

Name: _____ Date: _____ Period: _____

Accuracy and Precision Lab: Paper Toss

Pre-Lab Reading:

In the basketball world, the statistics and ranks of players are determined by their ability to make the basket under the clock. Sports data analysts record each player's accuracy and precision with every shot they make or take. Accuracy is the measurement closest to a known value. While precision is when measurements are close to one another, but not necessarily near the intended target. When a player makes a basket, they are demonstrating accuracy. When the same player makes many baskets in a row, they are demonstrating accuracy and precision. If the player hits the rim many times but the basket does not go in, this is only precision.

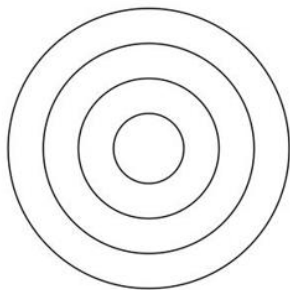
The accuracies of basketball players can be calculated by taking the number of shots they make, divided by the number of shots they take. For example, Steph Curry of the Golden State Warrior's has a free throw accuracy of 90.6%. This means out of 100 free throws attempted, Curry would hit his target roughly 90 times.

Pre-Lab Questions:

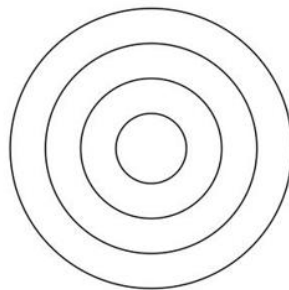
1. Define Accuracy:

2. Define Precision:

3. Illustrate on the bullseyes using dots, the concepts of precision and accuracy.



Precision



Accuracy

Directions:

1. Determine working groups of 3 - 4 students. Students will take turns throwing each turn. One turn is 10 paper balls thrown by the same person.
2. Stand behind the desired measured 1 meter, 2-meter, or 3-meter line.
3. Each student has 10 attempts to throw into the trashcan target.
4. While one person throws, the other teammates will record how many times the thrower was accurate; made it in the trashcan.

Data Table:

Find the Percent Accuracy: Total Shots Made / Total Shots Attempted; multiply the answer by 100 for a percentage

1 Meter					
Student's Name	Accurate	Missed	Total Shots Made	Total Shots Attempted	Percent Accuracy

Which student had the **highest percent accuracy** at 1 meter? _____

2 Meter					
Student's Name	Accurate	Missed	Total Shots Made	Total Shots Attempted	Percent Accuracy

Which student had the **highest percent accuracy** at 2 meters? _____

3 Meter					
Student's Name	Accurate	Missed	Total Shots Made	Total Shots Attempted	Percent Accuracy

Which student had the **highest percent accuracy** at 3 meters? _____

After Lab Questions:

1. Professional basketball players have amazing shooting abilities, which do you think wins games; **high accuracy, high precision, or both?** Explain your answer.

2. What were your percent accuracies for **1 meter and 3 meters?** How did your percent accuracy compare to your group members percent accuracies?

3. What could you have done to **increase** your percent accuracy?

4. In your own words, how would you describe or teach the concepts of accuracy and precision to your fellow classmates?