

## **“What are the Odds?” (Make a Wager)**

Spring > Games > Math (MS.sp.games.math.WhatAreTheOdds)

### **Season & Location:**

Spring; most of the lesson plan materials are usable in a regular classroom setting; however, “taking it outside” is nearly always going to make it more interesting. The games themselves can be played inside, outside, around a campfire, etc. Hosting a visitor from the Chinook Winds Casino would likely happen in the classroom – but could also involve taking the class to the Casino. (The casino tie-in could be conducted as part of a visit to the arcade – a “reward” trip.)

### **Partnerships/Community Connections:**

Tribe’s culture department (for historical information and samples related to gambling – specifically, the stick game. Chinook Winds Casino personnel/operations people – folks able and qualified to speak with a bunch of kids about

### **Standards\* Focus:**

#### **Math:**

Statistics and Probability (8.SP)

J. Investigate patterns of association in bivariate data.

8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.

8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.

*\*“Second Language” standards are addressed by default – consult state scoring guide.*

### **Additional Standards:**

#### **Social Studies:**

Economics/Financial Literacy (7<sup>th</sup>)

7.21. Explain the function of imports and exports in the economy.

7.23. Explain the function of profit in the economy.

Social Science Analysis (8<sup>th</sup>)

8.26. Examine a controversial event, issue, or problem from more than one perspective.

8.27. Examine the various characteristics, causes, and effects of an event, issue, or problem.

8.28. Investigate a response or solution to an issue or problem and support or oppose, using

research.

### **Cultural Knowledge:**

Fun  
Communication  
Government  
Tools and Technology  
Belief/World View  
Medium of Exchange  
Arts and Aesthetics

### **Vocabulary (Gambling):**

|                                 |             |
|---------------------------------|-------------|
| Game (Stick game)               | na'-le      |
| Gamble                          | na'-le      |
| Song (Gamble song)              | na'-le shvn |
| Money (traditional shell money) | ts'vt       |

### **Vocabulary (Mathematics):**

|   |            |
|---|------------|
| Add (put together)                        | ch'aa-ta   |
| Subtract (take away/remove)               | duu        |
| Multiply (Put together 'this many' times) | tvn        |
| Divide (break apart)                      | lhchan-t'a |
| Equals (same as)                          | lhee-wi    |

### **Phrases:**

|                      |                   |
|----------------------|-------------------|
| I am gambling        | na'sh-le          |
| We two are gambling  | naa-ch'it-le      |
| We are gambling      | naa-ch'aa-ghit-le |
| You are gambling     | naa-ch'in-le      |
| You all are gambling | naa-ch'u'-le      |
| He is gambling       | na'-le            |

|                      |                  |
|----------------------|------------------|
|                      |                  |
| They are gambling    | xee-na'-le       |
| I gambled            | na'-sii-le       |
| We two gambled       | naa-sit-le       |
| We gambled           | naa-saa-ghit-le  |
| You gambled          | naa-sin-le       |
| You all gambled      | naa-su'-le       |
| He gambled           | na's-le          |
| They gambled         | naa-ghas-le      |
| I am singing         | dvsh-yvn         |
| We are singing       | daa-ghit-yvn     |
| You are singing      | daa~yvn          |
| You all are singing  | du'-yvn          |
| He/she/it is singing | dee-yvn          |
| They are singing     | xwii-dee-yvn     |
| I sang               | dghvsht'-yvn     |
| They sang            | xwii-dghest'-yvn |
| You sang             | dghan-yvn        |
| You all sang         | dghu'-yvn        |
| He/she/it sang       | dghest'-yvn      |

**Grammar & Language Concepts:**

Written and oral Dee Ni;

Simple to complex Dee Ni sentences, as necessary to create a gamble song;

Aspects of time (future, present, and past tenses);

**Prior/Concurrent Lesson Plan Materials:**

Lessons should incorporate any prior lessons that teach about gambling and traditional games (can include lessons about cultures other than Siletz); also, lessons that teach about the role of gambling and wealth in establishing power in traditional Siletz society.

ALSO -

Mathematics lessons that use Dee Ni words and terminology to describe the basic facts of mathematics (See above...)

**Lesson Objectives – After completion, students/instructors will be able to:**

Compare and contrast modern gaming with the tradition of gambling,  
(Analyze issues associated with tribal casinos... optional),  
Use probability and statistics to predict outcomes when playing games,  
Understand role of wealth and wagering in traditional Siletz society,  
Create a gamble song, and sing it.  
Understand the basic differences between a gamble song and other Dee Ni songs,  
Create a stick game of their own,  
Recognize that gender roles influenced who played certain games,

**Lesson Procedures:**

Class hosts representatives/employees from the Chinook Winds Casino to learn about casino operations and employment,  
Students learn about the historical connection between traditional forms of gambling and modern casinos,  
Students use stick game to generate statistics, which are used to generate appropriate word problems and formulas,  
Students use skewers to make a stick game deck and other playing pieces

**Assessment:**

Public Speaking Scoring Guide  
Dee NI project scoring rubric,  
Quiz, Oral and written test, and puzzles

**Materials & Supplies:**

Traditional gambling items – dentalium shell strands, gamble drum, example Stick Game.  
Recording of a gambling song.  
Materials necessary to make a stick game,