Practice Task: Super Slugger Award

In this task, students work to determine baseball players' batting averages, represent the data in a graph, and then determine the recipient of a "Super Slugger Award."

STANDARDS FOR MATHEMATICAL CONTENT

Perform operations with multi-digit whole numbers and with decimals to the hundredths.

MCC5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Answers are shown below along with sample student responses.

1. Figure out the batting averages of each player on the team. Round each batting average to the thousandths decimal place. Remind students that in order to find a hitter's batting average you divide the number of hits (h) a player gets by the number of times they have been to bat (b); h ÷ b.

Player	Number of Hits	Number of Times at Bat	Batting Average
K. Smith	25	76	**0.328**
T. Rusch	33	80	**0.412**
A. Patrick	51	96	**0.531**
K. Waldrop	18	59	**0.305**
P. Corbett	29	62	**0.467**
J. Mark	29	64	**0.453**
C. Mudd	42	71	**0.591**
C. Cohen	38	67	**0.567**
D. Kirkland	37	61	**0.606**

2. Use the information that you collected to organize and display the data using the most appropriate graph.
3. Explain who should receive the *Super Slugger Award* from the team and why you feel the player deserves it. *Overall best batting average would go to D. Kirkland. Students should note mention that 0.606 is the largest number of all the batting averages.*

ESSENTIAL QUESTIONS

- How do we find the average?
- Why do our quotients include decimals?

MATERIALS

- "Super Slugger Award" recording sheet

GROUPING

Individual/Partner task

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION:

TASK:

Students will follow the directions below from the "Super Slugger Award" Recording Sheet.

Congratulations! Your baseball team has made it to the World Series Little League Baseball Championship. The team has won a record-setting twelve games in a row, with an overall record of 23 wins and only 4 losses.

Your coach needs your help. He is having a hard time figuring out which player on the team has the best batting average and has asked for your assistance.

Your job has three parts.

1. Determine the batting averages of each player on the team. (Round each batting average to the thousandths decimal place.) *Remember that in order to find a hitter's batting average you divide the number of hits* (*h*) *a player gets by the number of times they have been to bat* (*b*)*; h ÷ b.*
2. Use the information that you collected to organize and display the data using the most appropriate graph.
3. Explain who should receive the *Super Slugger Award* from the team and why you feel the player deserves it.

Player	Number of Hits (*h*)	Number of Times at Bat (*b*)	Batting Average
K. Smith	25	76	
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FORMATIVE ASSESSMENT QUESTIONS

- To how many place values do you need to divide? Why?
- What is an appropriate graph for this data? Why do you think so?
- What are the disadvantages of using this type of graph? What are the advantages?
- What criteria did you use to determine the student who deserves the Super Slugger Award? Who else could deserve this award?

DIFFERENTIATION

Extension

- Have the students look in the sports page for the batting averages of a minor or major league baseball team and construct graphs to represent the data.
- Have the students see if they can find the number of hits for a player, given only the batting average and the number of times at bat.

Intervention

- Teachers can create their own line-up with fewer players to meet the needs of their students.

Name_____ Date _____

Super Slugger Award Recording Sheet

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1. Determine the batting averages of each player on the team. (Round each batting average to the thousandths decimal place.) *Remember that in order to find a hitter's batting average you divide the number of hits (h) a player gets by the number of times they have been to bat (b); h ÷ b.*
2. Use the information that you collected to organize and display the data using the most appropriate graph.
3. Explain who should receive the *Super Slugger Award* from the team and how you would justify your choice.

Player	Number of Hits (*h*)	Number of Times at Bat (*b*)	Batting Average
K. Smith	25	76	
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