

# The Western States Lottery



8 students each select one of the state quarters. They also take a state card with numbers for each state. They can exchange any quarter and any numbered card as many times as they like. Each of the 8 students then calls out the number for the state card they have. That total of the 8 numbers is computed. You open your sealed lotto ticket and you have the winning ticket.

## 8 State Lottery Numbered Cards

California	30
Oregon	80
Idaho	52
Nevada	29
New Mexico	85
Texas	62
Washington	49
Utah	34

California	37
Oregon	64
Idaho	48
Nevada	47
New Mexico	59
Texas	67
Washington	57
Utah	42

California	45
Oregon	71
Idaho	32
Nevada	43
New Mexico	77
Texas	41
Washington	62
Utah	50

California	53
Oregon	79
Idaho	39
Nevada	27
New Mexico	73
Texas	59
Washington	36
Utah	55

California	58
Oregon	87
Idaho	47
Nevada	34
New Mexico	57
Texas	55
Washington	54
Utah	29

California	32
Oregon	92
Idaho	55
Nevada	42
New Mexico	64
Texas	39
Washington	50
Utah	47

California	50
Oregon	66
Idaho	60
Nevada	50
New Mexico	72
Texas	46
Washington	34
Utah	40

California	46
Oregon	84
Idaho	34
Nevada	55
New Mexico	80
Texas	54
Washington	41
Utah	27

## The Western States Lottery

### Preparation:

Cut out the state cards containing the numbers. Print out the pages for each state. Print out the raffle ticket and put it in an envelope. Print out the student recording sheet. If you are going to have the numbers written on a white board have a marker ready.

### Procedure.

Tell the class that 8 western states just had a lottery for a chance to win 1,000 dollars. They sold tickets to the lottery and many teachers bought one as the money they made would go to help schools.

The states needed to find a way to select the winning number so they could give out the prize to the person with the winning number. The method had to be fair so that no one could know in advance what the number was. After seeing the method I am sure you will agree that no one could have known the winning number in advance.

Announce that this class has been selected to help them determine the winning number. Pick 8 students and have them stand in front of the class. Tell the class that each of the states has sent in a picture of that state's quarter. Hold up the 8 papers with the pictures of each of the state quarters on them. Help each student select one state and hold it up facing the class. Next show the state cards with numbers on them. Help the students select one of the numbered cards. Tell the students they can exchange a state sign or a numbered card as they wish so that each student has one state sign and one numbered card. Make it clear that at this point there is absolutely no way anyone could know who would have which papers.

Get one student to come up and help with the next step. Hand them the recording sheet and tell them they are to write down the numbers each student selects. Start with one of the 8 students and have them name their state and name the number on the numbered card that is next to the state's name. If you have them hold the numbered card facing the audience you can ensure the accuracy of the numbers. Continue until all 8 states have been named and the number on the card of that state has been recorded. Ask the student to add up the 8 numbers while you watch to ensure accuracy.

Tell everyone that there is no way anyone could know who would have which state or which numbered card or which numbers could have been named so the sum of those numbers is a number that no one could have known in advance. That is the number the western states have decided to use for the winning lottery.

Ask the student who added the numbers to announce the winning number. Tell the class they you happened to buy 1 raffle ticket and you have it right here in an envelope on the desk. Have a student open the envelope and call out the numbers on your ticket. You are the winner of the lottery.

At this point I say I also have a letter from the Lottery and I open it. I pull out a fake \$ 1000 bill and say "isn't that my luck". I then say the lottery board also sent a quarter for each of the helpers and hand each student a state quarter.

**Note:** I provide a set of cards for **8 states** and a set for **5 states** if you want to use less students and add less numbers.

# Texas

## The Lone Star State



Texas is the second most populous and the second largest of the 50 states in the United States of America, and the largest state in the 48 contiguous United States.

Texas is nicknamed the Lone Star State to signify Texas as a former independent republic.

As of 2010 it shares the top of the list of the most Fortune 500 companies with California at 57.

Texas is the home to the Alamo. The Battle of the Alamo in 1836 was a pivotal event in the Texas Revolution.

The state produces the most wind power in the nation

# California

## Eureka... I have found it!



California is the most populous state in the United States. It has the third largest land area, after Alaska and Texas.

California is the most geographically diverse state in the nation. It contains the highest (Mount Whitney) and lowest (Death Valley) points in the contiguous United States.

Almost 40% of California is forested, a high amount for a relatively arid state.

# Arizona

## The Grand Canyon State



Arizona is the 15th most populous and the 6th largest of the 50 states in the United States of America,

Arizona is the 48th state and last of the contiguous states to be admitted to the Union.

Arizona is home to the Grand Canyon. It is one of the seven natural wonders of the world.

Arizona leads the nation in copper production.

Arizona is home to The original London Bridge. It was shipped stone by stone and reconstructed in Lake Havasu City.

The world's largest solar telescope is located at Kitts Peak National Observatory in the city of Sells.

# Utah

## Crossroads of the West



Utah is the 13h most populous and the 33h largest of the 50 states in the United States of America, Utah is home to the Golden Spike National Historic Site where the Central Pacific and Union Pacific Railroads met in 1869.

Utah is home to the Great Salt Lake covers 2,100 square miles, with an average depth of 13 feet. The deepest point is 34 feet.

Utah is home to Rainbow Bridge the world's largest natural rock span. It stands 278 feet wide and 309 feet high.

The average snowfall in the mountains near Salt Lake City is 500 inches.

# Idaho

## Let it be perpetual



Idaho is the 39th most populous and the 14th largest of the 50 states in the United States of America,

Idaho is called the Gem State. Nearly every known type of gemstone has been found there. It is one of only two places in the world where star garnets can be found in any significant quantities.

Idaho is sometimes called the "Potato State" owing to its popular and widely distributed crop

A network of dams and locks on the Columbia River and Snake River make the city of Lewiston the farthest inland seaport on the Pacific coast of the contiguous United States.

Idaho borders six states and one Canadian province.

# Oregon

## She Flies With Her Own Wings



Oregon is 27th most populous state and has the 9th largest land area.

Oregon's western boundary is the Pacific Ocean. Its northern boundary is the Columbia River and its eastern boundary is largely the Snake River. These are two of the largest rivers in the West.

Crater Lake National Park is its only national park. It is the deepest lake in the U.S. at 1,943 feet.

Oregon is home to what is considered the largest single organism in the world, an *Armillaria solidipes* fungus beneath the Malheur National Forest of eastern Oregon.



# Washington

## The Evergreen State



The state was named after George Washington, the first President of the United States.

Washington is the 13th most populous state and has the 18th largest land area.

Washington's western boundary is the Pacific Ocean. It shares a northern boundary with Canada.

Washington is home to the Grand Coulee Dam. It is the largest electric power producing facility in the United States and one of the largest concrete structures in the world.

Washington is home to Mount St. Helens. Mount St. Helens is most notorious for its catastrophic eruption in 1980. The eruption was the deadliest and most economically destructive volcanic event in the history of the United States.

# New Mexico

## The Land Of Enchantment



New Mexico is 36th most populous state and has the 6th largest land area.

Part of New Mexico's southern boundary is the Rio Grande River. The Rio Grande is tied for the fourth longest river in the U.S.

The states New Mexico, Colorado, Arizona, and Utah come together at a single point in the northwestern corner of New Mexico. This point is called **the Four Corners**.

New Mexico is home to the Carlsbad Caverns that includes a large cave chamber named the Big Room. It is the fifth largest chamber in North America and the twenty eight largest in the world.

# Nevada

## The Silver State



Nevada is 35th most populous state and has the 7th largest land area.

Nearly three-quarters of Nevada's people live in the area around Las Vegas.

It achieved statehood during the Civil War.

Nevada and California have the longest straight line as a state boundary at just over 400 miles.

Nevada was the home to above ground nuclear testing at the Nevada Test Site. Testing began in 1951. The last atmospheric test was conducted in 1962, and underground testing continued until 1992. The location is known for having the highest concentration of nuclear detonated weapons in the U.S.

### 8 State Lottery Numbered Cards

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Oregon	80	Oregon	64
Idaho	52	Idaho	48
Nevada	29	Nevada	47
New Mexico	85	New Mexico	59
Texas	62	Texas	67
Washington	49	Washington	57
Utah	34	Utah	42

California	45	California	53
Oregon	71	Oregon	79
Idaho	32	Idaho	39
Nevada	43	Nevada	27
New Mexico	77	New Mexico	73
Texas	41	Texas	59
Washington	62	Washington	36
Utah	50	Utah	55

California	58	California	32
Oregon	87	Oregon	92
Idaho	47	Idaho	55
Nevada	34	Nevada	42
New Mexico	57	New Mexico	64
Texas	55	Texas	39
Washington	54	Washington	50
Utah	29	Utah	47

California	50	California	46
Oregon	66	Oregon	84
Idaho	60	Idaho	34
Nevada	50	Nevada	55
New Mexico	72	New Mexico	80
Texas	46	Texas	54
Washington	34	Washington	41
Utah	40	Utah	27

## 8 State Recording Sheet

California \_\_\_\_\_

Oregon \_\_\_\_\_

Idaho \_\_\_\_\_

Nevada \_\_\_\_\_

New Mexico \_\_\_\_\_

Texas \_\_\_\_\_

Washington \_\_\_\_\_

Utah \_\_\_\_\_

**Total** \_\_\_\_\_

8 state winning ticket

If your lottery ticket is number

**421**

then you have won

The Great Western States Lottery

### 5 State Lottery Numbered Cards

California	68	California	67
Oregon	80	Oregon	82
Idaho	52	Idaho	48
Nevada	55	Nevada	47
Utah	74	Utah	85

California	78	California	70
Oregon	81	Oregon	92
Idaho	50	Idaho	49
Nevada	43	Nevada	45
Utah	77	Utah	73

California	66
Oregon	84
Idaho	60
Nevada	44
Utah	75

### 5 State Recording Sheet



California \_\_\_\_\_

Oregon \_\_\_\_\_

Idaho \_\_\_\_\_

Nevada \_\_\_\_\_

Utah \_\_\_\_\_

**Total** \_\_\_\_\_

## 5 State Winning Ticket

If your lottery ticket is number

**3 2 9**

then you have won

The Great Western States Lottery

## How to make your own cards

These cards are disguised addition tables that students are already familiar with.

### Step 1:

Pick 4 numbers to put in the 4 vertical boxes on the left.

3				
1				
4				
2				

### Step 2:

Pick 4 numbers to put in the 4 horizontal boxes on the top.

	7	5	8	6
1				
2				
3				
4				

### Step 3 :

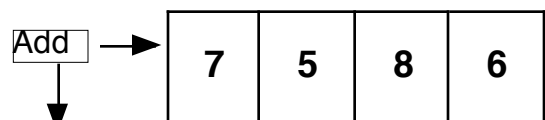
Add the numbers that are in the row and column of each box in the table

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

### Step 4:

Take away the top and side columns and you puzzle is ready to use

10	8	11	9
8	6	9	7
11	9	12	10
9	7	10	8



3
1
4
2

The Predict a Total number for the table is the sum of the 4 numbers in the top row above the table added to the sum of the 4 numbers in the row to the left of the table .

The Predict a Total number for the table above is

$$3 + 1 + 4 + 2 + 7 + 5 + 8 + 6 = 36$$

## Make your own 5 by 5 table

List the five states you are going to use in the top boxes. Select 5 numbers to put in each box in the top row above the table and 5 numbers to put in each box in the column to the left of the table. Complete the addition table to find the numbers for the squares in the table. There are 5 squares that have card 1 listed at the top of the square. Use the number in each square and the state name that is above the square to create the states and numbers for card 1. Do the same for the other 4 cards. Add the numbers in the extra row above the table and the extra column to the left to find the predicted number.

	Calif.	Oregon	Idaho	Nevada	Utah
	card 1	card 2	card 3	card 4	card 5
	card 5	card 1	card 2	card 3	card 4
	card 4	card 5	card 1	card 2	card 3
	card 3	card 4	card 5	card 1	card 2
	card 2	card 3	card 4	card 5	card 1

You need to create 5 cards. Each card will have the 5 states listed on it with a number next to each state.

The 5 numbers for each card are found by finding the 5 combinations of numbers on the card so that each number is in a different row and column. There are many ways to find these 5 combinations. The one shown on the left uses the long diagonal for the first card. Each number is in a different row and column. The next card the diagonal to the left of the center diagonal and ts wrap onto the left side. The other cards follow the same pattern

A more complete explanation as to how the 5 numbers on a card can be found is contained in the "Predict A Total Addition Grid I" grid trick on this site.

### 5 state Grid

	CA	OR	ID	NV	Utah
	38	52	20	15	45
30	68	82	50	45	75
28	66	80	48	43	73
32	70	84	52	47	77
40	78	92	60	55	85
29	67	81	49	44	74

### 8 state Grid

30	64	32	27	57	39	34	27
46	80	48	43	73	55	50	40
50	84	52	47	77	59	54	47
32	66	34	29	59	41	36	29
58	92	60	55	85	67	62	55
53	87	55	50	80	62	57	50
45	79	47	42	72	54	49	42
37	71	39	34	64	46	41	34