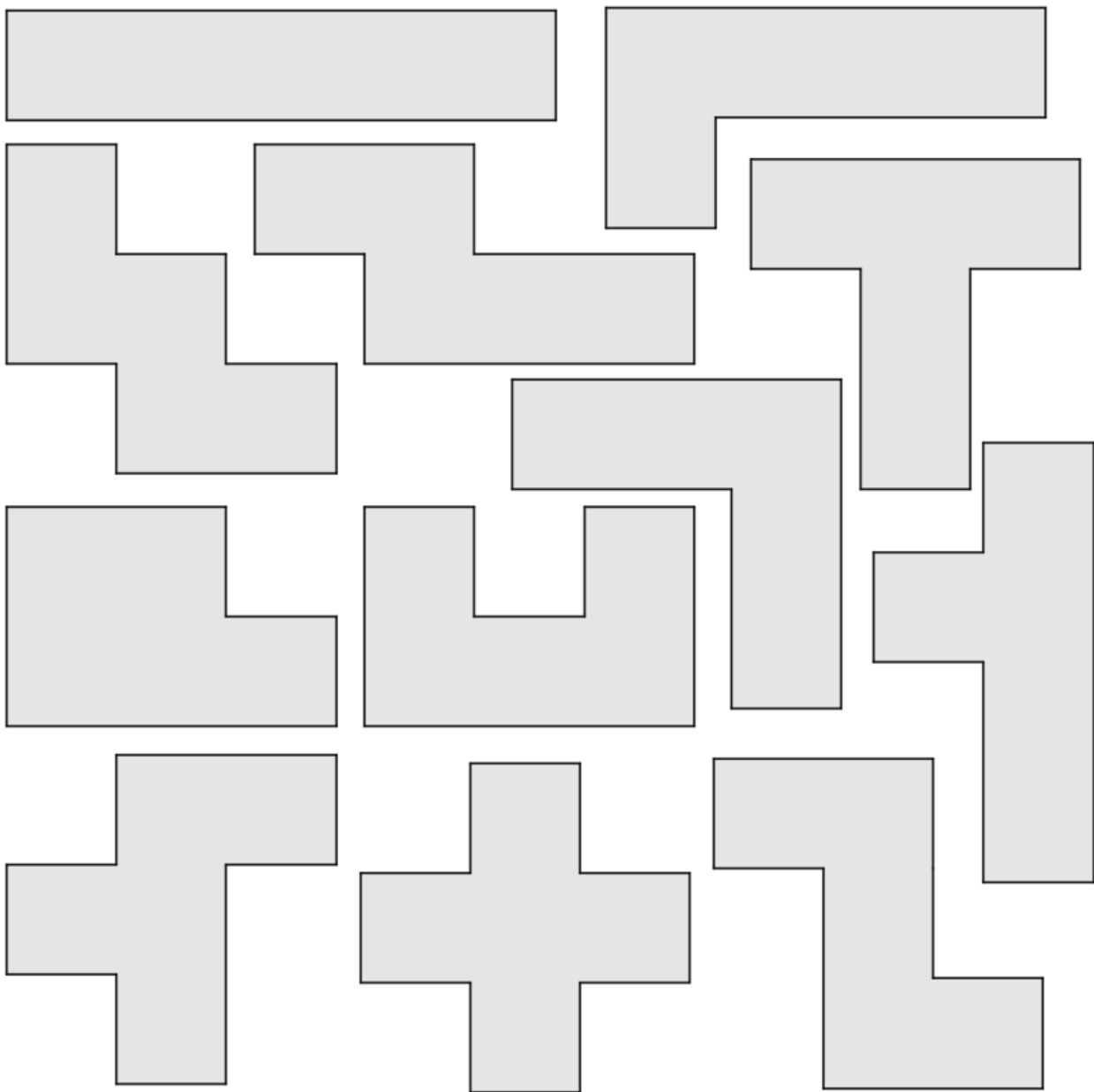




Weekly Challenge #9: Geometric Puzzling

Welcome to the Count on Us Secondary Challenge's ninth weekly challenge. This the second set from the two rounds we had in the first years of the challenge but were removed because teams just got too good at them! Can you do them all? Solutions will NOT be provided! You must never show anyone else how to solve a puzzle!

















1. Pentominoes

Print onto card as thick as possible cut out with a sharp knife.



Make a pentomino rectangle 7x5	Make a pentomino rectangle 8x5 ②	Make a square out of pentominoes	Make a 4x15 rectangle with 12 pentominoes ③
Make a 6x5 rectangle with 6 pentominoes	Make a 7x5 rectangle with 7 pentominoes	Make a 8x5 rectangle with 8 pentominoes ②	Use 4 pentominoes to make a double sized: 
Make a 9x5 rectangle with 9 pentominoes ②	Make a 10x5 rectangle with 10 pentominoes ②	Make an 11x5 rectangle with 11 pentominoes ③	Use 4 pentominoes to make a double sized: 
Make a 12x5 rectangle with 12 pentominoes ③	Make a 10x3 rectangle with 6 pentominoes ②	Make a 15x3 rectangle with 12 pentominoes ③	Make any rectangle using 7 pentominoes

These are the pentomino puzzle cards from the 2018 finals. The numbers in the circle show harder cards. 2 was worth twice and 3 three times the number of points of those without a number.

Use 4 pentominoes to make a double sized: 	Make any rectangle with 6 pentominoes	Make any rectangle with 8 pentominoes ②	Make a 20x3 rectangle with 12 pentominoes ③	Make a 4x10 rectangle with 8 pentominoes ③
Use 9 pentominoes to make a triple sized: 	Use 9 pentominoes to make a triple sized: 	Use 9 pentominoes to make a triple sized: 	Use 4 pentominoes to make a double sized: 	Use 4 pentominoes to make a double sized: 
Use 9 pentominoes to make a triple sized: 	Use 9 pentominoes to make a triple sized: 	Use 9 pentominoes to make a triple sized: 	Use 4 pentominoes to make a double sized: 	Use 4 pentominoes to make a double sized: 
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2. Domino Puzzles

You will need a set of dominoes or make your own from the cut out sheet.
Choose dominoes from the set to make these arrangements.

Example

2	6
2	6

Solution

•	•••••
•	•••••

Hint: it cannot be the other way, because that would use two copies of the 2,6 domino and there is only one of each in the set!

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

6	6		6
5	5	2	2
5	2	3	6
1	1	3	3

	2	1	5
5	5	3	2
1	1	5	2
4	2	4	

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

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

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

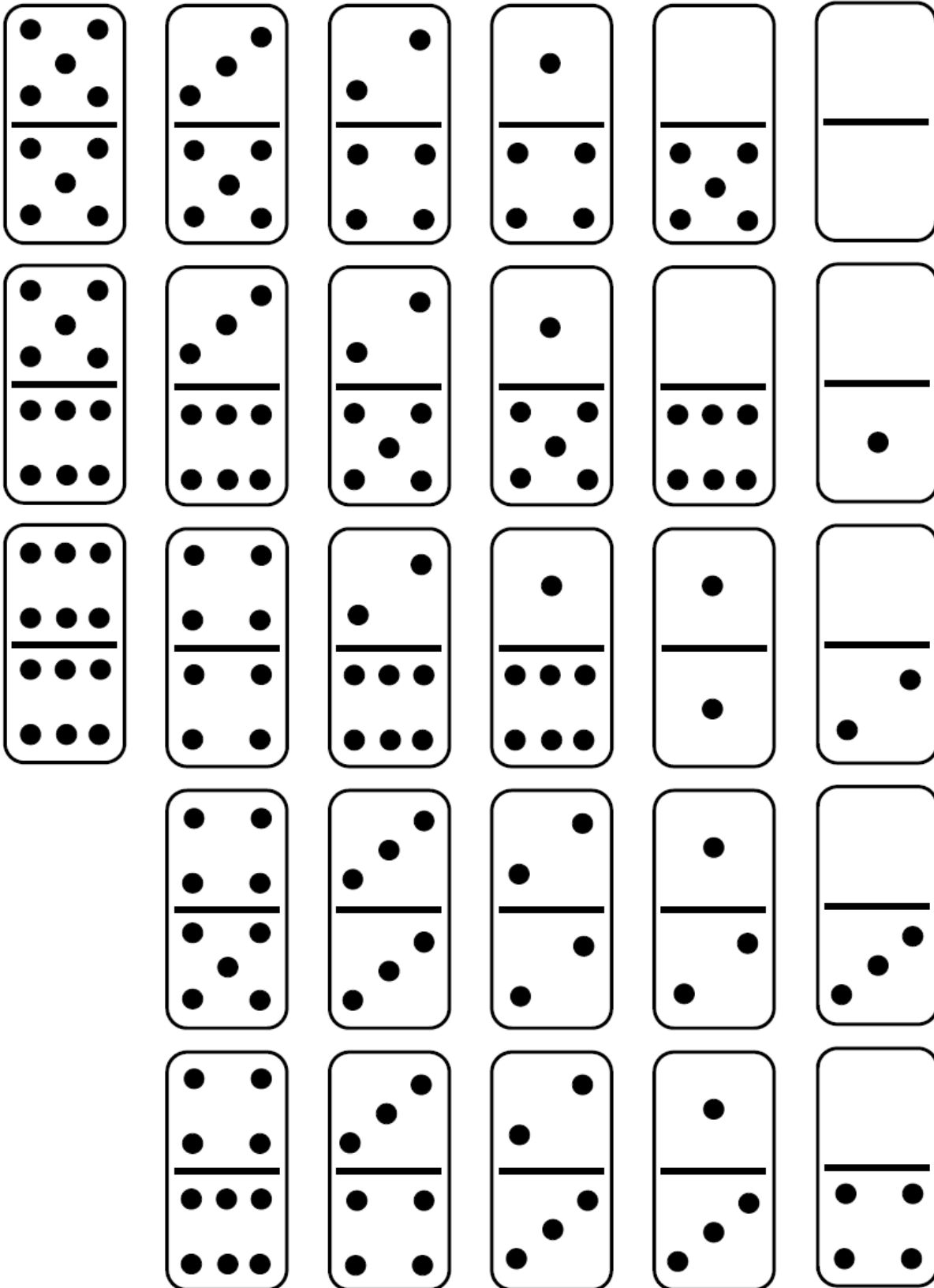
6	6	1	1
2	6		1
2	1	5	6
			2
2	5	2	4

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

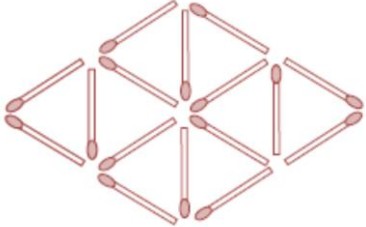
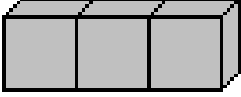
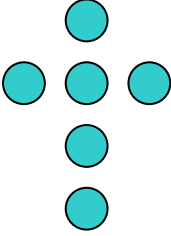
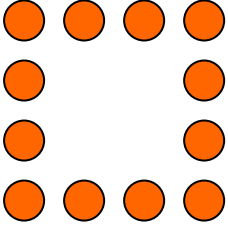
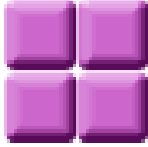

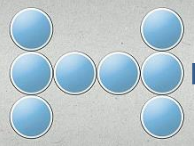
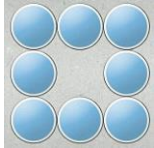
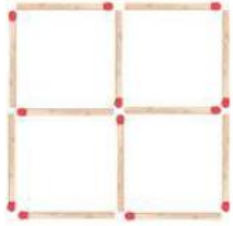
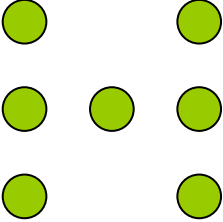

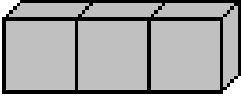
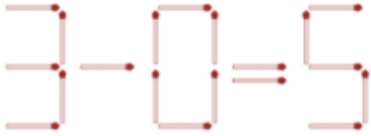
2	2	6	3
3	2	1	
5		4	5
2		6	5
		5	6

Domino Set Cut Out Sheet

Print onto card as thick as possible Cut out with a sharp knife.

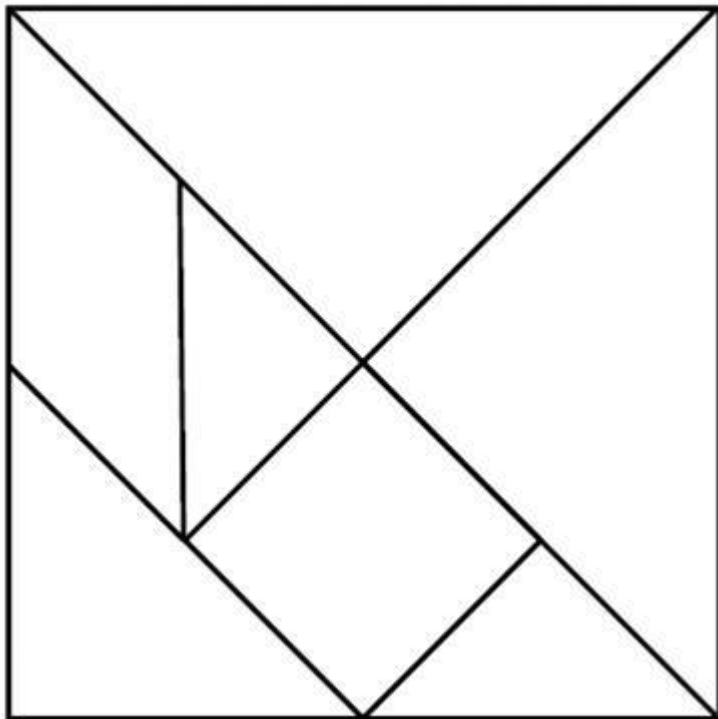


3. Counters, Dice and Matchstick Puzzle Practice Cards

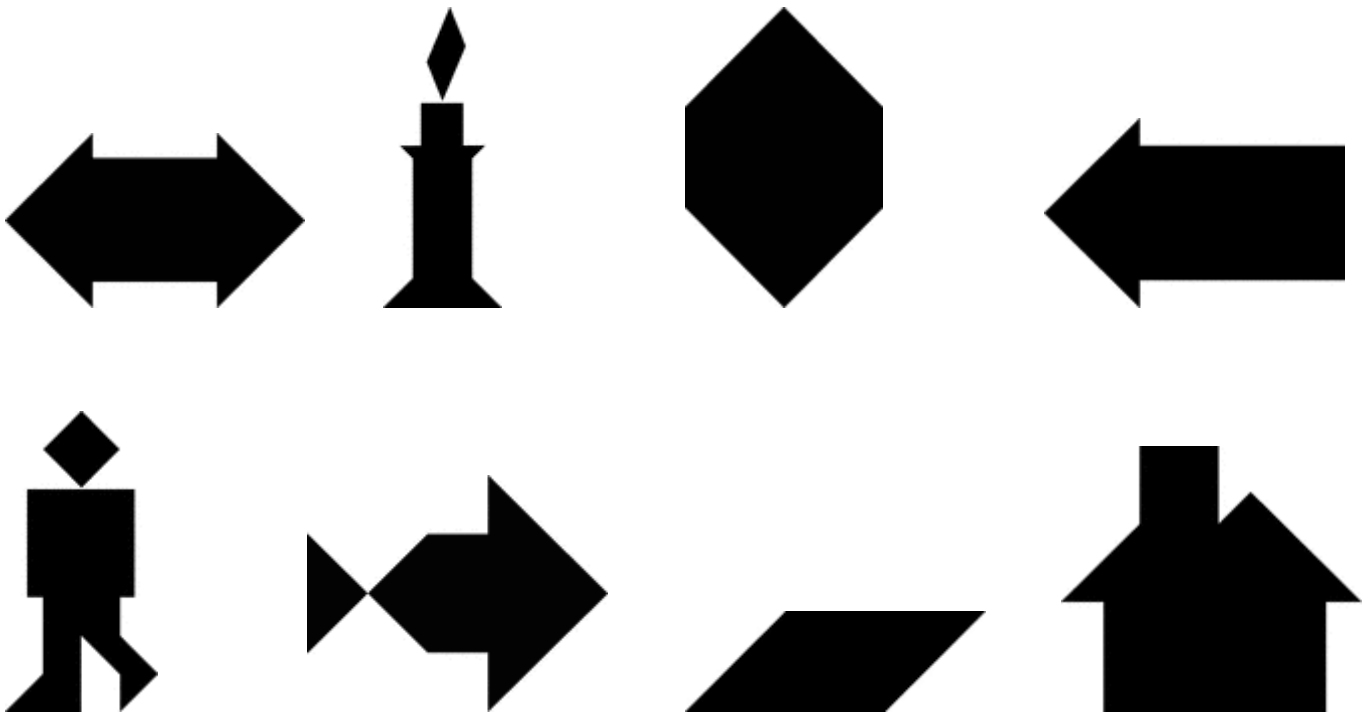
<p>Remove 4 of these matches to leave exactly 4 triangles.</p> 	<p>Place 3 dice in a line on the table. Make the top 3 numbers add to the same as either the front or back 3.</p> 	<p>Move one of these coins to make two rows with 4 coins in each row.</p> 
<p>Move 4 of these coins to make four rows with five coins in each row.</p> 	<p>Place 4 dice in a square. Make top and bottom sum to 14.</p> 	<p>Move one matchstick to make this correct</p> 
<p>Change 1 into 2 in 4 moves.</p> <p>1.  2. </p>	<p>Leave just two squares by removing two matchsticks.</p> 	<p>Add two more coins to make ten rows with three coins in each line</p> 
<p>Place 4 dice in a line. The sum on the top must equal the sum on the bottom.</p> 	<p>Place 3 dice in a line on the table. Make the top 3 numbers add to twice the bottom 3.</p> 	<p>Add two matchsticks to make this correct.</p> 

4. Tangram

Print on to card as thick as possible. Cut out with a sharp knife.



- Make each of the pictures below using ALL seven pieces.
- The pictures are different sizes and NONE are the correct size!
- If you get stuck on a puzzle, leave it and come back later.



5. Soma Cube Practice Cards

This is included to complete the set of activities. However, you will need a set of Soma Cube pieces. You can buy a set and they are not easy to make, but search online to find out how. It is a great activity. Build each shape with *Soma Cube* pieces.

