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| **Unit of Study:** State Lotteries **Time:** 1 pd **Date:**  Week of 4/29, Lesson 1**Essential Question(s):**  How likely is it that someone will win? What will they win? How does the lottery differ from state to state?**Focus Question:**   How do we determine sample space for our lottery systems?**Language Objective:** SWBAT write answer to questions about sample space. |
| **Materials Needed:** pencils, pens, chart paper, laptop (java script & cookies enabled), internet, ipad, projector, elmo, colored pencils/markers, calculators | **Vocabulary:**  Lottery, Gambling, Chance, Fair, Statistic, Probability, Sample Space,Theoretical/Experimental/Conditional/Independent/Dependent/Compound/Simple/Single Event/Multiple-Event Probability; want/desire; Prediction, Results, Compare, Order, Decide, Analyze, Determine, Conclude, Distinguish, Bias, Targeted Audience, Revenue, Percent, Decimal, Fraction, Funding, Private, Governmental, Successful, Win, Lose/Loss, Prize Structure, Multi-State, Generate, Self-Selected, Computer Generated, Cost, Estimated Gain, Percent Error, Pay Off |
| **Do Now:**  *When we played FG Lotto how many possibilities were there? Prove it!**\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ {0, 1, 2, 3}* |
| **Teach:  New York Lottery System:**How many numbers does a person choose? How many choices are there for each number?Can the numbers repeat?Complete the illustration of the lottery.  |
| **Guided Practice:**   How many possible draws are there for the lottery system? Show work.Is it easy to win the NY lottery? |
| **Independent Practice:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Lottery System:How many numbers does a person choose? How many choices are there for each number?Can the numbers repeat?Make an illustration for the lottery. |
| **Summary:**  Complete the handout. If time, exchange with a partner, and review each other's work.**HAND IN ALL WORK BEFORE LEAVING!!!**  |
| **Post-Lesson Reflection** |

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| **Unit of Study:** State Lotteries **Time:** 1 pd **Date:**  Week of 4/29, Lesson 2**Essential Question(s):**  How likely is it that someone will win? What will they win? How does the lottery differ from state to state?**Focus Question:**  How do I prove which lottery system is easier to win?**Language Objective:** SWBAT construct a diagram to illustrate multiple event probability.SWBAT read and understand how to calculate multiple event probability.SWBAT verbally justify how to find the probability of winning the grand prize.  |
| **Materials Needed:** pencils, pens, chart paper, computers, , laptop (java script & cookies enabled), internet, ipad, projector, elmo, colored pencils/markers, calculators | **Vocabulary:**  Lottery, Gambling, Chance, Fair, Statistic, Probability, Sample Space,Theoretical/Experimental/Conditional/Independent/Dependent/Compound/Simple/Single Event/Multiple-Event Probability; want/desire; Prediction, Results, Compare, Order, Decide, Analyze, Determine, Conclude, Distinguish, Bias, Targeted Audience, Revenue, Percent, Decimal, Fraction, Funding, Private, Governmental, Successful, Win, Lose/Loss, Prize Structure, Multi-State, Generate, Self-Selected, Computer Generated, Cost, Estimated Gain, Percent Error, Pay Off |
| **Do Now:**  Make a prediction:*The \_\_\_\_\_\_\_\_\_ lottery is easier to win, because....* |
| **Mini-lesson: *Calculating Probablity of Multiple Events***When there are multiple \_\_\_\_\_\_, you \_\_\_\_\_\_ the probability of each event to find the \_\_\_\_\_\_ probability. *ie. The probability of rolling double 4's.* |
| **Guided Practice:**     |
| **Independent Practice:  *Your Lottery System***Use your diagram from yesterday to help you calculate the odds of winning the grand prize in your lottery system.*Hints: How many possibilities for each draw?**Are there replacements?**Do the possibilities change between draws?* |
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| **Homework:**  Multiple Event Probability Jmap problem (explain and show all work!) |
| **Post-Lesson Reflection** |

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| **Unit of Study:** State Lotteries **Time:** 1 pd **Date:**  Week of 4/29, Lesson 3**Essential Question(s):** How does the lottery differ from state to state? What different design set-ups exist for the lottery? Could I create one?**Focus Question:**  How do we assess our project progress and fill in the gaps?**Language Objective:** SWBAT read and understand a rubric to make self-assessments.SWBAT set goal for themselves and articulate them verbally.SWBAT evaluate their daily progress using the rubric. |
| **Materials Needed:** pencils, pens, chart paper, computers, , laptop (java script & cookies enabled), internet, ipad, projector, elmo, colored pencils/markers, rubrics (copy for ALL students), calcualtors | **Vocabulary:**  Lottery, Gambling, Chance, Fair, Statistic, Probability, Sample Space,Theoretical/Experimental/Conditional/Independent/Dependent/Compound/Simple/Single Event/Multiple-Event Probability; want/desire; Prediction, Results, Compare, Order, Decide, Analyze, Determine, Conclude, Distinguish, Bias, Targeted Audience, Revenue, Percent, Decimal, Fraction, Funding, Private, Governmental, Successful, Win, Lose/Loss, Prize Structure, Multi-State, Generate, Self-Selected, Computer Generated, Cost, Estimated Gain, Percent Error, Pay Off |
| **Do Now:**  *Look over the checklist.* *Circle anything that you are missing.**Give yourself the points that you have so far.*What is your 1st, 2nd and 3rd priority for this class period?If you are completely done, what extra credit will you attempt? |
| **Teach:  Checklist:**1) 4-square research: NY and another state \_\_\_\_(2)2) Advertisement analysis: NY and another state \_\_\_\_(2)3) Bias in newspaper articles: NY and another state \_\_\_\_(2)4) Representation 4-square: NY and another state, \_\_\_\_(4) Venn diagram and 3,2,1 reflection 5) Demographic Analysis \_\_\_\_ (2)6) Revenue Excel Sheet \_\_\_\_ (3)7) Comparing Odds- General/NY/another state/both \_\_\_\_ (4) 8) Multiple Event Lottery - Diagram (NY/another state)/Proving odds (NY/another state) \_\_\_\_ (4)9) Sample Space (NY/Another state) \_\_\_\_ (2) **TOTAL = \_\_\_\_ (25)** |
| **Extra Credit Opportunities:** *Possible points- up to...*1) Design your own lottery system 25 - game,  - prizes, - odds,  - revenue/beneficiaries,  - ads,  - reenactment - representation - Compare/contrast with another state 2) Winning Odds Representation: NY and another state 103) Survey Lottery participation - chart, graph, writing 10 **TOTAL = \_\_\_\_ (45)**  **Computer Distribution:** (*Make-up kids from last week)*Once you get YOUR computer, take a seat. Turn on your computer. Open the web browser. Go to ***www.fgsmathcorner.weebly.com******Begin to look at the advertisements for your two state lottery* systems.** |
| **Student/Teacher Conferencing:**While you are working, I will call students up to conference their progress and give assistance. |
| **Next Week:***We will begin working on our posters and speeches for the symposium.* |
| **Exit Slip:**Review your exit slip. How many points do you now have? |
| **Post-Lesson Reflection** |

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_

**How many choices do I have? : *Understanding Lottery Sample Space***

Do Now- (Review):

*When we played FG Lotto how many possibilities were there? Prove it!*

*\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ {0, 1, 2, 3}*

New York Lottery System:

How many numbers does a person choose?

How many choices are there for each number?

Can the numbers repeat?

Complete the illustration of the lottery.



How many possible draws are there for the lottery system? Show work.

Is it easy to win the NY lottery?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Lottery System:

How many numbers does a person choose?

How many choices are there for each number?

Can the numbers repeat?

Make an illustration for the lottery.

How many possible draws are there for the lottery system? Show work.

Is it easy to win the \_\_\_\_\_\_\_\_ lottery?

Which lottery system is easier to win? Why?

**Checklist:**

1) 4-square research: NY and another state \_\_\_\_(2)

2) Advertisement analysis: NY and another state \_\_\_\_(2)

3) Bias in newspaper articles: NY and another state \_\_\_\_(2)

4) Representation 4-square: NY and another state, \_\_\_\_(4)

 Venn diagram and 3,2,1 reflection

5) Demographic Analysis \_\_\_\_ (2)

6) Revenue Excel Sheet \_\_\_\_ (3)

7) Comparing Odds- General/NY/another state/both \_\_\_\_ (4)

8) Multiple Event Lottery - Diagram (NY/another

state)/Proving odds (NY/another state) \_\_\_\_ (4)

9) Sample Space (NY/Another state) \_\_\_\_ (2)

 **TOTAL = \_\_\_\_ (25)**

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2) Advertisement analysis: NY and another state \_\_\_\_(2)

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**Extra Credit Opportunities:** *Possible points- up to...*

1) Design your own lottery system 25

 - game,

 - prizes,

 - odds,

 - revenue/beneficiaries,

 - ads,

 - reenactment

 - representation

 - Compare/contrast with another state

2) Winning Odds Representation: NY and another state 10

3) Survey Lottery participation - chart, graph, writing 10

 **TOTAL = \_\_\_\_ (45)**

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 - Compare/contrast with another state

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 **TOTAL = \_\_\_\_ (45)**

**Multiple Event Probability JMAP HW** *Name:* *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_*

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