Regular Accuracy and Precision Lab

Introduction:
What is accuracy and precision, how do they affect our daily lives?

The definition of accuracy is

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The definition of precision is

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Materials:
- Cornhole set with five bean bags
- Meter stick

Procedure

Part A: FOR THIS PART, EACH TRIAL SHOULD BE THROWN BY **ONE** STUDENT
1. Measure a distance 4 m away from the edge of the board.
2. Have a student toss all five bags. Bags that did not land on the board should be re-thrown.
3. Record your data:
   a. To measure for ACCURACY, measure all bags from the distance away from the hole.
   b. To measure for PRECISION, find the average distance each bag was from a central location between all bags.
4. Record values in the data table provided, using the appropriate units.

Part B: FOR THIS PART, **EACH BAG** SHOULD BE THROWN BY A **DIFFERENT** STUDENT
1. Measure a distance 4 m away from the edge of the board.
2. Have one student toss one bag at the time, making sure to have a different student toss each time (if you do not have enough group members, you may decide who throws again). Bags that did not land on the board should be re-thrown.
3. Record your data:
   a. To measure for ACCURACY, measure all bags from the distance away from the hole.
   b. To measure for PRECISION, find the average distance each bag was from a central location between all bags.
4. Record values in the data table provided, using the appropriate units.

Data Table

Part A

Part B

Conclusion:

1. Calculate the average distance from the hole and determine which trial was most accurate.

2. Calculate the average distances from the bags and determine which trial was most precise.

3. Did one person, versus multiple people tossing make a difference in the accuracy? Explain.

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4. Answer Question #3 for precision. Explain.

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5. Explain how you could increase accuracy and precision in each of your trial runs.

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6. How does this activity model what has been discussed in class? Be specific, do not just state that is shows accuracy and precision.

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