Multiplying Decimals

Topic: CCSS 5.NBT.B.7 - Add, subtract, multiply, and divide decimals to hundredths...

Instructions: Demonstrate how to multiply decimals.

Knowledge of multiplying multiple digit whole numbers is assumed.

Demonstration

- **What is 1.3 x 0.6?**
  - Line up the numbers as you would for normal multiplication:

    1.3
    x 0.6

  - Remove the decimal (from both numbers)
  - Multiply like normal numbers

    13
    x 6
    78

  - Count the number of digits (numbers) behind the decimal point for each number

    1.3 => one digit behind the decimal point
    x 0.6 => one digit behind the decimal point
    78

  - Add the number of digits behind the decimal point:

    1 + 1 = 2

  - Count that many places in the answer
  - Place the decimal point (add leading zeros as needed)

    1.3
    x 0.6
    0.78
    2 1

- Write the final answer:

  1.3
  x 0.6
  0.78

Summary of the Steps

- Line up the numbers as you would for normal multiplication
- Remove the decimal (from both numbers)
- Multiply like normal numbers
- Count the number of digits (numbers) behind the decimal point for each number
- Add the number of digits behind the decimal point
- Count that many places in the answer
- Place the decimal point (add leading zeros as needed)
- Write the final answer

Your Turn

- **What is 3.1 x 1.5?**

The Solution

- **What is 3.1 x 1.5?**

  3.1
  x 1.5
  155
  31x
  4.65 (add 155 and 31x (which is 310) like in normal multiplication)
  2 1

  The final answer: 3.1 x 1.5 = 4.65

Challenge Question

- **What is 103.25 x 16.2?**

The Solution

- **What is 103.25 x 16.2?**

103.25 => two digits behind the decimal point
x 16.2 => one digit behind the decimal point
20650
61950x
10325xx
1672.650 (add 20650 and 61950x and 10325xx like in normal multiplication)
3 2 1

The final answer: 103.25 x 16.2 = 1672.650 which is 1672.65 (can remove trailing zeros)

Tip: Estimate the Final Answer

- **What is 103.25 x 16.2?**
  - Estimate: 100 x 16 = 1600
  - The answer above is 103.25 x 16.2 = 1672.65
  - That is close to 1600