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Big Fly Publishing Ohio

**PrismaPixels** 

# Solving Multi-Colored Pixel Puzzles

### Getting Started

Each pixel puzzle will have numbers to the side and the top that give clues about which and how many boxes to color in. When all the boxes are colored in correctly, the result will be a recognizable picture. There are some simple rules to follow in working these puzzles to reveal the final picture. There are also many ways to use those rules, so we've given step-by-step examples below to show you some of the ways to go about it.

#### Rules

1. The numbers to the side and top of the blank puzzle grid – even if the grid shape is not rectangular – represent the number of consecutively colored boxes of the same color in that row or column.

2. The colored boxes and groups of boxes occur in the same order as the numbers.

3. There must be at least one blank box between two sections of same-colored boxes.

4. There may or may not be one or more blank boxes between two sections of different-colored boxes.

#### Basic Tips

1. Start by looking for the largest single number in a row or column. In row 5 of the example puzzle (see page 9) we must color a section of 10 consecutive yellow boxes, and there are only 10 boxes in the row, so all boxes will be colored.



A single number that is more than half the total of a row or column must have some colored boxes in the middle. In this example we need to place 8 consecutive yellow boxes across a row of 10 boxes. Consider the left-most and right-most cases, and then color where they overlap (shown below by the numbers both above and below the grid). As shown below, we have counted 8 boxes from the left and 8 boxes from the right, finding that the middle 6 boxes will be colored in each case – this is the overlapping area.

	1	2	3	4	5	6	7	8		
8										
			8	7	6	5	4	3	2	1

2. When there are two or more groups of same-colored boxes, there must be at least one blank box between groups of the same color. (Eventually, when you are certain that a box cannot be colored in but must be left blank, you will want to show this by putting a dot, an X, or some other indicator in this box.) In this example, 2 of the 3 boxes in the first group overlap, 1 of the 2 in the second group overlap, and 1 of the 2 in the third group overlap, so these may be colored.

			1	2	3	-	1	2	-	1	2	
3	2	2										
				3	2	1	-	2	1	-	2	1

3. When there are two or more groups of different-colored boxes, there may or may not be a blank box between the groups. In this example, 2 of the 3 yellow boxes in the first group overlap, 2 of the 3 red boxes in the second group overlap, and 2 of the 3 yellow boxes in the third group overlap, so these may be colored accordingly.

			1	2	3	1	2	3	1	2	3	
3	3	3										
				3	2	1	3	2	1	3	2	1

4. As you continue to solve, you can use the boxes you've already colored to give clues about other color groups. In the example below, one box in the row is already colored because of a previously colored column area. The colored box is part of a group of 6 colored boxes. Considering the count from the left, you can color in an additional 3 boxes (indicated in lighter yellow).

Also, you can determine blank boxes in this same example. Four colored boxes are already marked, and these are part of a section of 6 boxes. If only 2 more boxes are needed to complete the 6 colored boxes, then the remainder of the boxes to the right can be marked with an X to denote a blank space.

	1	2	3	4	5	6				
6									х	х
			1	2	3	4	5	6		

We will now walk you step by step through a sample puzzle to show how all the rules and tips can be put to use.

### Solving an Example



This is what a puzzle will look like before beginning. There are numbers in colored boxes to the side and top of a blank grid. Follow the steps below to see how we work a puzzle from beginning to end.



1. Look for the largest numbers and, using basic tip #1, color in the squares. Since this puzzle is 10x10, and there is a number 10 in row 5, the entire row can be colored.

2. Using the second part of basic tip #1, color rows 1, 2, and 10.

3. Using boxes that already have color, solve columns 1, 2, 5, 6, 9 and 10. Thanks to the yellow boxes in columns 5 and 6, we were able to color our first red boxes. Since a red box group can be directly next to a yellow box group, we cannot assume a blank box to either side of the red box group in row 9.

4. Returning to solving rows, we can now place an X in some boxes to block off boxes that cannot be colored as in rows 3 and 4.

5. Returning to columns, because of the blank boxes we marked in step 4, we can now finish columns 4 and 7.



2 2 2

2 2 2





6



- 8. Solution



3 8

×

х

1 1 2

×

х

2 3 8

6

×

2 1

3 2 1 1

2 2 2

2 2 2

6. In rows 1 and 10 we can now mark more blank boxes. Then we can finish rows 6, 7, 8 and 9. (You may have noticed that rows 6 and 7 could have been completed from the beginning since each one has numbers adding to exactly 10. Rows and columns may be worked in any order you like.)

7. Jumping back and forth between columns and rows, the puzzle may be finished to arrive at the completed puzzle as in figure #8.

## Another Example

There are two situations you may encounter that are not specifically covered in the first example and may be a little more challenging. These are: solving a puzzle that is not shaped like a square or rectangle, and solving a puzzle where counting alone will not solve it and you must then rely on color placement. A sample follows that illustrates both situations.



The reason for making a puzzle L-shaped is to save the solver from having to mark excessive amounts of blank space. As in square puzzles, the numbers along the top correspond with the boxes below them, whether they are at the top as in columns 1-5, or further down as in columns 6-10.

In this example, there is no number that is bigger than half the boxes in its row or column. So it might seem like the puzzle is impossible to start. But if we focus instead on color, we see that there are two small, distinct areas of gold - one in the upper left and one on the right.

There are several ways to start this kind of puzzle, and two methods are shown below:



Since the uppermost section of the puzzle is only half the width, try starting there. The top three rows of gold boxes can only fall in the first three columns, because Columns 4 and 5 do not contain any

Method 2 1 2 × × × 2 x x хx х 2 х х х x x × х ×

Sometimes finding blank spaces makes beginning this type of puzzle simpler. In columns 1, 2, 9 and 10 where only gold is shown in the clues, X's can be placed in the rows that only contain green, or begin

with green in their clues. And for the same reason, the X's can be place in columns 4 and 5. Now we can see the available spaces for color boxes.

fill i	n Z	K's	wł	ner	e n	io g	gola	ds	ca	n	go.	Yo	ou	ca	n	do	) t	he
sam	e w	vitł	n tl	ne s	sec	tio	n o	of g	gol	d	on	the	e r	igł	nt	as	W	ell.
	_	_	_	_	_	_		_	_	_								
			2				_		_	_	4	Th	e	co	m	ple	ete	ed j

				2							
		1	2	2	4	3					
	1	х	х		х	х					
	2	×			х	×					
2	1				х	х					
	2	×	х			х					
	1	×	х	х		х	2	1	1	2	1
1	1	×	х	х		х	х	х	х		х
2	2	×	х	х			х	х	х		
1	1	×	×	х	х		×	х		х	x
	3	х	х	х	х				х	х	X
	1	х	X	x	X	X		х	X	X	×

d puzzle.