Are the Odds in Your Favor?

Standard 12: Gambling

Susan McHale, Kristen Sublett, Niky Styers, Melissa Gunter
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Grade Level	9th – 12th Grade	**Time Frame**	150 minutes
Subject	Financial Literacy, Social Studies	**Duration**	2-3 class periods
Course	Personal Financial Literacy		

Essential Question

What are the odds of winning at games of chance? What impact does gambling have on people and society?

Summary

In this lesson, students will explore the odds of winning in games of chance and discover the problems associated with gambling. They will participate in a game of dice, read personal stories, and create their own PSAs about the dangers of gambling addiction. This lesson includes optional modifications for distance learning. Resources for use in Google Classroom are included.

Snapshot

Engage

Students play a probability game with dice or cards to investigate how often people win games of chance.

Explore

Students read about the odds of winning millions from a lottery ticket, then discuss and brainstorm why people might want to gamble on games of chance when the odds of winning are so poor.

Explain

Students listen to or read about personal accounts of gambling addiction. Then, students participate in a 3-2-1 activity to understand the impact of gambling based upon what they heard or read.

Extend

Given a rubric, students work with a group to create a PSA poster about the dangers of gambling addiction.

Evaluate

The PSA poster serves as an evaluation for this lesson. An optional peer evaluation activity is also included.

Standards

Oklahoma Academic Standards (Personal Financial Literacy (7th through 12th grade))

PFL.12: The student will explain and evaluate the financial impact and consequences of gambling.
PFL.12.1: Analyze the probabilities involved in winning at games of chance (e.g., sports betting, online betting, and fantasy sports).
PFL.12.2: Evaluate costs and benefits of gambling to individuals and society (e.g., family budget, addictive behaviors, and the local and state economy).

Attachments

- 3-2-1—Are the Odds in Your Favor - Spanish.docx
- 3-2-1—Are the Odds in Your Favor - Spanish.pdf
- 3-2-1—Are the Odds in Your Favor.docx
- 3-2-1—Are the Odds in Your Favor.pdf
- Lesson Slides—Are the Odds in Your Favor.pptx
- PSA Poster Project Rubric—Are the Odds in Your Favor - Spanish.docx
- PSA Poster Project Rubric—Are the Odds in Your Favor - Spanish.pdf
- PSA Poster Project Rubric—Are the Odds in Your Favor.docx
- PSA Poster Project Rubric—Are the Odds in Your Favor.pdf
- Personal Gambling Addiction, Ann's Story—Are the Odds in Your Favor - Spanish.docx
- Personal Gambling Addiction, Ann's Story—Are the Odds in Your Favor - Spanish.pdf
- Personal Gambling Addiction, Ann's Story—Are the Odds in Your Favor.docx
- Personal Gambling Addiction, Ann's Story—Are the Odds in Your Favor.pdf
- The Eleven Game Scoresheet—Are the Odds in Your Favor - Spanish.docx
- The Eleven Game Scoresheet—Are the Odds in Your Favor - Spanish.pdf
- The Eleven Game Scoresheet—Are the Odds in Your Favor.docx
- The Eleven Game Scoresheet—Are the Odds in Your Favor.pdf

Materials

- Lesson Slides (attached)
- 3-2-1 handout (attached, 1 half-sheet per student)
- Personal Gambling Addiction: Ann's Story reading (attached, 1 per student)
- PSA Poster Project Rubric (attached, 1 per student)
- The Eleven Game Scoresheet (attached, 1 per group)
- Dice (three per group)
- A deck of playing cards (optional)
- Chart tablet paper
- Art supplies (poster paper, markers, etc.)
- "A Statistician's View: What are the Chances of Winning the Powerball Lottery?" (linked in narrative or find URL in Resources section)
- Internet-enabled devices for students (optional)

Engage

Using the attached **Lesson Slides**, show students the guiding questions on **slide 3:** *What are the odds of winning at games of chance? What impact does gambling have on people and society?* Ask students to consider these questions throughout the lesson. Move to **slide 4** and briefly introduce students to the lesson objective on the slide.

Go to **slide 5** and explain to students the rules for the Eleven Game. Divide students into groups of three. Ask each group to designate one scorekeeper (the two remaining students should act as players). Pass one a copy of the attached **The Eleven Game Score Sheet** to each group. This score sheet contains the rules of the game and a score sheet for the scorekeeper's use. Additionally, pass out three dice to each group.

Teacher's Note: Designating a Scorekeeper

If it better fits your needs to assign scorekeepers, consider doing so by asking students, "Whose birthday month is closest to today's date?" Then, assign the scorekeeper job to the person whose birthday matches that description.

Teacher's Note: Rules for the Eleven Game

The Eleven Game is played as follows: the player who begins rolls all three dice and adds one tally to Player #1's "Total Rolls" column. If the numbers on the dice total 11, the scorekeeper adds 11 to that player's score in the "Score" column. If not, the player's score remains the same. (The scorekeeper records all rolls, both winning and losing, in the "Total Rolls" columns. A winning roll equals 11; all other totals are losing rolls.) The first player passes the dice to the second player. Repeat, with players taking turns to roll the dice. The first player to 99 points is the winner.

Remind scorekeepers to count the total number of times that the dice are rolled by each person, regardless of whether they roll an 11 or not. This is recorded on the scoresheet.

Have groups play. As students begin to reach scores of 99, move to **slide 6.** When a student from a group wins, have the group's scorekeeper do the following math:

1. Count the number of times each player rolled the dice, regardless of whether they won the roll. For example, the winning player's total rolls will equal more than 9. This number should be the same or nearly the same for both players.
2. Next, record the number of times each player scored the winning number 11. For example, the winning player will have rolled exactly 9 winning rolls; a losing player with a score of 44 will have rolled 4 winning rolls; and so on.
3. For each player, write the ratio of the winning rolls to the number of total rolls. This ratio should look like a fraction. Use the number of winning rolls for the numerator, and the number of total rolls as the denominator. For example, if the winning player had 9 winning rolls out of a total of 15 total rolls, their ratio would be 9/15, which reduces down to 3/5. If the losing player had 4 winning rolls out of a total of 15 rolls, their ratio would be 4/15.
4. Change each fraction into a percentage by dividing the numerator by the denominator. For example, the fraction of 3/5 would equal 60%. The fraction of 4/15 would equal 26%.

Once all scorekeepers have done so, move to **slide 7.** Create two columns on a poster or whiteboard space, labeling these, "Winning Percentages" and "Losing Percentages" as shown on the slide. Invite each scorekeeper to come up and record both the winning and the losing players' percentages in their respective columns to display for the class. Explain to the class that this game (rolling the dice to get an 11) is purely a game of chance, not of skill.

Optional Variation: Shorter Engage Activity

As an alternative to The Eleven Game, you might choose to bring a deck of cards (instead of dice) and about four small prizes per class. (If doing this activity in place of The Eleven Game, skip slides four through eight.) Tell students that today is their lucky day—they have a chance to win a prize. Do not reveal the prize ahead of time. Fan the deck of cards face down on a desk or table. Pick students to come to the front of the class to choose a Jack from the deck without looking. Some might say this is impossible; if so, you can ask, "What might be the odds of picking a Jack out of the entire deck of cards?" (The odds are 4 out of 52 or 4/52, which is 1/13 when reduced.) Ask students what chance (percentage) they have of winning this activity. The odd calculated as a percentage is roughly 8%. Discuss why people would play games of chance, such as this one, when the odds are so low.

Optional Modification for Distance Learning

To make this activity accessible for online or distance learning, consider using an online dice randomizer for students who don't have access to 3 dice at home as well as making all handouts available via Google Classroom. Download all attachments to use this lesson in Google Classroom.

Explore

Once each group's scorekeepers have recorded a full list of all players' percentages, move to **slide 8**. Ask each group to discuss the questions on the slide:

1. In looking at the list of winners' percentages, what is the median percentage? (Note: Median is the most frequent percentage.)
2. In looking at the list of losers' percentages, what is the median percentage?
3. Gambling is staking money on the outcome of games that are primarily based on chance. If you were to gamble on a game, what percentage or odds would you want to favor you? 50/50? 60/40? Higher?
4. Looking at the odds (percentages) on the board, would you "gamble" (place any money) on your chances of winning? Why or why not?
5. What about other games of chance? Would you be willing to gamble on a winning lottery ticket? A horse race? The outcome of a football game before it happens? Why or why not?

Once groups have had time to discuss, conduct a class discussion. Do so by reading through each question one at a time and asking for groups to share their responses.

Teacher's Note: Activity Preparation

Before beginning the next activity, print out a copy of the Huffington Post article "A Statistician's View: What are your chances of winning the Powerball lottery?" for each student.

Go to **slide 9**. Hand out copies of "A Statistician's View: What are your chances of winning the Powerball lottery?" Explain to students that, at most convenience stores nationwide, adults can purchase lottery tickets that promise to pay out large amounts of money. Invite students to read about the probability of winning the lottery. Introduce students to the Stop and Jot reading strategy, and ask them to use this strategy as they read.

Optional: Modified Stop and Jot Strategy

In the interest of time, or if your students struggle with reading material, you may wish to simply read the article aloud to them while they read silently. This way, a few paragraphs at a time can be read; then, in the margins of the reading, students can stop to jot down ideas or phrases that sum up what was just read. After this, discuss the article as a class.

Number students in the class off as 1s or 2s. Have students form groups of three with their respective numbers (1s should cluster together in groups of three, and 2s should cluster in separate groups of three). Ask each group to create a brief summary of either the first half of the article or the second half, based on their number (paragraphs 1-6 for groups of 1s; paragraphs 7-13 for groups of 2s).

Post two tablet papers (or use a whiteboard space or similar). Label the chart papers "Groups of 1s" and "Groups of 2s." Have student groups choose a writer to walk up to the tablet papers and write their summary on the appropriate page's tablet paper. Once each group's summary is written, go over each statement as a class. Begin with "Groups of 1s." This functions as a way of explaining the article.

Ask the class, "Given that the probability of winning these games of chance is so poor, why do people continue to gamble on them?"

Sample Student Responses

Answers will vary. They may include: "Someone has to win. It might be me," or "It can be exciting to play thinking you might win."

Optional Modification for Distance Learning

To make use of this lesson in an online or distance learning environment, have the student writer include their summary on a pre-made chart using an application like Google Docs or Padlet. You may also consider making this activity a discussion board post to which your students can respond directly. Download all attachments to use this lesson in Google Classroom.

Explain

Go to **slide 10**. Invite the class to listen to the stories of people who have a gambling addiction. Ask students the following questions: *What does the word "addiction" mean? For what reasons might someone become addicted to gambling?*

Sample Student Responses

Answers will vary but should include that addiction is something that you do compulsively and cannot stop doing. Typical responses may be: "people gamble for the thrill, or high, of taking a risk," "it can mean getting money without working," and "people want to beat the odds."

Introduce students to the 3-2-1 learning strategy, and pass out a half-sheet of the attached **3-2-1** handout to each student. Invite students to use the 3-2-1 strategy as they watch a short video about gambling addition. As they watch the below video, "A look at gambling addiction," have them identify:

- 3 things that might indicate a person has a gambling problem.
- 2 ways that casinos might encourage repeat gamblers.
- 1 thing that might help someone quit a gambling addiction.

Embedded video

https://www.youtube.com/watch?v=e9COYjna5Go

Teacher's Note: Additional Video Option

If you feel students may respond better to a video aimed at teens, consider showing "What To Do When Your Gambling Addiction Takes Over Your Life."

Extend

Have students form pairs with new partners (or return students to their previous groups of three). Once pairs or groups are formed, pass out to each student a copy of the attached PSA Poster Project Rubric. Move to **slide 11** and introduce students to the PSA poster project. Read aloud the rubric criteria for creating an outstanding poster. Check that students understand these criteria, answering questions as necessary.

Now, invite students to use their 3-2-1 notes to create a PSA poster with their group about the issues associated with gambling. Provide art supplies like posters or chart paper, markers, etc. if possible. The poster should include information about how gambling impacts people and society, as well as any information students gleaned from other activities or readings in this lesson. You may choose to supplement student understanding by allowing students to use the Internet to research gambling addiction, related problems, or other issues.

Optional Modification for Distance Learning

To include this activity in an online or distance learning environment, you can have students create digital posters using an application such as Canva or Google Slides. Download all attachments to use this lesson in Google Classroom.

Evaluate

Move to **slide 12.** The PSA group poster serves as an evaluation for this lesson and should be graded for content and appearance. The attached **PSA Poster Project Rubric** is provided for grading reference.

Optional Activity: Poster Peer Review

If it suits your classroom needs, you may also choose to have students peer review other groups' PSA poster projects. If you choose to do so, pass out an extra rubric to all groups. Display all finished posters in the classroom. Then, invite groups to "pre-evaluate" or "peer review" another group's poster as a way to help them make a better grade. In doing so, each group should evaluate another group's product against the rubric, then provide feedback for improvement.

Optional Modification for Distance Learning

You may choose to leave out the optional peer review activity above part of this lesson if utilizing distance learning. If you would like to include a peer review as part of the activity, you can use a website such as VoiceThread, where you can upload students' posters to the site. Then, students can choose whether they would like to make a quick video, a voice memo, or a written note to provide their feedback on other students' posters. Download all attachments to use this lesson in Google Classroom.

Teacher's Note: Looking for Hands-on Financial Literacy?

Mind Your Own Budget (MYOB) is a comprehensive game-based learning application for financial literacy. Mind Your Own Budget is aligned with the OK Passport and National Standards for Financial Literacy. Through game-playing, students encounter everyday financial tasks such as making and keeping a budget, paying recurring and emergency expenses, managing financial accounts, and using financial instruments. Each scenario presents a new challenge and teaches new concepts while building on important budgeting basics. To find out more, go to K20 Digital Game-Based Learning or email k20center@ou.edu.

Resources

- American Policy Roundtable. (2012). Gambling ruins lives: true stories of gambling's impact on human lives. http://www.aproundtable.org/gamblingsruinedlives/stories.html
- Ann's Story. (n.d.). Northstar Problem Gambling Alliance. https://www.northstarpg.org/find-help/success-stories/anns-story/
- K20 Center. (n.d.). 3-2-1. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5059a7b
- K20 Center. (n.d.). Stop and jot. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5077921
- KTVQ News. (2019, June 2). A look at gambling addiction [Video]. YouTube. https://youtu.be/e9COYjna5Go
- Teen Kid News. (2019, June 25). What to do when your gambling addiction takes over your life [Video]. YouTube. https://youtu.be/y_W8bc1IxmM
- Wasserstein, R. (2013, May 16). A statistician's view: What are your chances of winning the Powerball lottery? Huffington Post. http://www.huffingtonpost.com/ronald-l-wasserstein/chances-of-winning-powerball-lottery_b_3288129.html
- K20 Center. (n.d.). Google Classroom. Tech Tools. https://learn.k20center.ou.edu/tech-tool/628
- K20 Center. (n.d.). Padlet. Tech Tools. https://learn.k20center.ou.edu/tech-tool/1077
- K20 Center. (n.d.). Canva. Tech Tools. https://learn.k20center.ou.edu/tech-tool/612