Scenario
Grade 3

1. Imagine you are teaching a third grade class. The students are familiar with place value, and you are going to begin a week-long unit on rounding numbers to the nearest ten, hundred, or thousands.

You are ready to start the unit on rounding. How likely are you do each of the following activities to introduce the unit.

A. Have Students solve a problem such as estimating the sum of 32+45
B. Demonstrate how to solve problems such as rounding 42 to the nearest ten
C. Have students work in pairs or groups to solve a problem such as rounding 107 to the nearest ten
D. Ask students what they know about rounding
E. Remind students about the ones, tens, and hundred columns
F. Explain the procedures for rounding numbers (e.g., less than 5, round down; otherwise round up)
G. Have students represent numbers using base 10 blocks (which include blocks equal to one, ten, and one hundred)
H. Lead a classroom discussions about estimation, such as how to estimate to the nearest ten the total number of lunches sold by the school.

2. You are at the midpoint of your unit on rounding, and most students appear to understand the procedures. Next, you pose more complex problems. You ask your students to estimate 3050 to the nearest thousand. When most students have appeared to complete the task, you ask Chen if he would share his solution. He replies that the answer is 4000 because "you round up when there's a 5".

You know, however, that the correct answer is 3000.

After praising Chen for knowing that you round up when there is a 5, what do you do next? How likely are you to do each of the following?

A. Ask Chen to imagine where 3050 lies on a number line between 3000 and 4000
B. Suggest that Chen use the base ten blocks to solve the problem
C. Pose another similar problem for the class
D. Give Chen another problem similar to this one, and ask him to solve it

E. Tell Chen that his answer is close, and ask if anyone can help him with his solution
F. Tell Chen that he was close but the answer is 3000
G. Ask the class, "Did anyone else use a similar method but get a different answer?"
H. Call on another student who you expect will give you the right answer
I. Explain that you round up only if the 5 is in the hundred place
J. Ask Chen, " How did you get from 3050 to 4000?"
K. Ask the class, " Are there any other answers?"

3. You are almost at the end of the unit on rounding. You ask students to work in pairs or groups to solve the following problem.

Mrs. Butler's class is counting their Halloween candy. They receive four different kinds, as shown in the table below. To the nearest ten, what is the best estimate of the total number of candies that Mrs. Butler's class received?

Candy	Number Counted
Snickers	144
M&M	56
Reese's Peanut Butter Cups	41
Milky Way	71

After working on the problem for a while, you ask each group if they will share their work.

- The first group says the answer is 310. They explain that they first rounded each number to the nearest ten and then added the rounded numbers. (140+60+40+70=310).
- The second group gives the same answer, and explains that they added all the numbers then rounded the sum to the nearest ten. (144+56+41+71=312; rounded to 310).

How likely are you to do each of the following in response to these two explanations?

A. Ask the class if they can think of other ways to solve the problem
B. Think up a new problem in which the two methods yield different answer and have the groups solve it
C. Tell them that it is better to use the second group's method because it is more accurate
D. Tell them it is better first group's method because it is faster
E. Tell them that they are both right and move on to the next problem

F. Have a classroom discussion about the differences between the two approaches

If you were to teach a unit on rounding to your current class, how much emphasis would you place on each of the following learning objectives?

A. Students will know the procedures for rounding (e.g. less than 5 round down; otherwise round up)
B. Students will have an understanding of why we use rounding
C. Students will be able to solve problems such as rounding 5054 to the nearest ten and to the nearest hundred
D. Students will be able to use a number line to round numbers (e.g. show why 1375 rounded to the nearest hundred is 1400).
E. Students would be able to extend the standard rounding rules to larger numbers
F. Students will be able to use rounding to determine whether answers to multiplication problems are reasonable

3. Imagine you are teaching a third grade class. The students know how to tell time, and you are about to begin a weeklong unit on differences between two points in time. You are ready to start the unit on differences in time. How likely are you to do each of the following activities to <u>introduce</u> the unit?

A. Have students work in pairs or groups to solve a problem such as finding the number of minutes that have elapsed between 11:15 a.m. and 11:30 a.m. on the same day
B. Demonstrate how to solve problems such as finding the number of minutes that have elapsed between10: 10 p.m and 10:25 p.m on the same day
C. Have students use paper clock faces with movable hands to determine the time between given starting and ending times
D. Ask students what they know about calculating differences in time
E. Have students solve a problem such as finding the number of hours that have elapsed between 1:00p.m Today and 3.30p.m The next day
F. Review how to read time
G. Lead a classroom discussion about how much time there is until recess begins
H. Explain the procedures for finding elapsed time (e.g. subtract the first time from the second time)

4. You are at the midpoint of your unit on differences in time, and most students appear to understand the procedures. Next, you pose more complex problems. You ask students to find out how much time has elapsed between 8:47a.m and 11:43a.m on the same day.

When most students appear to have completed the task, you ask Joey if he will share his solution. He replies that the elapsed time is close to 3 hours, and there was a 4-minute difference, so he found the answer to be 3 hours minutes.

You know, however, that the correct answer is 2 hours 56 minutes.

After praising Joey for knowing that the difference in time is close to three hours, what do you do next? How likely are you to do each of the following?

A. Pose another similar problem for the class
B. Suggest that Joey use manipulative (e.g. counters) to solve the problem
C. Tell Joey that is answer is close, and ask if anyone can help him with his solution
D. Give Joey another problem similar to this one, and ask him to solve it
E. Ask Joey, "How did you get from 3 hours to 3 hours 4 minutes?"
F. Call on another student who you expect will give you the right answer
G. Ask the class, " Are there any other answers?"
H. Explain that 4 minutes should have been subtracted
I. Tell Joey that he was close, but the answer is 2 hours 56 minutes
J. Ask the class, "Did anyone else use a similar method but get a different answer?"
K. Ask Joey to imagine what the clock face would show if 3 hours, 4 minutes were added to 8:47 a.m.

You are almost at the end of the unit on differences in time. You ask students to work in pairs or groups to find how much time has elapsed between 8:36a.m and 9:21a.m that same day.

After working on the problem for a while, you ask each group if they will share their work.

- The first group says the answer is 45 minutes. They explain that they calculated the elapsed time by first finding the number of minutes it took to reach 9:00a.m and then added the additional minutes to reach 9:21a.m.

- The second group gives the same answer, and explains that they located each time on their paper clock, colored in the area between the two times, and noticed that the shaded region represented three fourths of the clock.

A. Have a classroom discussion about the differences between the two approaches

B. Think of a new problem in which the two effective and ask the groups to solve it
C. Tell them that it is better to use the first group's method because it is faster
D. Ask the class if they are both right and move on to the next problem

If you are to teach a unit on differences in time to your current class, how much emphasis would you place on each of the following learning objectives?

A. Students will be able to extend what they know to estimate differences in days, weeks, or months
B. Students will know the procedures for finding elapsed time (e.g. subtract the first time from the second time)
C. Students will be able to solve problems such as determining the number of minutes between 12:06a.m and 1:45p.m on the same day
D. Students will be able to estimate differences in time within a single day
E. Students will be able to use a paper clock with movable hands to find elapsed times (e.g. show why 42 minutes have passed between 2:32p.m and 3:14p.m on the same day)