**SUPPLEMENTAL INSTRUCTION ACTIVITY**

**TOPIC:** Multiplication and Division of Decimals

**APPLICABLE COURSES:** All math courses and other courses in other divisions.

**LEARNING OUTCOME:** (What will students be able to do by the end of the workshop?)

-multiply decimals by positive powers of 10

-multiply decimals

-divide decimals by positive powers of 10

-divide decimals

**CONTENT:** (What do students need to know to accomplish the outcome?)

1. Multiplying Decimals by positive powers of 10.
2. Multiplying Decimals
   1. Correct decimal placement using counting method
3. Dividing Decimals by positive powers of 10.
   1. Including dividing money and rounding to the nearest cent
4. Dividing Decimals.
   1. Making the Divisor a whole number
   2. Terminating Decimal Answers
   3. Repeating Decimal Answers
   4. Rounding Answers

**METHOD:** *(How will the instructor deliver content? Short lecture, handouts, Powerpoint, other audio-visual presentation)*

-The lesson is divided into segments composed of lecture and examples followed by student practice and sharing.

-First, the instructor distributes the exercise worksheet and any supporting handouts.

Part A (about 20 min): The instructor will present segments 1 and 2 with examples (Multiplying). Students will then attempt the practice problems. After the students try the practice problems, the instructor posts the solutions/answers on the screen for students to check their work. Next, in pairs, students will discuss wrong answers with their partners and figure out why they got it wrong.

*Note to Instructors: Feel free to skip some of the example or practice problems if time does not permit you to finish.*

Part B (about 20 min): The instructor will present segments 3 and 4 with examples (Dividing). Students will then attempt the practice problems. After the students try the practice problems, the instructor posts the solutions/answers on the screen for students to check their work. Next, in pairs, students will discuss wrong answers with their partners and figure out why they got it wrong.

*Note to Instructors: Feel free to skip some of the example or practice problems if time does not permit you to finish.*

Part C (about 15 min): Next students complete a short quiz where they are asked to multiply and divide decimals by powers of 10, and multiply and divide decimals. After completing the quiz, the instructor posts the solutions/answers on the screen. Students check their results.

Part D (about 5 min): Students complete the self-reflection activity. The instructor can also look over the quizzes while the students are completing the self-reflection activity to give feedback to students.

**ACTIVE LEARNING STRATEGIES:** (How will students apply their knowledge? Solve a problem, create a project, analyze a case, explain a process)

Students reflect on the exercises and teach each other by verbalizing the steps they took to reach their conclusions.

**ASSESSMENT METHOD:** (How will the instructor know that the students met the outcome? Check for understanding. )

(10 minutes.)

Students complete a quiz where they are asked to multiply and divide decimals by powers of 10, and multiply and divide decimals. After completing the quiz, the instructor posts the solutions/answers on the screen. Students check their results. The instructor can also look over the quizzes while the students are completing the self-reflection activity to give feedback to students. If students do not successfully complete the worksheet quiz, they may be referred to individual tutoring or a guided learning activity.

**SELF-REFLECTION ACTIVITY:** (What will the instructor do to get students to reflect on how they learned the content? What they learned, how they learned it, how they will apply it in their coursework)

(5 minutes.)

-If you were going to make a mistake when you multiply or divide a decimal, what would be the mistake?   
Why do you think you make that mistake more often?

-What steps are you going to take so that you make fewer mistakes when you multiply or divide decimals?