

NTTI Media Rich Lesson Plan

Name: Will Todd, Jr.

Title: Lucky 7s

Topic: Probability & Statistics

Time Allotment: 55 – 60 minutes

Overview:

Statistics are the study of how we interpret data. This lesson demonstrates the understanding of the game of “Craps” and discourages students from gambling. Data collection is also a part of our daily lives and its application can be found in the daily news, newspaper and crime investigations where forensic specialists attempt to determine the likelihood of crime situations and speculate probable outcomes.

Subject Matter: Mathematics

Grade Level: Grades 7-12, Pre-Algebra & Algebra I

Learning Objectives: The students will be able to:

Georgia Quality Core Curriculum (QCCs):

48 Topic: Probability





Standard: Identifies possible outcomes of simple experiments and predicts or describes the probability of a given event expressed as a rational number from 0 through 1. (Pre-Algebra)

- 36 Topic:** Probability
Standard: Identifies possible outcomes of simple experiments and predicts or describes the probability of a given event expressed as a rational number from 0 through 1. (Algebra I)
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Standards:

National Council of Teachers of Mathematics (NCTM):



Data Analysis and Probability Standards for 6- 8 & 9-12.

-  Understand and apply basic concepts of probability
 -  Understand the concepts of sample space and probability distribution and construct sample spaces and distributions in simple case.
 -  Understand the concepts of conditional probability and independent events.
 -  Understand how to compute the probability of a compound event.
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Media Components:








Internet websites:

<http://www.mhschool.com/student/math/mhmath/6/activities.html>

-  This website involves a probability game that assess basic understanding on computing the probability of a simple event.
-  McGraw-Hill's website illustrates on-line books they provide for teachers and students who utilize their textbook series.

1. **Select** Student Icon
2. **Select** Content Area (Mathematics)
Book selection includes grades Kindergarten thru sixth grade.
3. **Select** 6th grade book
4. **Select** On-line Activities
5. **Select** Chapter Selection – Chapter 14 Probability & Statistics
Make sure that Shock Wave is installed to accommodate audio and visual interaction, directing the student through the activity.

Materials:

-  Overhead Projector
-  Dice (colored)
-  Scoring Sheet
-  Paper
-  Colored Pencils
-  Markers
-  Computer

Preparation for Teachers:

This lesson must assume that students already have a basic understanding of probability. Arrange the room to accommodate cooperative groups, include a manager, recorder, timer and material manager. Make sure that you write clear directions and complete a demonstration round before each group begins to play the game.

Introductory Activity: Setting the Stage/Engage (Maximum of 20 minutes)

Engage

Ask the students what will happen if you toss a penny in the air? What side will it land on? Write a short response.

Learning Activity: Focus for Media Interaction

Step 1:

Discuss in details the definition of probability and explain why there is a 50% chance that the coin will fall on heads or tails.

Step 2:

Next, toss one die. What side will it land on? Why?
Allow students to defend their answer thru any media.

Step 3:

Next, ask students what will happen if you toss two dice? How many outcomes will you have? Why? What is the probability that you will win on the first toss if you get a seven (7) or eleven (11); lose if you get a two (2), three (3) or twelve (12); or toss again if you toss any other combination. Questions you might ask:

1. "What is a combination?"
2. "How is it represented?"
3. "How many way can you get a 7? 11? 2? 3? or 12?"
4. "What is the likelihood or probability that you will win on the 1st toss?"
5. "What is the likelihood or probability that you will lose on the 1st toss?"
6. "What is the likelihood or probability that you will toss again?"

Step 3:

Show students how to determine the number of outcomes when you toss two dice. Illustrate on the chalkboard, overhead projector or Internet game.

Red Die

Green Die

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

Give each group of students a few minutes to complete trial tosses. Members need to complete the worksheet recording the outcomes and whether they won or loss.

Name	Number of tosses	Won	Lost	Actual number you toss
Student 1				
Student 2				
Student 3				
Student 4				



Cross-Curricular Extensions:

Language Arts:

The students will create other games utilizing the probability of outcomes.

Interview a gambler in your family or someone you might know. Write a paper.

Community and Real Life Connections:

Moral & Values: The probability activity should discourage students from a life of gambling once they realized that the game “Craps” lives up to its name. There will be a higher probability that they will eventually lose of their money, in this case, points. They will value gambling a morally wrong and does not guarantee success or getting rich fast.