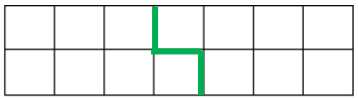
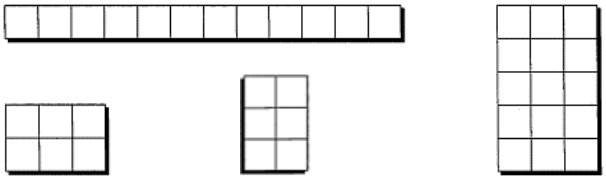
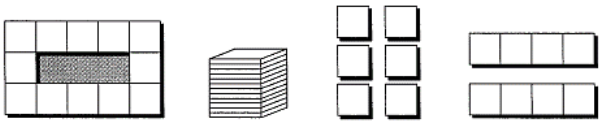
First Name: _____	**Last Name:** _____	**Grade:** _____
Teacher: _____	**Parent's email:** _____	

Organized List

Welcome to Math Challenge #13. Many of the math problems presented in this challenge can be solved by making an organized list or chart. By using this strategy, we have the opportunity to discover relationships and patterns within the data or information, facilitating a more straightforward problem-solving process. This method proves particularly useful when dealing with problems that may have multiple solutions. Furthermore, documenting our thought process in a well-structured list simplifies the review of completed steps and helps identify any remaining necessary actions. Some problems are challenging, so ask for help if needed.

Kinder & First Grade: solve <u>at least</u> 3 problems.
Second & Third Grade: solve <u>at least</u> 7 problems.
Fourth Grade and above: solve <u>at least</u> 12 problems.

		Answer
1.	How many different ways can you arrange the following three stuffed animals in a straight line? 	
2.	Lauren has two dogs and they are similar in size. She buys a blue and a red collar for her dogs. How many individual photos can she take of her dogs with these two different collars?	
3.	How many two-digit numbers can you create using the following number cards? 4 5 6	
4.	Five friends are buying pizza together and they are planning to split the check equally. After the pizza was ordered, one of the friends had to leave suddenly, before the pizza arrived. Everyone who stayed for the pizza had to pay $1 extra as a result. How much was the total bill?	
5.	There are 36 children participating at a chess tournament. The tournament consist of 3 rounds (Preliminary, Semifinal, and Final). In each round, half of the participants are eliminated. After the Simifinal round, how many participants are left to compete in the Final round?	

6.	The following diagram shows that 14 can be divided into 2 equal odd numbers. How many two-digit numbers larger than 14 but less than 50, which can also be divided into 2 equal odd numbers? 	
7.	The following are examples of unique rectangular regions:  These ones are not rectangular regions:  How many possible unique rectangular regions you can create using exactly 12 tiles?	
8.	During a math festival, the organizer decided to distribute 180 gift bags to students. Each bag contains 3 pencils, 2 erasers, and a notebook. How many pencils, erasers, and notebooks, respectively, are needed (in total) for all the gift bags?	
9.	A total of fifty-four of the students in Ms. Borseth's class and Ms. Hein's class voted in the election for student council representative. • Mariah received 1/6 of the votes. • Joanne and Paul each received 1/18 of the votes. • Suzanne received 4 times as many votes as Joanne. • Bane received 1 more vote than 1/9 of the votes. • Zach received the rest of the votes. Name the 3 people (in order) who received the most votes.	
10.	There were eight runners on each relay-race team. The first team member ran 360 meters. Each team members ran 25 meters less than the runner before. How many meters did the last team member run in the relay race?	
11.	Jessie takes up jogging as her form of exercise. She jogs daily in their barangay auditorium. On the first week, she jogs for 15 minutes per day, on the second week she jogs for 20 minutes per day. Each week, she wants to increase her jogging time by 5 minutes per day. If she jogs six days each week, what will be her total jogging time on the sixth week?	

12.	At a sports store, Cameron bought some baseball card packs and some T-shirts. The baseball card packs cost $3 each and the T-shirts cost $8 each. If Cameron spent $30, how many baseball card packs and how many T-shirts did he buy?	

13.	John built two towers using cubes. Use the following clues to find out the heights of the two towers he built. • The average height of the two towers is 12 ½. • The height of the smaller column is a prime number. • The difference between the height of the taller tower and the height of the smaller tower is three times the height of the smaller tower.	

14.	How many prime numbers between 0 and 120 have a unit's digit of 7?	

15.	Palindrome years (like 1991 and 2002) read the same forwards and backwards. The year 2002 was the first palindrome year of the third millennium. The year 2992 will be the last palindrome year of the third millennium. How many palindrome years are there, altogether, in the third millennium?	

16.	The school chess club has 16 members. They want to organize a mini chess tournament where each member plays against every other member exactly once. How many matches need to be played in total?	

17.	Trisha is a cheerleader and has a drawer that contains four colors of poms. Ninety are gold, 70 are green, 50 are blue, and 40 are red. She randomly pulls out poms, one at a time, without looking at the colors. What is the fewest number of poms Trisha must remove to be certain that she has at least 5 pairs of matching poms?	

18.	The number of different arrangements of 5 letters (ABCDE) is 120. This is calculated by first finding out that there are 5 choices to place a letter in the first position, 4 choices to place a letter in the second position, 3 choices to place a letter in the third position, and so on. Then when you multiply these numbers, you get 5*4*3*2*1 = 120. There are 120 different arrangements of the five letters in the word ANGLE. If all 120 are listed in alphabetical order starting with AEGLN and finishing with NLGEA, which position in the list does ANGLE occupy?	