



Baseball Line-up

Materials Needed:

- Transparency of a Grade Book Page;
- Transparency of some Batting Statistics;
- Computer with the file GradBK2
- Overhead projector

Activities:

- Project a transparency of the Grade Book black line master for the class to see. Ask the prompting questions below to get your students to start thinking about the difference between paper spreadsheets and computer spreadsheets:
 - "Raise you hand if you know how I (the teacher) calculate average grades ."
 - "Would you like to be able to know your new average grade after each new test or homework grade is entered in the grade book? "
 - "Explain what I (the teacher) would have to do in order to calculate new average grades after each new grade is entered in the grade book."
 - "How much time do you think it would take for me to compute new average grades for a class of 30 students or for all of my five classes."
 - "Would anyone like to figure out how long it would take?"
 - "Imagine if this grade book could automatically compute the averages of each student each time that a new grade is entered and display the new average grade in the far right column. What would be some advantages of having an automatically calculating grade book? How might you as students use one for your personal grades?"
- Explain to the class that this is the way that computer spreadsheets work. They enable you to organize information into columns and rows and to have the computer automatically run computations on the information in the spreadsheet each time the information is changed.
- On the Grade Book transparency, add another grade for one of the three students. Instruct the class to average the grades for that student and record the time it took them. Enter their findings in the Average Grade column and announce how long it took for them to do the calculations.
- Repeat the process using a computer spreadsheet by demonstrating file GradBK2.
- Ask the class if anyone can explain what the average cell is doing each time you add or change a grade. Push them to be as specific as possible identifying column, row, and cell designations.

Activity:

- Project a transparency of black line master Batting Statistics for the class to see and explain each of the columns of data.
 - Player.....The name of several players on the Atlanta Braves team.
 - At bat.....The number of times each player came to bat.
 - Hits.....The number of hits by each player that resulted in getting on base.
 - Batting Average.....The portion of times at bat that each player earned a hit. A Batting Average of .500 would mean that the player earned a hit half of the times that he came to bat.
- Ask your students how batting averages are computed. Answer: The Batting Average is computed by dividing the number of hits by the number of times at bat (use transparency, Batting Statistics). The value is usually calculated three places to the right of the decimal and reported as a whole number. An answer of .32 would be reported as 320.
- Divide the class into groups of four students. Ask each group to come up with as many advantages as possible for having this table of baseball statistics on a computer spreadsheet. Remind them that the computer spreadsheet would be able to re-calculate Batting Averages each time that the number of times At Bat and the number of Hits is changed.

Extension:

- Each student will write a letter to the school baseball coach describing the benefits of keeping game statistics on a computer spreadsheet.