G4-M2-Lesson 1

1. Find the equivalent measures.

   a. 3 km = 3,000 m

   I know that 1 kilometer equals 1,000 meters.

   b. 4 m = 400 cm

   I know that 1 meter equals 100 centimeters.

2. Find the equivalent measures.

   a. 2 km 345 m = 2,345 m

   b. 4 m 23 cm = 423 cm

   c. 12 km 45 m = 12,045 m

   I know that 12 kilometers equals 12,000 meters, so I add 12,000 meters plus 45 meters.

   d. 24 m 3 cm = 2,403 cm

   I know that 24 meters equals 2,400 centimeters, so I add 2,400 meters plus 3 centimeters.

3. Solve.

   a. 3 m – 42 cm

Sample Student A Response:

3 m = 300 cm

	2	9	10	
	~~3~~	~~0~~	~~0~~	cm
–		4	2	cm
	2	5	8	cm

Before subtracting, I make like units. 3 meters is equal to 300 centimeters.

I'll use the arrow way to add up. I add centimeters and meters that make the next whole.

Sample Student B Response:

8 cm + 50 cm + 2 m = 2 m 58 cm

I add 8 cm to make the next ten, 50 cm. I add 50 cm to make the next meter, and 1 meter is 2 meters away from 3 meters.

Now I'll add all the parts circled, finding 2 meters 58 centimeters is the difference of 3 meters and 42 centimeters.

b. 32 m 14 cm − 8 m 63 cm

Sample Student A Response:

	2	11		0	11	
	~~3~~	~~1~~		~~1~~	~~1~~	4
	~~3~~	~~2~~	m		~~1~~	~~4~~ cm
−		8	m		6	3 cm
	2	3	m		5	1 cm

14 cm is not enough to take away 63 cm, so I rename 1 meter as 100 cm to make 114 cm.

Sample Student B Response:

(+ 37 cm) (+ 23 m) (+ 14 cm)

8 m 63 cm → 9 m → 32 m → 32 m 14 cm

37 cm + 23 m + 14 cm = 23 m 51 cm

Using the arrow way, I'll add up from 8 m 63 cm until I reach 32 m 14 cm. It's almost like a number line!

c. 3 km 742 m + 9 km 473 m

Sample Student A Response:

	3	km		7	4	2	m
+	9	km		4	7	3	m
				1			
1	2	km	1	2	1	5	m

1 km 215 m

13 km 215 m

1,215 meters can be renamed using a number bond as 1 km 215 m.

Sample Student B Response:

742 m + 473 m

700 42 300 173

700 m + 300 m = 1 km

42 m + 173 m = 215 m

3 km + 9 km + 1 km = 13 km

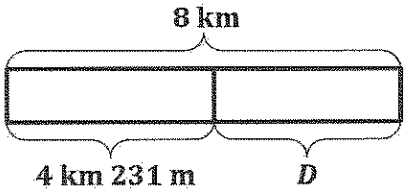
13 km 215 m

I pull out 700 m and 300 m to make 1 km.

I add the remaining meters.

Use a tape diagram to model each problem. Solve using a simplifying strategy or an algorithm, and write your answer as a statement.

4. Kya's mom drove 4 km 231 m from work to the grocery store. She drove some more miles from the grocery store to her house. If she drove a total of 8 km, how far was it from her work to her house?



	7			9	9	10	
	~~8~~	km		1	~~0~~	~~0~~	~~0~~ m
−	4	km		2	3	1	m
	3	km		7	6	9	m

I rename 8 km as 7 km 1000 m so that I have meters to subtract from.

It is 3 km 769 m *from her work to her house.*