

Name _____

Date _____

1. Find the equivalent measures.

a. 1 km = _____ m

b. 4 km = _____ m

c. 7 km = _____ m

d. _____ km = 18,000 m

e. 1 m = _____ cm

f. 3 m = _____ cm

g. 80 m = _____ cm

h. _____ m = 12,000 cm

2. Find the equivalent measures.

a. 3 km 312 m = _____ m

b. 13 km 27 m = _____ m

c. 915 km 8 m = _____ m

d. 3 m 56 cm = _____ cm

e. 14 m 8 cm = _____ cm

f. 120 m 46 cm = _____ cm

3. Solve.

a. 4 km – 280 m =

b. 1 m 15 cm – 34 cm =

c. Express your answer in the smaller of the two units:

1 km 431 m + 13 km 169 m =

d. Express your answer in the smaller of the two units:

231 m 31 cm – 14 m 48 cm =

e. 67 km 230 m + 11 km 879 m =

f. 67 km 230 m – 11 km 879 m =

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

- The length of Carter's driveway is 12 m 38 cm. His neighbor's driveway is 4 m 99 cm longer. How long is the neighbor's driveway?
- Enya walked 2 km 309 m from school to the store. Then she walked from the store to her home. If she walked a total of 5 km, how far was it from the store to her home?
- Rachael has a rope 5 m 32 cm long that she cut into two pieces. One piece is 249 cm long. How many centimeters long is the other piece of rope?
- Jason rode his bike 529 fewer meters than Allison. Jason rode 1 km 850 m. How many meters did Allison ride?



Lesson 1:

Express metric length measurements in terms of a smaller unit; model and solve addition and subtraction word problems involving metric length.

Date:

7/3/13



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#).

engage^{ny}

2.A.13

Name _____

Date _____

1.

Distance	
71 km	_____ m
_____ km	30,000 m
81 m	_____ cm
_____ m	400 cm

2. $13 \text{ km } 20 \text{ m} = \underline{\hspace{2cm}} \text{ m}$

3. $401 \text{ km } 101 \text{ m} - 34 \text{ km } 153 \text{ m} = \underline{\hspace{2cm}}$

4. Gabe built a toy tower that measured 1 m 78 cm. After building some more, he measured it, and it was 82 cm taller. How tall is his tower now? Draw a tape diagram to model this problem. Use a simplifying strategy or an algorithm to solve and write your answer as a statement.

Name _____

Date _____

1. Find the equivalent measures.

a. 5 km = _____ m

b. 13 km = _____ m

c. _____ m = 17,000 m

d. 60 km = _____ m

e. 7 m = _____ cm

f. 19 m = _____ cm

g. _____ m = 2,400 cm

h. 90 m = _____ cm

2. Find the equivalent measures.

a. 7 km 123 m = _____ m

b. 22 km 22 m = _____ m

c. 875 km 4 m = _____ m

d. 7 m 45 cm = _____ cm

e. 67 m 7 cm = _____ cm

f. 204 m 89 cm = _____ cm

3. Solve.

a. 2 km 303 m – 556 m =

b. 2 m – 54 cm =

c. Express your answer in the smaller of the two units:

338 km 853 m + 62 km 71 m =

d. Express your answer in the smaller of the two units:

800 m 35 cm – 154 m 49 cm =

e. 701 km – 523 km 445 m =

f. 231 km 811 m + 485 km 829 m =

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

4. The length of Celia's garden is 15 m 24 cm. The length of her friend's garden is 2 m 98 cm more than Celia's. What is the length of her friend's garden?

5. Sylvia ran 3 km 290 m in the morning. Then she ran some more in the evening. If she ran a total of 10 km, how far did she run in the evening?

6. Jenny's sprinting distance was 356 meters shorter than Tyler's. Tyler sprinted a distance of 1 km 3 m. How many meters did Jenny sprint?

7. The electrician had 7 m 23 cm of electrical wire. He used 551 cm for one wiring project. How many centimeters of wire did he have left?

Name _____

Date _____

1. Complete the table.

Mass	
kg	g
1	1,000
3	
	4,000
17	
	20,000
300	

2. Find the equivalent measures.

a. $1 \text{ kg } 500 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

b. $3 \text{ kg } 715 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

c. $17 \text{ kg } 84 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

d. $25 \text{ kg } 9 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

e. $\underline{\hspace{1cm}} \text{ kg } \underline{\hspace{1cm}} \text{ g} = 7,481 \text{ g}$

f. $210 \text{ kg } 90 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

3. Solve.

a. $3,715 \text{ g} - 1,500 \text{ g} =$

b. $1 \text{ kg} - 237 \text{ g} =$

c. Express the answer in the smaller unit:
 $25 \text{ kg } 9 \text{ g} + 24 \text{ kg } 991 \text{ g} =$

d. Express the answer in the smaller unit:
 $27 \text{ g } 650 \text{ g} - 20 \text{ kg } 990 \text{ g} =$

e. Express the answer in mixed units:
 $14 \text{ kg } 505 \text{ g} - 4,288 \text{ g} =$

f. Express the answer in mixed units:
 $5 \text{ kg } 658 \text{ g} + 57,481 \text{ g} =$

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

4. One package weighs 2 kg 485 g. Another package weighs 5 kg 959 g. What is the total weight of the two packages?



5. Together, a pineapple and a watermelon weigh 6 kg 230 g. If the pineapple weighs 1 kg 255 g, how much does the watermelon weigh?
6. Javier's dog weighs 3,902 grams more than Bradley's dog. Bradley's dog weighs 24 kg 175 g. How much does Javier's dog weigh?

7. The table below shows the weight of three Grade 4 students.

Student	Weight
Isabel	35 kg
Irene	29 kg 38 g
Sue	29,238 g

How much heavier is Isabel than the lightest student?

Name _____

Date _____

1. Find the equivalent measures.

a. 21 kg 415 g = _____ g

c. 87 kg 17 g = _____ g

b. 2 kg 91 g = _____ g

d. _____ kg _____ g = 96,020 g

Directions: Use a tape diagram to model and solve the problems below.

The table below shows the weight of three dogs.

Dog	Weight
Great Dane	59 kg
Golden Retriever	32 kg 48 g
Chihuahua	1,329 g

2. Put the three dogs in order from lightest to heaviest.

3. How much more does the Great Dane weigh than the Chihuahua?

Name _____

Date _____

1. Complete the table.

Mass	
kg	g
1	1,000
6	
	8,000
15	
	24,000
550	

2. Find the equivalent measures.

a. 2 kg 700 g = _____ g

b. 5 kg 945 g = _____ g

c. 29 kg 58 g = _____ g

d. 31 kg 3 g = _____ g

e. 66,597 g = _____ kg _____ g

f. 270 kg 41 g = _____ g

3. Solve.

a. 370 g + 80 g =

b. 5 kg – 730 g =

c. Express the answer in the smaller unit:
27 kg 547g + 694 g =

d. Express the answer in the smaller unit:
16 kg + 2,800 g =

e. Express the answer in mixed units:
4 kg 229 g – 355 g =

f. Express the answer in mixed units:
70 kg 101 g – 17 kg 862 g =

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

4. One suitcase weighs 23 kg 696 g. Another suitcase weighs 25 kg 528 g. What is the total weight of the two suitcases?
5. A bag of potatoes and a bag of onions weigh 11 kg 15 g. If the bag of potatoes weighs 7 kg 300 g, how much does the bag of onions weigh?
6. The table below shows the weight of three dogs.

Student	Weight
Lassie	21 kg 249 g
Riley	23 kg 128 g
Fido	21,268 g

What is the weight difference between the heaviest and lightest dog?

Name _____

Date _____

1. Complete the table.

Liquid Capacity	
L	mL
1	1,000
5	
38	
	49,000
54	
	92,000

2. Find the missing numbers.

a. 2 L 500 mL = _____ mL

b. 70 L 850 mL = _____ mL

c. 33 L 15 mL = _____ mL

d. 2 L 8 mL = _____ mL

e. 3,812 mL = _____ L _____ mL

f. 86,003 mL = _____ L _____ mL

3. Solve.

a. 1,760 mL + 40 L =

b. 7 L – 3,400 mL =

c. Express the answer in the smaller unit:

25 L 478 mL + 3 L 812 mL =

d. Express the answer in the smaller unit:

21 L – 2 L 8 mL =

e. Express the answer in mixed units:

7 L 425 mL – 547 mL =

f. Express the answer in mixed units:

31 L 433 mL – 12 L 876 mL =

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

4. John's mother combined 3,500 milliliters of tropical drink, 3 liters 95 milliliters of ginger ale, and 1 liter 600 milliliters of pineapple juice to make punch.
 - a. Order the quantity of each drink from least to greatest.

 - b. How much punch did John's mother make?

5. A family drank 1 liter 210 milliliters of milk at breakfast. If there were 3 liters of milk before breakfast, how much milk is left?

6. Petra's fish tank contains 9 liters 578 milliliters of water. If the tank can hold 12 liters 455 milliliters of water, how many more milliliters of water does she need to fill the tank?



Name _____

Date _____

1. Find the missing numbers.

a. 6 L 127 mL = _____ mL

b. 706 L 220 mL = _____ mL

c. 12 L 9 mL = _____ mL

d. _____ L _____ mL = 906,010 mL

2. 81 L 603 mL – 22 L 489 mL =

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

3. The Smith's hot tub has a capacity of 1,458 liters. Mrs. Smith put 487 liters 750 milliliters of water in the tub. How much water needs to be added to fill the hot tub completely?

Name _____

Date _____

1. Complete the table.

Liquid Capacity	
L	mL
1	1,000
8	
27	
	39,000
68	
	102,000

2. Find the missing numbers.

a. 5 L 850 mL = _____ mL

b. 29 L 303 mL = _____ mL

c. 37 L 37 mL = _____ mL

d. 17 L 2 mL = _____ mL

e. 13,674 mL = _____ L _____ mL

f. 275,005 mL = _____ L _____ mL

3. Solve.

a. 545 mL + 48 mL =

b. 8 L – 5,740 mL =

c. Express the answer in the smaller unit:

27 L 576 mL + 784 mL =

d. Express the answer in the smaller unit:

27 L + 3,100 mL =

e. Express the answer in mixed units:

9 L 213 mL – 638 mL =

f. Express the answer in mixed units:

41 L 724 mL – 28 L 945 mL =

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

- Sammy's bucket was filled with 2,530 milliliters of water, Marie's bucket was filled with 2 liters 30 milliliters of water, and Katie's bucket was filled with 2 liters 350 milliliters of water. Whose bucket had the least amount of water?
- At football practice, the water jug was filled with 18 liters 530 milliliters of water. At the end of practice, there were 795 milliliters left. How much water did the team drink?
- 27, 545 milliliters of the car's gas were used. Then 19 liters 878 milliliters more were used. If the gas tank can hold 56 liters 202 milliliters of gas, how much gas remains?



Lesson 3:

Express metric capacity measurements in terms of a smaller unit; model and solve addition and subtraction word problems involving metric capacity.

Date:

8/5/13



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#).

engage^{ny}

2.A.43

A

Correct _____

Write in meters and centimeters.

1	3 m + 1 m =	m	cm	23	3 m 10 cm + 1 m 1 cm =	m	cm
2	4 m + 2 m =	m	cm	24	3 m 10 cm + 2 m 2 cm =	m	cm
3	2 m + 3 m =	m	cm	25	3 m 10 cm + 3 m 3 cm =	m	cm
4	5 m + 4 m =	m	cm	26	3 m 20 cm + 3 m 3 cm =	m	cm
5	2 m + 2 m =	m	cm	27	6 m 30 cm + 2 m 20 cm =	m	cm
6	3 m + 3 m =	m	cm	28	8 m 30 cm + 2 m 20 cm =	m	cm
7	4 m + 4 m =	m	cm	29	6 m 50 cm + 2 m 25 cm =	m	cm
8	5 m + 5 m =	m	cm	30	6 m 25 cm + 2 m 25 cm =	m	cm
9	5 m 7 cm + 1 m =	m	cm	31	4 m 70 cm + 1 m 10 cm =	m	cm
10	6 m 7 cm + 1 m =	m	cm	32	4 m 80 cm + 1 m 10 cm =	m	cm
11	7 m 7 cm + 1 m =	m	cm	33	4 m 90 cm + 1 m 10 cm =	m	cm
12	9 m 7 cm + 1 m =	m	cm	34	4 m 90 cm + 1 m 20 cm =	m	cm
13	9 m 7 cm + 1 cm =	m	cm	35	4 m 90 cm + 1 m 60 cm =	m	cm
14	5 m 7 cm + 1 cm =	m	cm	36	5 m 75 cm + 2 m 25 cm =	m	cm
15	3 m 7 cm + 1 cm =	m	cm	37	5 m 75 cm + 2 m 50 cm =	m	cm
16	3 m 7 cm + 3 cm =	m	cm	38	4 m 90 cm + 3 m 50 cm =	m	cm
17	6 m 70 cm + 10 cm =	m	cm	39	5 m 95 cm + 3 m 25 cm =	m	cm
18	6 m 80 cm + 10 cm =	m	cm	40	4 m 85 cm + 3 m 25 cm =	m	cm
19	6 m 90 cm + 10 cm =	m	cm	41	5 m 85 cm + 3 m 45 cm =	m	cm
20	6 m 90 cm + 20 cm =	m	cm	42	4 m 87 cm + 3 m 76 cm =	m	cm
21	6 m 90 cm + 30 cm =	m	cm	43	6 m 36 cm + 4 m 67 cm =	m	cm
22	6 m 90 cm + 60 cm =	m	cm	44	9 m 74 cm + 8 m 48 cm =	m	cm

© Bill Davidson

Name _____

Date _____

1. Complete the following table.

Smaller Unit	Larger Unit	How Many Times as Large
one	hundred	100
centimeter		100
one	thousand	1,000
gram		1,000
meter	kilometer	
milliliter		1,000
centimeter	kilometer	

2. Fill in the units in word form.

- a. 429 is 4 hundreds 29 _____. b. 429 cm is 4 _____ 29 cm.
- c. 2,456 is 2 _____ 456 ones. d. 2,456 m is 2 _____ 456 m.
- e. 13,709 is _____ thousands 709 ones. f. 13,709 g is 13 kg 709 _____.

3. Fill in the missing number.

- a. _____ is 456 thousands 829 ones. b. _____ mL is 456 L 829 mL.

4. Use words, equations, and pictures to show and explain how metric units are like and not like place value units.

5. Compare using $>$, $<$, or $=$.

a. 893,503 mL 89 L 353 mL

b. 410 km 3 m 4,103 m

c. 5,339 m 533,900 cm

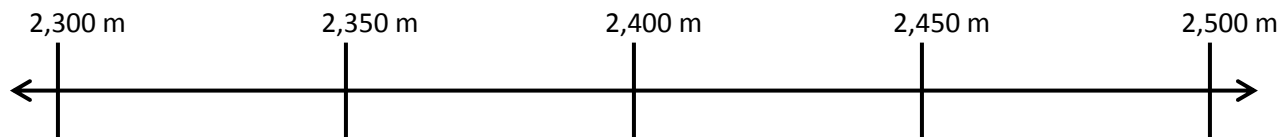
6. Place the following measurements on the number line:

2 km 415 m

2,379 m

2 km 305 m

245,500 cm



7. Place the following measurements on the number line:

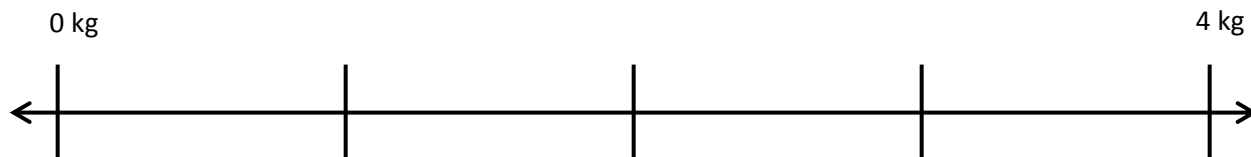
2 kg 900 g

3,500 g

1 kg 500 g

2,900 g

750 g



8. Solve.

a. 739 m 17 cm + 473 m 83 cm = _____ m \approx _____ km

b. Use the numbers from Problem 8(a) to write a word problem.

Name _____

Date _____

1. Fill in the missing unit in word form.

a. 8,135 is 8 _____ 135 ones.

b. 8,135 kg is 8 _____ 135 g.

2. _____ mL is equal to 342 L 645 mL.

3. Compare using $>$, $<$, or $=$.a. 23 km 40 m 2,340 mb. 13,798 mL 137 L 980 mLc. 5,607 m 560,701 cm

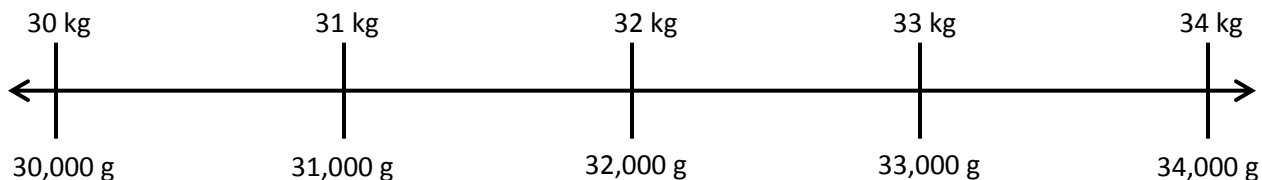
4. Place the following measurements on the number line:

33 kg 100 g

31,900 g

32,350 g

30 kg 500 g



Name _____

Date _____

1. Complete the following table.

Smaller Unit	Larger Unit	How Many Times as Large
centimeter	meter	100
	hundred	100
meter	kilometer	
gram		1,000
one		1,000
milliliter		1,000
one	hundred thousand	

2. Fill in the missing unit in word form.

a. 135 is 1 _____ 35 ones.

b. 135 cm is 1 _____ 35 cm.

c. 1,215 is 1 _____ 215 ones.

d. 1,215 m is 1 _____ 215 m.

e. 12,350 is _____ thousands 350 ones.

f. 12,350 g is 12 kg 350 _____.

3. Write the missing number.

a. _____ is 125 thousands 312 ones.

b. _____ mL is 125 L 312 mL.

4. Fill in each with $>$, $<$, or $=$.

a. 890,353 mL 89 L 353 mL

b. 2 km 13 m 2,103 m

5. Brandon's backpack weighs 3,140 grams. Brandon weighs 22 kilograms 610 grams more than his backpack. If Brandon were to stand on a scale wearing his backpack, what would the weight read?

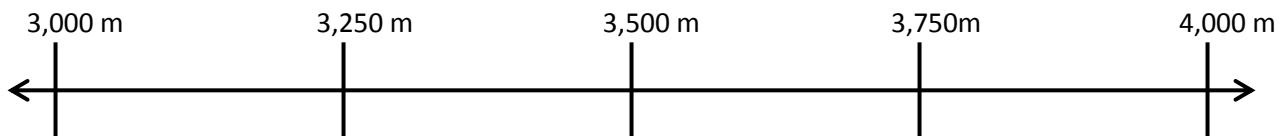
6. Place the following measurements on the number line:

3 km 275 m

3,500 m

3 km 5 m

394,000 cm



7. Place the following measurements on the number line:

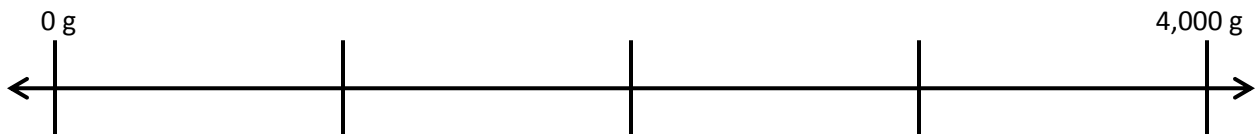
1 kg 379 g

3,079 g

2 kg 79 g

3,579 g

579 g



8. Solve.

a. $356\text{ m } 14\text{ cm} - 179\text{ m } 26\text{ cm} =$ _____

b. Use the numbers from Problem 8(a) to write a word problem.

A

Correct _____

Write in kilograms and grams.

1	2,000 g =	kg	g	23	3,800 g =	kg	g
2	3,000 g =	kg	g	24	4,770 g =	kg	g
3	4,000 g =	kg	g	25	4,807 g =	kg	g
4	9,000 g =	kg	g	26	5,065 g =	kg	g
5	6,000 g =	kg	g	27	5,040 g =	kg	g
6	1,000 g =	kg	g	28	6,007 g =	kg	g
7	8,000 g =	kg	g	29	2,003 g =	kg	g
8	5,000 g =	kg	g	30	1,090 g =	kg	g
9	7,000 g =	kg	g	31	1,055 g =	kg	g
10	6,100 g =	kg	g	32	9,404 g =	kg	g
11	6,110 g =	kg	g	33	9,330 g =	kg	g
12	6,101 g =	kg	g	34	3,400 g =	kg	g
13	6,010 g =	kg	g	35	4,000 g + 2,000 g =	kg	g
14	6,011 g =	kg	g	36	5,000 g + 3,000 g =	kg	g
15	6,001 g =	kg	g	37	4,000 g + 4,000 g =	kg	g
16	8,002 g =	kg	g	38	8 x 7,000 g =	kg	g
17	8,020 g =	kg	g	39	49,000 g ÷ 7 =	kg	g
18	8,200 g =	kg	g	40	16,000 g x 5 =	kg	g
19	8,022 g =	kg	g	41	63,000 g ÷ 7 =	kg	g
20	8,220 g =	kg	g	42	17 x 4,000 g =	kg	g
21	8,222 g =	kg	g	43	13,000 g x 5 =	kg	g
22	7,256 g =	kg	g	44	84,000 g ÷ 7 =	kg	g

© Bill Davidson

B

Improvement _____

Correct _____

Write in kilograms and grams.

1	1,000 g =	kg	g	23	2,700 g =	kg	g
2	2,000 g =	kg	g	24	3,660 g =	kg	g
3	3,000 g =	kg	g	25	3,706 g =	kg	g
4	8,000 g =	kg	g	26	4,095 g =	kg	g
5	6,000 g =	kg	g	27	4,030 g =	kg	g
6	9,000 g =	kg	g	28	5,006 g =	kg	g
7	4,000 g =	kg	g	29	3,004 g =	kg	g
8	7,000 g =	kg	g	30	2,010 g =	kg	g
9	5,000 g =	kg	g	31	2,075 g =	kg	g
10	5,100 g =	kg	g	32	1,504 g =	kg	g
11	5,110 g =	kg	g	33	1,440 g =	kg	g
12	5,101 g =	kg	g	34	4,500 g =	kg	g
13	5,010 g =	kg	g	35	3,000 g + 2,000 g =	kg	g
14	5,011 g =	kg	g	36	4,000 g + 3,000 g =	kg	g
15	5,001 g =	kg	g	37	5,000 g + 4,000 g =	kg	g
16	7,002 g =	kg	g	38	9 x 8,000 g =	kg	g
17	7,020 g =	kg	g	39	64,000 g ÷ 8 =	kg	g
18	7,200 g =	kg	g	40	17,000 g x 5 =	kg	g
19	7,022 g =	kg	g	41	54,000 g ÷ 6 =	kg	g
20	7,220 g =	kg	g	42	18,000 g x 4 =	kg	g
21	7,222 g =	kg	g	43	14 x 5,000 g =	kg	g
22	4,378 g =	kg	g	44	96,000 g ÷ 8 =	kg	g

© Bill Davidson

Name _____

Date _____

Directions: Solve. Model the problems using a tape diagram. Answer with a statement.

1. The potatoes Beth bought weighed 3 kilograms 420 grams. Her onions weighed 1,050 grams less than the potatoes. How much did the potatoes and onions weigh altogether?



2. Adele let out 18 m 46 cm of string to fly her kite. She then let out 13 m 78 cm more before reeling back in 5 m 90 cm. How long was her string after reeling it in?



3. Shyan's barrel contained 6 liters 775 milliliters of paint. She poured in 1 liters 118 milliliters more. The first day Shyan used 2 liters 125 milliliters of the paint. At the end of the second day, there was 1 liters 769 milliliters of paint remaining in the barrel. How much paint did Shyan use on the second day?

4. On Thursday, the pizzeria used 2 kilograms 180 grams less flour than they used on Friday. On Friday, they used 12 kilograms 240 grams. On Saturday, they used 1 kilogram 888 grams more than on Friday. What was the total amount of flour used over the three days?



5. Zachary's car holds 60 liters of gas. When he had 2,050 milliliters of gas left, he added 23 liters 825 milliliters gas. How much more gas can Zachary add to his car?
6. A giraffe was 5 m 20 cm tall. An elephant was 1 m 77 cm shorter than the giraffe. A rhinoceros was 1 m 58 cm shorter than the elephant. How tall was the rhinoceros?

Name _____

Date _____

Use a tape diagram to model and solve the problems below.

1. Jeff places a pineapple with a mass of 890 grams on a balance scale. He balances the scale by placing two oranges, an apple, and a lemon on the other side. Each orange weighs 280 grams. The lemon weighs 195 grams less than each orange. What is the mass of the apple?



2. Brian is 1 m 87 cm tall. Bonnie is 58 cm shorter than Brian. Betina is 26 cm taller than Bonnie. How tall is Betina?

Name _____ Date _____

Directions: Solve. Model the problems using a tape diagram. Answer with a statement.

1. Jose's vase can hold up to 2,419 milliliters of water. He poured 1 liter 299 milliliters of water into the empty vase. Then he added 398 milliliters. How much more water will the vase hold?
2. Eric biked 1 km 125 m on Monday. On Tuesday, he biked 375 m less than on Monday. How far did he bike both days?
3. Zachary weighs 37 kilograms 95 grams. Gabe weighs 4,650 grams less than Zachary. Harry weighs 2,905 grams less than Gabe. How much does Harry weigh?

4. A Springer Spaniel weighs 20 kilograms 490 grams. A Cocker Spaniel weighs 7,590 grams less than a Springer Spaniel. A Newfoundland weighs 52 kilograms 656 grams more than a Cocker Spaniel. What is the weight difference, in grams, between the Newfoundland and the Springer Spaniel?
5. Marsha has three rugs. The first rug is 2 m 87 cm long. The second rug has a length 98 cm less than the first. The third rug is 111 cm longer than the second rug. What is the difference in centimeters between the length of the first rug and third rug?
6. One barrel held 60 liters 868 milliliters of sap. A second barrel held 20,089 milliliters more sap than the first. A third barrel held 40 liters 82 milliliters less sap than the second. If the sap from the three barrels was poured into a larger container, how much sap was there in all?

Name _____

Date _____

1. Complete the following conversion charts:

Length	
3 km	_____ m
_____ km	9,000 m
6 km 435 m	_____ m
12 km 12 m	_____ m

Mass	
_____ kg	3,000 g
20 kg 300 g	_____ g
1 kg 74 g	_____ g
403 kg 4 g	_____ g

Capacity	
_____ L	4,000 mL
48 L 808 mL	_____ mL
2 L 20 mL	_____ mL
639 L 6 mL	_____ mL

2. A student completed the problem below. Check his work. Explain how you know if each solution is correct or incorrect.

Convert the following measurements:

a. 24 km = 24,000 m

b. 16 L = 16,000 mL

c. 38 kg = 3,800 g

3. Find the sum or difference. Use the boxes to show your work.

a.	493 km 543 m + 17 km 57 m	b.	25 kg 32 g - 23 kg 83 g	c.	100 L 99 mL + 2,999 mL
<p>d. Write a word problem for which (a), (b), or (c) would be the solution equation.</p>					

4. Billy has been training for a half-marathon. He has a strict gym routine that he follows six times a week. For the problems below, use tape diagrams, numbers, and words to explain each answer.
- a. Each day Billy runs on the treadmill for 5 kilometers and runs on the outdoor track for 6,000 meters. In all, how many kilometers does Billy run each day?
- b. Since Billy has started training, he has also been drinking more water. On Saturday, he drank 2 L 755 mL of water. On Sunday, he drank some more. If Billy drank a total of 4 L 255 mL of water on Saturday and Sunday, how many milliliters of water did Billy drink on Sunday?
- c. Since exercising so much for his half-marathon, Billy has been losing weight. In his first week of training, he lost 2 kg 530 g of weight. In the following two weeks of training, he lost 1 kg 855 g per week. Billy now weighs 61 kg 760 g. What was Billy's weight, in grams, before he started training? Explain your thinking.