

Grade 6 Chapter 6 Lesson 6 Multiplying by Two-Digit Numbers

Answers

B. 1000 + 700 + 70 + 6

10	10 000	7000	700	60	17 760
+					
9	9000	6300	630	54	15 984
	19 000	13 300	1330	114	33 744

A. 1776
 $\times 19$

 15 984
 17 760

 33 744

C. He climbed 33 744 cm.

1. For example, Chandra probably rounded 1776 to 2000 and 19 to 20, and then multiplied: $2000 \times 20 = 40\,000$. Maggie probably rounded 1776×19 to 1700×20 . She may have rounded 1776 down to 1700 instead of up to 1800 because she wanted to balance having rounded 19 up to 20. She knows that $17 \times 2 = 34$, so $1700 \times 20 = 34\,000$.
2. For example, $300\text{ m} = 30\,000\text{ cm}$. He climbed 33 744 cm, so that is more than 300 m.
3. For example, the multiplication is similar because you multiply by each digit on its own, and then add the two products. The multiplication is different because with two-digit by four-digit multiplication, you end up with products that have 5 or 6 digits. But with two-digit by two-digit multiplication, you end up with products that have 3 or 4 digits.

4. a) For example:

		1000 + 800 + 90 + 9			
10	10 000	8000	900	90	18 990
+					
9	9000	7200	810	81	17 091
	19 000	15 200	1710	171	36 081

or: 1899
 $\times 19$

 17 091
 18 990

 36 081

He climbed 36 081 cm, or just over 360 m.

- b) For example, this is reasonable because 1899×19 should be a little less than $1900 \times 20 = 38\,000$.
5. a) 3335. Round 23 to 20 and 145 to 150, and then $20 \times 150 = 3000$; so 3335 is reasonable.
 - b) 18 450. Round 75 to 100 and 246 to 200, and then $100 \times 200 = 20\,000$; so 18 450 is reasonable.
 - c) 213 976. Round 56 to 60 and 3821 to 4000, and then $60 \times 4000 = 240\,000$; so 213 976 is reasonable.
 - d) 624 775. Round 9325 to 10 000, and then $67 \times 10\,000 = 670\,000$; so 624 775 is reasonable.
6. a) 3168 cm
 - b) Yes. For example, $30\text{ m} = 3000\text{ cm}$, so 3168 cm is more than 30 m.
 - c) For example, the first calculation (18×11) is reasonable because it is close to $20 \times 10 = 200$. The second calculation (198×16) is reasonable because it is between $200 \times 10 = 2000$ and $200 \times 20 = 4000$.
7. a) 1228 coins

b) For example:

		1000 + 200 + 20 + 8			
20	20 000	4000	400	160	24 560
+					
8	8000	1600	160	64	9 824
	28 000	5600	560	224	34 384

or: 1228
 $\times 28$

 9 824
 24 560

 34 384

The length is 34 384 mm.

- c) For example, $30\text{ m} = 30\,000\text{ mm}$, so 34 384 mm is longer than 30 m.
 - d) For example, the answer should be close to $1200 \times 30 = 36\,000$.
8. a) For example, if one can of juice contains 335 mL, how much juice is in a case of 24 cans?
 - b) 8520 mL
 - c) For example, the answer should be between $24 \times 300 = 7200$ and $24 \times 400 = 9600$.