Applied Mathematics　　　　　　　　Team Leader: _____

Walla Walla High School

　　　　　　　　　　　　　　　　　　　　Team Member: _____

Unit 20 – Working with Probabilities

Lab Activity:　　　Pick a Coin, Any Coin

Objective:　　　Students, working in teams of two, will count and recount the amount and number of coins of an assigned jar – A, B, C, … . Students will then determine the probability of randomly picking a single coin of one of the denominations in the jar.

　　　　　　　　People love money and the jingle of coins always draws attention and interest. In our culture of buy now, pay later, it gives us a challenge to save money for large or small purchases.

Work Related　　　-　Following directions
Skills:　　　　　　-　Working cooperatively with others
　　　　　　　　　　-　Accuracy of your work
　　　　　　　　　　-　Accountability for your work
　　　　　　　　　　-　Research and problem solving skills
　　　　　　　　　　-　Calculating probabilities

Equipment:　　　Jar with Change (A, B, C, ….)
　　　　　　　　　Calculator

Procedure:　　　Use the problem-solving outline described below:

1. Select one or more partner, depending on class size and number of coin jars.
2. Each person in the group counts the amount of change in the jar and the total number of coins and number of each denomination.
3. Record data.
4. Each person recount coins to assure accuracy.
5. Calculate the probabilities of picking a specific coin from the jar.
6. Group presentation of data and probabilities.

Evaluation:

Requirements	Points Possible	Your Points
Completed Coin Count Data	10 Points	
Calculated Probabilities	20 Points	
Data Table– Counts Recorded, Probabilities calculated	10 Points	
Procedures, Documentation – Steps 1-7 above	5 Points	
Presentation	15 Points	
Total	**60 Points**	

Bonus points will be awarded for the following categories:

- Most accurate count per class (2 points)
- Most accurate count for all classes (4 points)
- Most accurate probability calculations per class (2 points)
- Most accurate probability calculations for all classes (5 points)
- Most creative presentation of data, as voted by class (5 points)

Data: **Jar Number:** _____

	Quarters	Dimes	Nickels	Pennies	Total Coins	Total Value
Count #1						X
Value					X	
Count #2						X
Value					X	
Probability of Random Selection						X

Formulas: List the formulas you will use for this lab below:

Analysis: Would the probability change for each jar? Why?