# Standard Algorithm and Decimal Placement

Decimal point placement within numbers affects the overall value of the product, or the answer to a multiplication problem. When changing the decimal point within an expression, the digits in the product will stay the same but the value of each of the digits will change.

In multiplication, ignoring the decimal point and multiplying the numbers as if they are whole numbers is a helpful strategy to solve decimal multiplication problems. Once you have the product, then place the decimal point based on a reasonable answer.

| 33 x 53 = 1749          influences my answer for          3.3 x 5.3 = 17.49 |
|---|
| If I round the two decimals to the nearest whole numbers, I get 3 and 5. I know that 3 x 5 = 15, therefore it makes sense to put my decimal point after the 17. I guess multiplying an additional three-tenths by three-tenths is enough to create the two extra ones (e.g., 15 + 2 = 17). |

**Directions: Look at the expression and follow the instructions.**

| 1. | **2.3 x 8.23** | |
|---|---|---|
| a. Ignore the decimal point and solve for the expression using whole numbers and the standard algorithm. | b. Think about the decimal numbers and the whole number product. What would be a reasonable answer to the decimal multiplication expression?<br><br>A reasonable answer for this decimal problem is<br><br>_____<br><br>_____<br><br>_____<br><br>_____ | c . Discuss how you solved the multiplication problem and decided on the decimal placement. Write some notes here and then share your answer with a partner.<br><br>I solved the problem by<br><br>_____<br><br>_____<br><br>_____<br><br>_____ |
| Whole number product: _____ | Decimal product: _____ | |

| 2. | **13.4 x 6.85** | |
|---|---|---|
| a. Ignore the decimal point and solve for the expression using whole numbers and the standard algorithm. | b. Think about the decimal numbers and the whole number product. What would be a reasonable answer to the decimal multiplication expression? | c . Discuss how you solved the multiplication problem and decided on the decimal placement. Write some notes here and then share your answer with a partner. |
| Whole number product: _____ | Decimal product: _____ | |

| 3. | 45.1 x 5.7 | |
|---|---|---|
| a. Ignore the decimal point and solve for the expression using whole numbers and the standard algorithm. | b. Think about the decimal numbers and the whole number product. What would be a reasonable answer to the decimal multiplication expression? | c. Discuss how you solved the multiplication problem and decided on the decimal placement. Write some notes here and then share your answer with a partner. |
| Whole number product: _____ | Decimal product: _____ | |

| 4. | 2.5 x 10.5 | |
|---|---|---|
| a. Ignore the decimal point and solve for the expression using whole numbers and the standard algorithm. | b. Think about the decimal numbers and the whole number product. What would be a reasonable answer to the decimal multiplication expression? | c. Discuss how you solved the multiplication problem and decided on the decimal placement. Write some notes here and then share your answer with a partner. |
| Whole number product: _____ | Decimal product: _____ | |