node of the same level next. Then continuing in the same direction you should find the yellow and then the blue nodes in that order following. For example: GRYB “K” starting with level 1 we find the top left point “GRYR” under the green level-1 node. Moving clockwise on the same level (1) we find the red node and the next point “RGBG” under that. On clockwise to the next point we find “YBGB” under the yellow 1<sup>st</sup> level node, and last the point “BYRY” is under the blue node. We find that “K” satisfies the requirement for the 1<sup>st</sup> level. Go to level 2 next. We find the point “RGBG” is under the green level-2 node. This time we find that the red level-2 node is counterclockwise from the green, and under it we find “GRYR.” Look counterclockwise again and find the next point “BYRY,” and last “YBGB.” The 2<sup>nd</sup>-level GRYB is valid. You can trace through the third level: “YBGB,” clockwise to “BYRY,” clockwise to “GRYR,” and finally clockwise to “RGBG.” The fourth level goes counterclockwise through “RGBG,” “GRYR,” “BYRY,” and “YBGB.” Once you have this technique learned, you need never refer to the “EQUIVALENTS to GRYB” chart again, except perhaps to prove that you have a valid GRYB to all concerned as described in the section below: “Multi-level GRYB Checking and Scoring.”

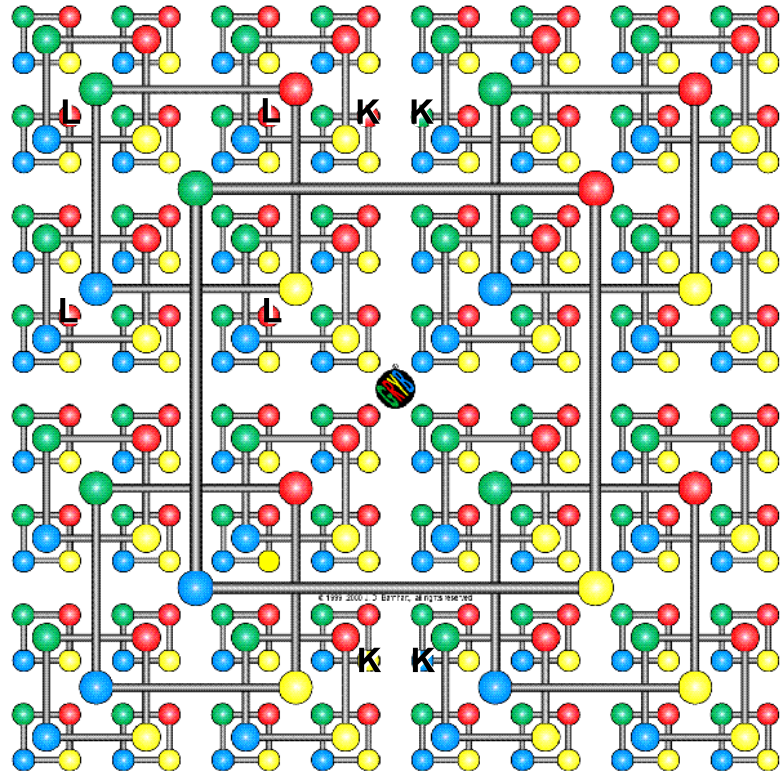
GRYB “L” is only a 2<sup>nd</sup>-level GRYB even though it resides on the deepest level. In looking closely at it, you see that every level except level 2 is showing the same color on that level.

**Multi-level Moving**

When this parameter is incorporated, a token is able to make a sideways move by varying any of its descriptive nodes to the side. A *descriptive* node is the node on each level that is used in notation of the token. As an example, in GRYB “L” above, the second descriptive node is varied and all others are the same. With multi-level moving, a token sitting on one of the spots in “L” would be able to move to one of other “L” spots to the side of it by varying the second level descriptive node to a color to the side.

For an example, if you were on node “GRBR,” you could move there from “BRBR” or “RRBR,” or move there from “GGBR” or “GYBR,” or move there from “GRYR” or “GRGR.” Varying the last level is a normal sideways move.

For an example of a game using this see “25 Men’s GRYB” in the player’s games area on the JDB Games web site. Go to this link in your browser: <http://www.jdbgames.com/gryb/pgrules.htm>.



*Figure 8. The GRYB Game Surface and two GRYBs; one integrating all levels (K) and one on a single level (L).*

## Scoring GRYB

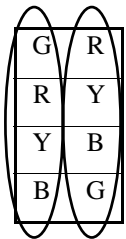
Some GRYB games are just played win or lose. However, for a series of games played, a method of scoring has been developed. In scoring GRYBs, a convention of using different points for different levels is incorporated. Whether the points awarded are highest at the top or bottom level depends upon which end you start the game. For each level the corresponding point award is listed below:

- Starting level GRYBs 1 point
- Next to starting level GRYBs 2 points
- Next to furthest level GRYBs 4 points
- Furthest level GRYBs 8 points

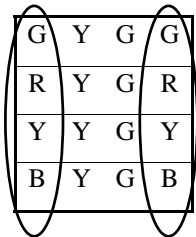
Scoring multi-level GRYBs is done simply adding the point values for each level **incorporated** into the GRYB. Levels in which the nodes are of the same color are not incorporated. To check and score a multi-level GRYB use the following procedure to make certain you have a valid GRYB.

### Multi-level GRYB Checking and Scoring

GRYBs which combine levels get the number of points for each level added together. GRYB values range from 1 to 15 points. Looking at four of the GRYBs in *Figures 5-8*, the method for assessing points is shown below:

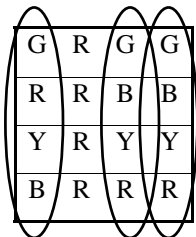


**GRYB A:** Starting with any of the tokens in the GRYB, write down the notation for the token. Proceed clockwise to the next token in the GRYB and repeat the process. Write the results under the results of the first token. After you are finished writing the four positions down, see if the *columns* spell a GRYB equivalent. If so, that level has a GRYB. GRYB “A” has GRYBs on levels 1 and 2. This is a 3-point GRYB. Add 1 point from level 1 and 2 points from level 2.

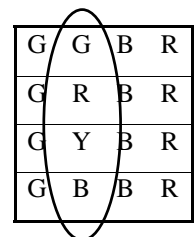


**GRYB C:** There are deeper levels in GRYB “C.” Looking at the chart on the left, you see that the two center *columns* have the same color represented for each level. On these levels there are no GRYBs. GRYB “C” has GRYBs on levels 1 and 4. This is a 9-point GRYB; level 1 - 1 point, level 4 - 8 points.

**NOTE:** If the *columns* do not either have the same color or a GRYB equivalent, the positions do not qualify as a valid GRYB.



**GRYB J:** Although all four levels are incorporated in this GRYB, the same color exists through level 2. Levels 1, 3, and 4 each have equivalents of GRYB. Level 1 has a clockwise cycle, and levels 3 and 4 have counter-clockwise cycles represented. GRYB “J” is worth 1 + 4 + 8 or 13 points.



**GRYB L:** Although all four levels are incorporated in GRYB “L,” the only GRYB is on level 2. The same color is in each of the other three levels, so this does represent a legal GRYB. It is only worth 2 points. With the same number of moves, a 15 point GRYB could have been built. *This would not be a winning construct in the “Drangles” version of the game even though it is a single-level GRYB. Because the tokens are not all on one quadrangle, it would not count.*



Below are different methods used to score a series of games:

### Set Number of Games

With this method, the players set an arbitrary number of games to play and accumulate points scored in each game. The winner after X number of games has the most points.

### Set Amount of Time

This method determines that the winner is the one who has accumulated the most points for all games played within a set amount of time. If a game is being played when the time is up, there are no points scored for that game.

### Set Number of Points

With this method of scoring, a number of points is set as a goal and the first to reach that number of points is the winner.

### ***Reward and Punishment***

Decide who will wear the GRYB game surface out for a soda. If everyone likes the appearance, it is a reward for the winner, if nobody would be caught dead wearing the thing, it would make a nice punishment for the loser. In any case, think of the fun and embarrassment possibilities in utilizing public display of the GRYB game surface upon someone's head. Some people may like to look like Ronald McBiker, others may not. However, if the winner of the game set is a brilliant player, and beats everyone all the time, it is imperative that he/she wear it out in public to show humility.

## Notes

# GRYB<sup>®</sup> Quick & Easy Game Instructions

## The GRYB Game Surface

The color scheme is what gives GRYB its name. GRYB is an acronym for *green*, *red*, *yellow*, and *blue*. Each colored circle is referred to as a *node*. At the top of the game surface is one large *quadrangle* (see *Figure 1*). From each node on this top quadrangle, it “branches” to another four nodes on a quadrangle directly beneath, and encircling the node. There are four levels of quadrangles. Each successive level down contains more quadrangles than the previous level.

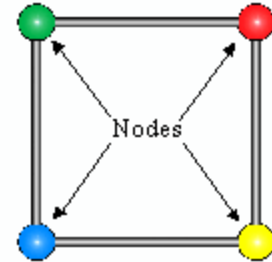


Figure 1. A quadrangle

## Tokens

The GRYB game surface has been designed to use pennies and dimes as token pieces in game play. One person uses pennies and the other uses dimes. About twenty to thirty tokens of each should be enough to play. **WARNING: Keep small parts away from kids age 3 & under—possible choking hazard!**

## To Play

Two players alternate turns rolling the dice and making one move onto a node of the same color rolled per turn. Each move you must either place a new token, move a token down, or take a token sideways if you can (see “**Legal Moves in EZ GRYB**” below). If you are not able to move, you must pass your turn. The object is to cover all four nodes on any quadrangle to win. This is called getting a “GRYB.” Deeper level GRYBs are worth double the number of points of the level directly above. Top level GRYBs are worth one point, next level—two points, next level—four points, and bottom level—eight points. Play for highest number of points out of three games, or first to reach eight points to decide a series.

## Legal Moves in EZ GRYB

### New Moves

A new move is to introduce a new token into the game. After the dice roll, you may move to an unoccupied node of the same color rolled, on the top quadrangle (see *Figure 2*). New moves must start only at the top level.

### Downward Moves

A move down is from a node of an upper level quadrangle, onto an unoccupied node the next level down on the quadrangle encircling the node you are moving from (see *Figure 2*). The color of node you move to must be the same as the one just rolled on the dice at the beginning of the turn. There are no more downward moves past a node on a bottom level quadrangle.

### Sideways Moves

Sideways moves are made only on the same quadrangle and only to replace an opponent’s token. A sideways move may be to a node to either side, on the same quadrangle, as in *Figure 2*. Again, the color of node you move to must be the same as the one you just rolled on the dice at the beginning of the turn. Your opponent’s token must be on the node you are moving to, his/her token is removed and replaced by your token.

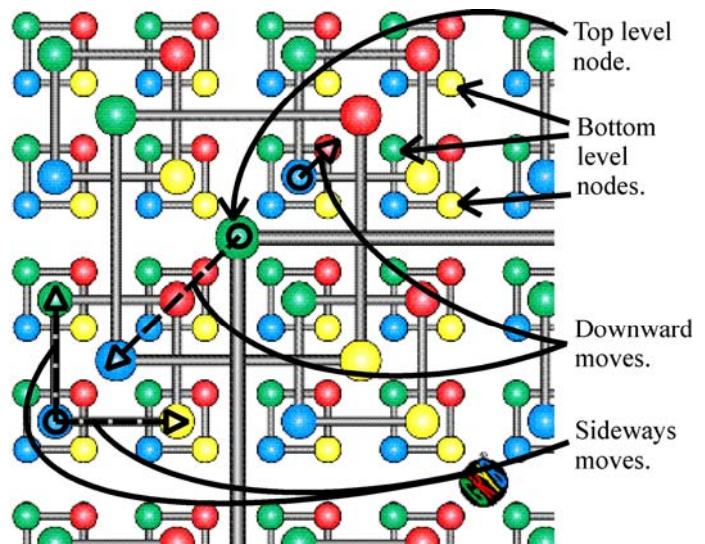


Figure 2. A portion of the GRYB game surface showing top & bottom level nodes, and downward & sideways moves.