

	Lesson	Target grades	California Mathematics Standards Addressed					Lesson Summary
			Number sense	Algebra and functions	Measurement and geometry	Statistics, data analysis, and probability	Mathematical reasoning	
1	12-18-24	5-8	X				X	Learn a simple game that's not so simple.
2	3 Number Game	3-5	X	X			X	Find different ways to combine numbers
3	Afghan Bands	4-8			X		X	Explore the Moebius strip and learn a magic trick.
4	Ant Farm Flows	6-8	X		X		X	Learn about transport networks and graphs by helping ants build underground tunnels.
5	Bead Bracelets and Nets	4-8	X	X		X	X	Learn about coloring bracelets and networks of beads.
6	Bridges	5-8					X	Learn about the famous Bridges of Konigsberg problem.
7	Bug Stompers I	4-8	X		X		X	Explore tiling by squashing bugs with bricks.
8	Bug Stompers II	6-8	X		X		X	Explore tiling by squashing bugs with bricks.
9	Casting out 9's	6-8	X				X	Learn how to use "casting out 9's " to check arithmetic.
10	Clock Arithmetic	4-8	X	X			X	Explore alien worlds with different clocks to learn about clock arithmetic and Latin squares.
11	Color Cubes	4-8			X		X	Solve puzzles with colored cubes.
12	Cratterra	3-8	X				X	Explore search algorithms using by touring an alien world..
13	Cube Symmetry	6-8			X	X	X	Explore symmetries of the cube.
14	Desert Island Dice	5-8	X			X	X	Learn about probability by exploring dice. Learn how to create dice from nothing on a desert island.
15	Dice Tricks	3-6	X				X	Learn some mathematical magic tricks using dice.
16	Drawing Bow Ties	3-8	X			X	X	Explore tracing graphs and learn the trick to knowing where to start.

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17	Egyptian Fractions	5-8	X				X	Learn how Egyptians represented fractions and find some surprising patterns in fraction addition.
18	Farey	7-8	X		X		X	Explore farey fractions and their relationship to fruit orchards.
19	Flexagons	4-8			X		X	Learn to fold different polygons and how to make and flex flexagons.
20	Folding Cubes	4-6			X		X	Explore different ways to make a cube.
21	Folding polygons	4-8			X		X	Discover ways to fold different polygons.
22	From Dominoes to Seashells	4-8	X	X			X	Learn the relationship between dominoes and seashells.
23	Frozen Worms	4-6	X		X		X	Explore measurement and area with "frozen worms".
24	Games and Squares	4-8				X	X	Learn the strategy behind tic-tac-toe and make your own word game version of tic-tac-toe.
25	Gold coins	6-8	X			X	X	Solve a puzzle about gold coins and learn about algorithms.
26	Graph Games	4-8	X				X	Explore parity through games on graphs.
27	Graph Racing	5-8	X		X		X	Learn about velocity and acceleration by playing a game on graph paper.
28	Graphs and Maps	4-8			X		X	Learn about maps and the famous Four Color Theorem.
29	Hamming Codes	7-8	X			X	X	Learn about how to transmit information even when errors occur.
30	Handshakes, Maps, and Families	5-8	X		X		X	Learn about graphs and a surprising fact about the number of handshakes that have occurred.
31	Highways	6-8	X				X	Explore algorithms by solving some problems about highways.
32	Latin Squares and Art	3-8				X	X	Explore Latin squares and create some artistic designs from them.

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33	Latin Squares and Symmetry	3-8			X		X	Explore Latin squares and symmetry.
34	Magic Color Calendar Months	5-8	X			X	X	Explore combinations and learn a magic trick.
35	Magic of 9	4-6	X				X	Learn a magic trick based on the number 9.
36	Making Change	3-5	X				X	Explore making change with some foreign coins.
37	Mapmakers of Cartonia	4-8			X		X	Explore life as a cartographer on the alien world of Cartonia.
38	Native American Dice	3-8				X	X	Learn a game played by Native Americans and invent your own game.
39	Nim	6-8	X	X			X	Learn how to play Nim and the numbers behind it.
40	No Triangles! (NOT!) and SIM	4-8	X		X		X	Learn a cooperative game and how to play it.
41	Number Sequences and Polygons	3-6	X	X	X		X	Explore some number sequences and their relationships to polygons.
42	Number Squares	3-6	X	X			X	Learn about three different kinds magic number squares.
43	Numbers and Games	7-8	X	X			X	Learn how certain games can be added and subtracted just like numbers.
44	Palindromes	3-6	X	X			X	Solve palindrome word and number puzzles.
45	Paradox or Fallacy	6-8			X		X	Explore a geometric fallacy.
46	Parity Checks	6-8	X				X	See how parity is used in everyday life.
47	Parity Cubes	4-8	X		X		X	Explore symmetry and parity.
48	Parity Magic	4-8	X		X		X	Explore parity and learn a magic trick.

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49	Pascal's Pizza	5-8	X			X	X	Explore Pascal's triangle and solve geometric combination puzzle.
50	Pascal's Sequences	6-8	X	X		X	X	Learn about combinations and Pascal's triangle
51	Pentomino Rectangles	4-6	X		X			Explore rectangles made from pentominoes
52	Pentominoes and Area	4-8	X		X		X	Solve pentomino problems based on area.
53	Permutations and Anagrams	6-8		X		X	X	Learn about permutations
54	Pigeons and Triangles	9-12	X		X		X	Learn about the pigeon hole principle and its applications.
55	Polyhedrons	4-8			X		X	Discover Euler's formula.
56	Pouring Jugs	6-8	X				X	Explore trilinear graphing by solving the pouring jugs problem.
57	Prime Time	4-8	X		X		X	Explore patterns and prime numbers
58	Roll Back	4-8	X				X	Figure out how to win this die game
59	Roller Derby Dice	4-8	X			X	X	Learn about probability and use it to win a game with dice
60	Secret Codes	6-8				X	X	Learn about how to send information secretly.
61	Sol Lewitt Designs	3-5	X		X			Learn to make designs based on Sol Lewitt's art.
62	Sol Lewitt Combinations	3-8				X	X	Learn about combinations in a puzzle derived from a Sol Lewitt art piece.
63	Solid Pentominoes	4-8			X		X	Explore solid pentominoes.
64	Soma	4-8			X		X	Learn about drawing three-dimensional objects and solve the Soma puzzle.

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65	Square Numbers and Beyond	5-6	X			X	X	Explore relationships between polygonal numbers.	
66	Star Polygons	3-6	X	X	X		X	Learn how to draw star patterns and create some classic art.	
67	Sum Number	3-5	X				X	Learn a fast way to add and a magic trick.	
68	Take-away Games	5-8	X				X	Learn a game about numbers and find the winning strategy.	
69	Tangram Polygons	3-6			X		X	Explore polygons using tangrams.	
70	Telephone Numbers and Letters	3-6		X			X	Learn about problem solving and create telephone word puzzles.	
71	Tetrahedron Symmetries	4-8			X		X	Explore the tetrahedron, its symmetries, and its relationship to the cube.	
72	Tetrominoes	3-8			X		X	Solve some tiling puzzles, and learn why some can't be solved.	
73	Tower of Hanoi	6-8	X				X	Explore the famous Tower of Hanoi puzzle.	
74	Train Lines	4-8			X		X	Learn about different kinds of geometries.	
75	Triangulum	3-6			X		X	Explore a world where triangles are the most common shape.	
76	Unfolding Cubes	5-8			X		X	Explore cubes in three and four dimensions.	