

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

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

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

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