

Math Game

Close to 1000

Materials:

- ◇ Paper and pencil
- ◇ Deck of playing cards (each card represents the numeral equal to it's face value, ex; 2 is the numeral 2)
- ◇ Ace represents 1, Jacks represent 0, remove Queens and Kings from the deck.

Procedure:

- ◇ Shuffle the deck and deal each player eight cards.
- ◇ Each player selects six cards to create a three-digit addition problem that will come closest to 1000.

Cards Dealt:

2 0 4 7 6 8 1 5

7 8 5

+ 2 1 4

3-digit addition problem

9 9 9

- ◇ Take the sum of the addition problem and subtract it from 1000. This is your score.
- ◇ Play ten rounds and whoever has the least points, wins!

Web Resources

You will find web resources at:

<http://www.everett.k12.wa.us/math>
www.illuminations.nctm.org

Probability Games

<http://www.bbc.co.uk/education/mathsfile/shockwave/games/fish.html>
<http://www.rainforestmaths.com/>

Glossary

Probability — How likely it is that something is going to happen.

Likely — A very good chance that something may occur.

Unlikely — Nearly no chance that something may occur.

On-Line Glossary

<http://www.amathsdictionaryforkids.com/>

Singer, M. Investigations in Number, Data, and Space: Between Never and Always. Dale Seymour, 1998.

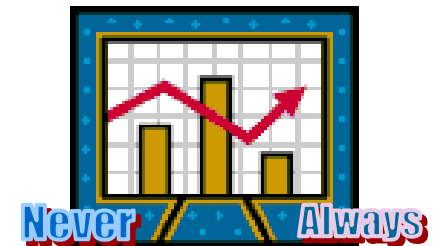
Investigations in Number, Data, and Space

**Everett Public
Schools**

Between Never and Always

Probability Unit Goals:

- Understand what probability means
- Estimate using probability
- Using probability to decide if a game is fair



**Proposed Time Frame:
2 and half weeks**

Mathematics in Investigations

Investigation 1:

- * Associate verbal descriptions with numerical descriptions of probability
- * See that repeating a probability experiment several times yields a variety of results
- * Using probability to predict how often an event may occur in a given number of trials
- * Estimate probabilities from results of actual trials
- * Predict and analyze features of distributions
- * Learning to add probabilities of simple events

Investigation 2:

- * Interpret fairness of a game as equal probability of winning
- * Developing systematic ways to generate a list that includes all the ways an event can occur
- * Apply knowledge of probability to design a fair game, and analyze the fairness of games
- * Distinguish between games of chance and games of skill
- * Understand variability in the results of fair games.

Tips for Helping at Home

- * Help students see a connection between sports statistics and probability
- * When playing games at home, have your child tell you about the probability of winning.
- * Emphasize that probability is not the same as being certain.

Listed below are questions to help teachers during observations and assessments.

Getting Started

- * **What is it that you don't understand? (Have your child be specific.)**
- * What do you need to find out?
- * What do you need to know?
- * What terms do you understand or not understand?

While Working

- * How can you organize the information?
- * Do you see any patterns or relationships that will help solve this?
- * What would happen if...?

Reflecting about the Solution

- * How do you know your answer is reasonable?
- * Has the question been answered?
- * Can you explain it another way?

At Home:

- 1 An activity your child will be doing at home is tossing a bottle cap many times to see how likely it is to land with the top up. You can help your child keep track of the results of this experiment and try to draw some conclusions from it.
- 2 We will be talking about games of skill and games of chance, and how to judge the "fairness" of a game. Listen to your child's explanation of what makes a game fair.
- 3 In another activity at the end of the unit, your child will experiment with pulling family members' names out of a hat as a fair way of deciding who does a household chore. Although students only pretend to allocate chores this way, you might actually try it out for a while. If you do, be sure to keep track of the results and discuss with your child whether or not it seems fair.

At School:

- 1 Attend Open House, Back to School Night, and after school events.
- 2 Join the parent-teacher organization

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