

# Hone on the Range

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## **Objectives**

1. To practise mental arithmetic skills using decimals.
2. To round decimals.
3. To investigate multiplication by decimals greater than or less than 1.

## **Level**

Grades 5 - 8

## **Materials**

One calculator for every two students.

## **Problem Solving Skills**

1. Making reasonable estimates.
2. Recognizing limits and/or eliminating possibilities.
3. Guessing and checking.

## **Teacher Instructions**

1. Have students pair off and ensure that each group has a calculator.
2. Explain the rules:
  - a. As a pair, decide on a range, such as between 730 and 760. The objective is to get the answer to a multiplication problem to be within the range.
  - b. Designate each player as either A or B.
  - c. Player A enters a two-digit number on the calculator and pushes the X key.
  - d. Player B enters a number and pushes the X key, trying to get the answer to be within the range.
  - e. If Player B's answer is not within the range, then player A enters a number and pushes the X key, trying to get the answer to be within the range.
  - f. Play continues until one of the players does get an answer within the range.
3. Play one game with the class, with the teacher being Player A and the class Player B, to ensure that the rules are understood.

4. Suggest other possible ranges: 600 to 605, 850 to 855, 175 - 180, 335 - 340  
Superhard: 199 - 200, 3000 - 3001.

### **Variations**

Instead of using the X key, use the divide key. Pick a low range, like 40 - 45. Start with a large three-digit number, like 638.

Have enough calculators for each student. Have students play the same range of numbers and see how many steps it takes them to "hone in on the range."

### **Reference**

Schaaf, Oscar. Problem Solving in Mathematics for Grade 7. Eugene, Oregon: Lane Education Service District, 1981.

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*Mary Jo Maas was a teacher at G.R. Davis School in Fort Macleod. She is currently on secondment to the Faculty of Education at the University of Lethbridge where she is teaching curriculum and instruction courses in mathematics and supervising student teachers. Jo is the secretary of MCATA.*