EUREKA MATH PUSD

A Story of Units

Pleasanton UNIFIED SCHOOL DISTRICT Mathematics Curriculum

Grade 3 • MODULE 2

Place Value and Problem Solving with Units of Measure

Homework

Video tutorials: http://embarc.online
Info for parents: http://bit.ly/pusdmath

Version 3

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GRADE 3 • MODULE 2

Place Value and Problem Solving with Units of Measure

Name _____ Date _____

1. The table to the right shows how much time it takes each of the 5 students to run 100 meters.

Samantha	**19 seconds**
Melanie	**22 seconds**
Chester	**26 seconds**
Dominique	**18 seconds**
Louie	**24 seconds**

   a. Who is the fastest runner?

   b. Who is the slowest runner?

   c. How many seconds faster did Samantha run than Louie?

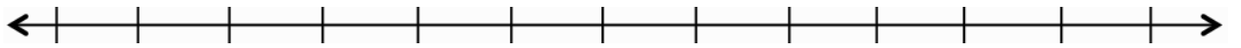
2. List activities at home that take about the following amounts of time to complete. If you do not have a stopwatch, you can use the strategy of counting by *1 Mississippi, 2 Mississippi, 3 Mississippi*, ….

Time	Activities at home
30 seconds	Example: Tying shoelaces
45 seconds	
60 seconds	

3. Match the analog clock with the correct digital clock.

Name _____ Date _____

Follow the directions to label the number line below.



a. The basketball team practices between 4:00 p.m. and 5:00 p.m. Label the first and last tick marks as 4:00 p.m. and 5:00 p.m.

b. Each interval represents 5 minutes. Count by fives starting at 0, or 4:00 p.m. Label each 5-minute interval below the number line up to 5:00 p.m.

c. The team warms up at 4:05 p.m. Plot a point on the number line to represent this time. Above the point, write *W*.

d. The team shoots free throws at 4:15 p.m. Plot a point on the number line to represent this time. Above the point, write *F*.

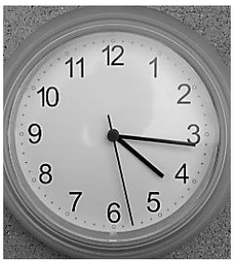
e. The team plays a practice game at 4:25 p.m. Plot a point on the number line to represent this time. Above the point, write *G*.

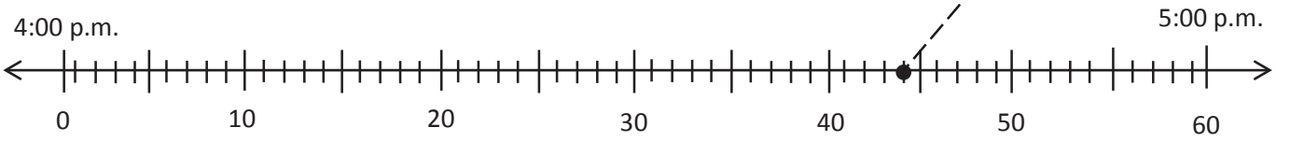
f. The team has a water break at 4:50 p.m. Plot a point on the number line to represent this time. Above the point, write *B*.

g. The team reviews their plays at 4:55 p.m. Plot a point on the number line to represent this time. Above the point, write *P*.

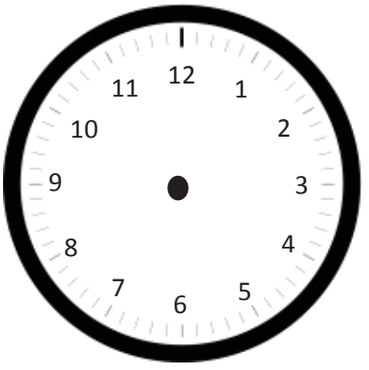
Name _____ Date _____

1. Plot points on the number line for each time shown on a clock below. Then, draw lines to match the clocks to the points.

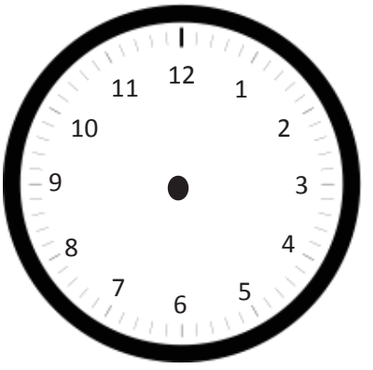




2. Julie eats dinner at 6:07 p.m. Draw hands on the clock below to show what time Julie eats dinner.



3. P.E. starts at 1:32 p.m. Draw hands on the clock below to show what time P.E. starts.



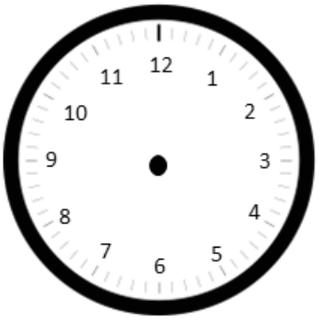
4. The clock shows what time Zachary starts playing with his action figures.

   a. What time does he start playing with his action figures?

Start

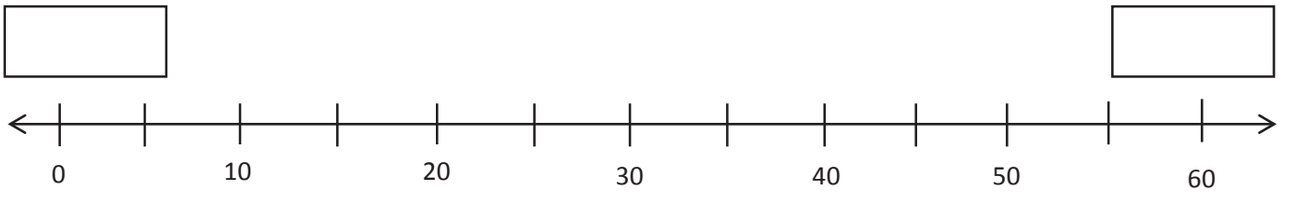
   b. He plays with his action figures for 23 minutes. What time does he finish playing?

Finish



   c. Draw hands on the clock to the right to show what time Zachary finishes playing.

   d. Label the first and last tick marks with 2:00 p.m. and 3:00 p.m. Then, plot Zachary's start and finish times. Label his start time with a *B* and his finish time with an *F*.



Name _____ Date _____

Record your homework start time on the clock in Problem 6.

Use a number line to answer Problems 1 through 4.

1. Joy's mom begins walking at 4:12 p.m. She stops at 4:43 p.m. How many minutes does she walk?

Joy's mom walks for _____ minutes.

2. Cassie finishes softball practice at 3:52 p.m. after practicing for 30 minutes. What time did Cassie's practice start?

Cassie's practice started at _____ p.m.

3. Jordie builds a model from 9:14 a.m. to 9:47 a.m. How many minutes does Jordie spend building his model?

Jordie builds for _____ minutes.

4. Cara finishes reading at 2:57 p.m. She reads for a total of 46 minutes. What time did Cara start reading?

Cara started reading at _____ p.m.

5. Jenna and her mom take the bus to the mall. The clocks below show when they leave their house and when they arrive at the mall. How many minutes does it take them to get to the mall?

Time when they leave home:

Time when they arrive at the mall:

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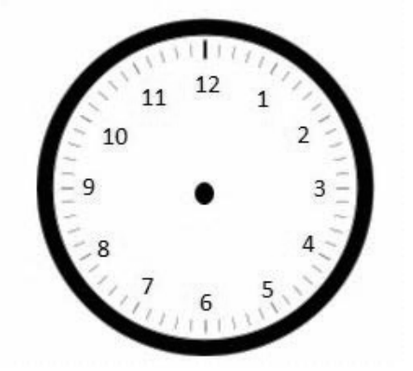
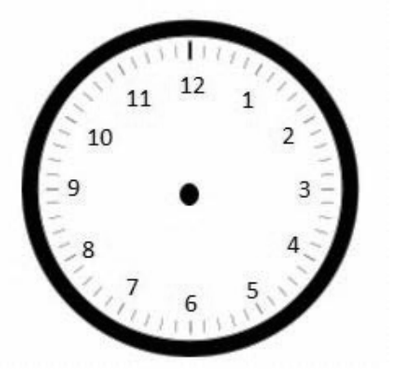
6. Record your homework start time:



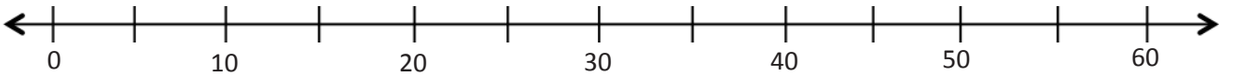
Record the time when you finish Problems 1–5:



How many minutes did you work on Problems 1–5?

Name _____ Date _____

1. Abby spent 22 minutes working on her science project yesterday and 34 minutes working on it today. How many minutes did Abby spend working on her science project altogether? Model the problem on the number line, and write an equation to solve.



Abby spent _____ minutes working on her science project.

2. Susanna spends a total of 47 minutes working on her project. How many more minutes than Susanna does Abby spend working? Draw a number line to model the problem, and write an equation to solve.

3. Peter practices violin for a total of 55 minutes over the weekend. He practices 25 minutes on Saturday. How many minutes does he practice on Sunday?

4. a. Marcus gardens. He pulls weeds for 18 minutes, waters for 13 minutes, and plants for 16 minutes. How many total minutes does he spend gardening?

   b. Marcus wants to watch a movie that starts at 2:55 p.m. It takes 10 minutes to drive to the theater. If Marcus starts the yard work at 2:00 p.m., can he make it on time for the movie? Explain your reasoning.

5. Arelli takes a short nap after school. As she falls asleep, the clock reads 3:03 p.m. She wakes up at the time shown below. How long is Arelli's nap?

Name _____ Date _____

1. Use the chart to help you answer the following questions:

1 kilogram	100 grams	10 grams	1 gram

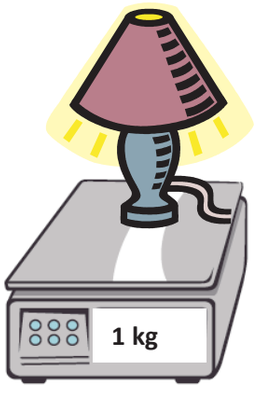
a. Isaiah puts a 10-gram weight on a pan balance. How many 1-gram weights does he need to balance the scale?

b. Next, Isaiah puts a 100-gram weight on a pan balance. How many 10-gram weights does he need to balance the scale?

c. Isaiah then puts a kilogram weight on a pan balance. How many 100-gram weights does he need to balance the scale?

d. What pattern do you notice in Parts (a–c)?

2. Read each digital scale. Write each weight using the word *kilogram* or *gram* for each measurement.



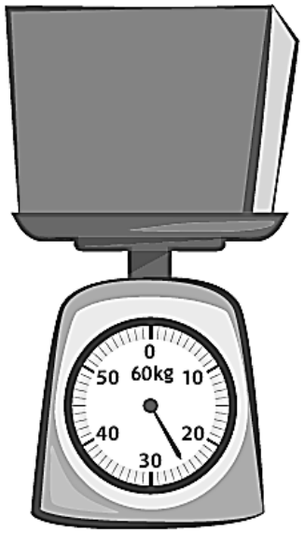
Name _____ Date _____

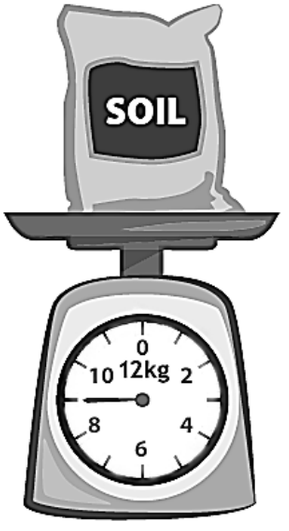
1. Match each object with its approximate weight.

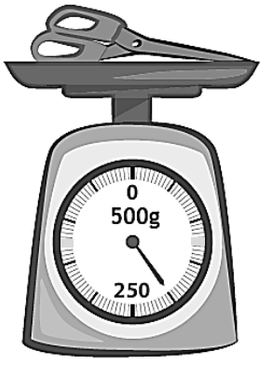
- 100 grams
- 10 grams
- 1 gram
- 1 kilogram

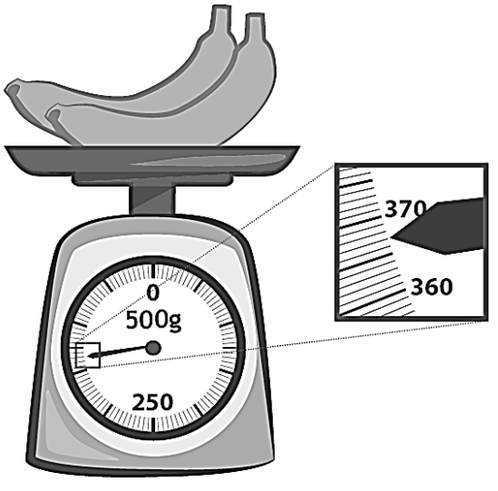
2. Alicia and Jeremy weigh a cell phone on a digital scale. They write down 113 but forget to record the unit. Which unit of measurement is correct, grams or kilograms? How do you know?

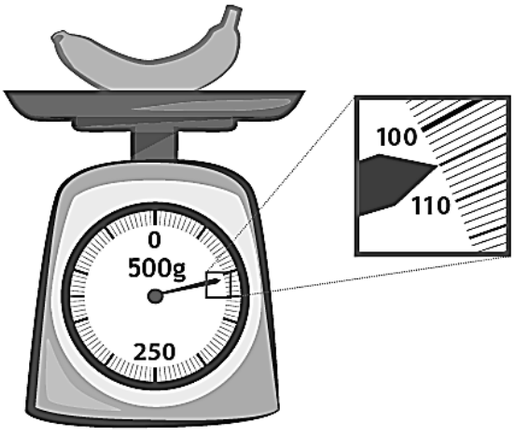
3. Read and write the weights below. Write the word *kilogram* or *gram* with the measurement.





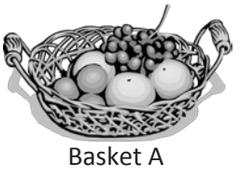






Name _____ Date _____

1. The weights of 3 fruit baskets are shown below.



Basket A
12 kg

Basket B
8 kg

Basket C
16 kg

   a. Basket _____ is the heaviest.

   b. Basket _____ is the lightest.

   c. Basket A is _____ kilograms heavier than Basket B.

   d. What is the total weight of all three baskets?

2. Each journal weighs about 280 grams. What is total weight of 3 journals?

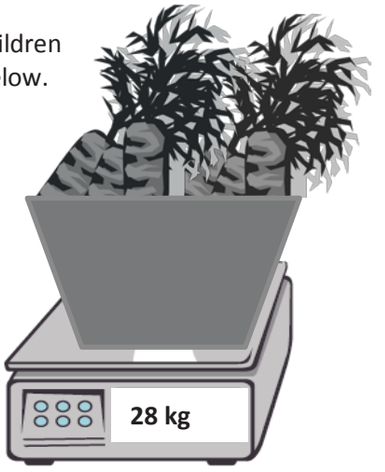
3. Ms. Rios buys 453 grams of strawberries. She has 23 grams left after making smoothies. How many grams of strawberries did she use?

4. Andrea's dad is 57 kilograms heavier than Andrea. Andrea weighs 34 kilograms.

   a. How much does Andrea's dad weigh?

   b. How much do Andrea and her dad weigh in total?

5. Jennifer's grandmother buys carrots at the farm stand. She and her 3 grandchildren equally share the carrots. The total weight of the carrots she buys is shown below.



   a. How many kilograms of carrots will Jennifer get?

   b. Jennifer uses 2 kilograms of carrots to bake muffins. How many kilograms of carrots does she have left?

Name _____ Date _____

1. Find containers at home that have a capacity of about 1 liter. Use the labels on containers to help you identify them.

   a.

Name of Container
Example: Carton of orange juice

   b. Sketch the containers. How do their sizes and shapes compare?

2. The doctor prescribes Mrs. Larson 5 milliliters of medicine each day for 3 days. How many milliliters of medicine will she take altogether?

3. Mrs. Goldstein pours 3 juice boxes into a bowl to make punch. Each juice box holds 236 milliliters. How much juice does Mrs. Goldstein pour into the bowl?

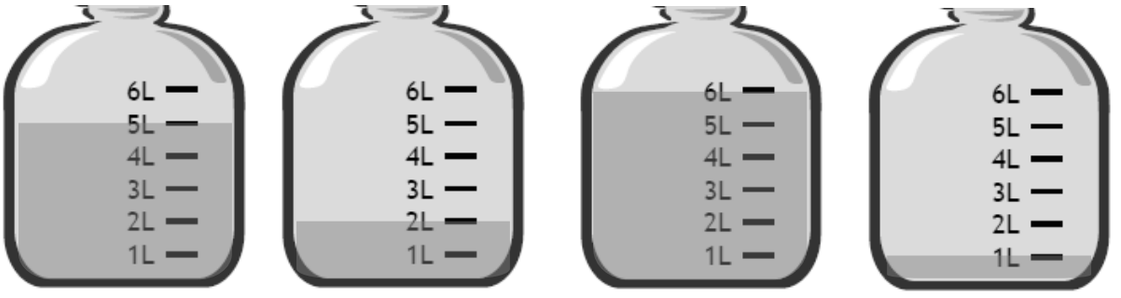
4. Daniel's fish tank holds 24 liters of water. He uses a 4-liter bucket to fill the tank. How many buckets of water are needed to fill the tank?

5. Sheila buys 15 liters of paint to paint her house. She pours the paint equally into 3 buckets. How many liters of paint are in each bucket?

Name _____ Date _____

1. How much liquid is in each container?

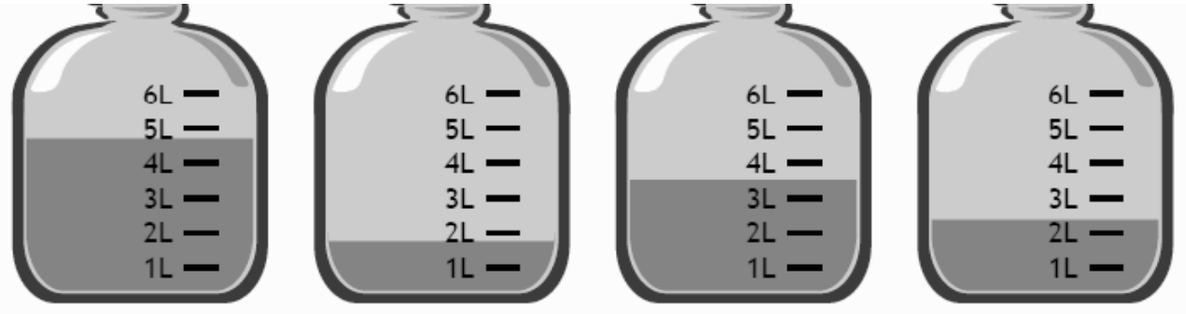
Container 1 *Container 2* *Container 3* *Container 4*



_____ _____ _____ _____

2. Jon pours the contents of Container 1 and Container 3 above into an empty bucket. How much liquid is in the bucket after he pours the liquid?

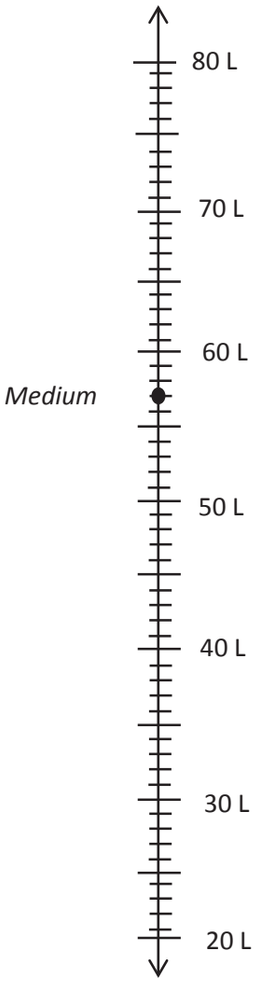
3. Estimate the amount of liquid in each container to the nearest liter.



_____ _____ _____ _____

4. Kristen is comparing the capacity of gas tanks in different size cars. Use the chart below to answer the questions.

Size of Car	Capacity in Liters
Large	74
Medium	57
Small	42



a. Label the number line to show the capacity of each gas tank. The medium car has been done for you.

b. Which car's gas tank has the greatest capacity?

c. Which car's gas tank has the smallest capacity?

d. Kristen's car has a gas tank capacity of about 60 liters. Which car from the chart has about the same capacity as Kristen's car?

e. Use the number line to find how many more liters the large car's tank holds than the small car's tank.

Name _____ Date _____

1. Karina goes on a hike. She brings a notebook, a pencil, and a camera. The weight of each item is shown in the chart. What is the total weight of all three items?

Item	Weight
Notebook	312 g
Pencil	10 g
Camera	365 g

The total weight is _____ grams.

2. Together a horse and its rider weigh 729 kilograms. The horse weighs 625 kilograms. How much does the rider weigh?

The rider weighs _____ kilograms.

3. Theresa's soccer team fills up 6 water coolers before the game. Each water cooler holds 9 liters of water. How many liters of water do they fill?

4. Dwight purchased 48 kilograms of fertilizer for his vegetable garden. He needs 6 kilograms of fertilizer for each bed of vegetables. How many beds of vegetables can he fertilize?

5. Nancy bakes 7 cakes for the school bake sale. Each cake requires 5 milliliters of oil. How many milliliters of oil does she use?

Name _____ Date _____

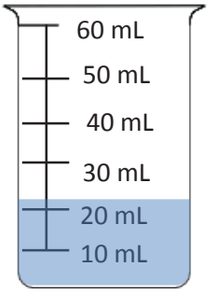
1. Complete the chart. Choose objects, and use a ruler or meter stick to complete the last two on your own.

Object	Measurement (in cm)	The object measures between (which two tens)…	Length rounded to the nearest 10 cm
Length of desk	66 cm	_____ and _____ cm	
Width of desk	48 cm	_____ and _____ cm	
Width of door	81 cm	_____ and _____ cm	
		_____ and _____ cm	
		_____ and _____ cm	

2. Gym class ends at 10:27 a.m. Round the time to the nearest 10 minutes.

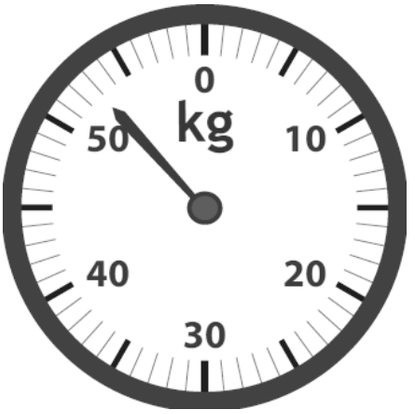
Gym class ends at about _____ a.m.

3. Measure the liquid in the beaker to the nearest 10 milliliters.



There are about _____ milliliters in the beaker.

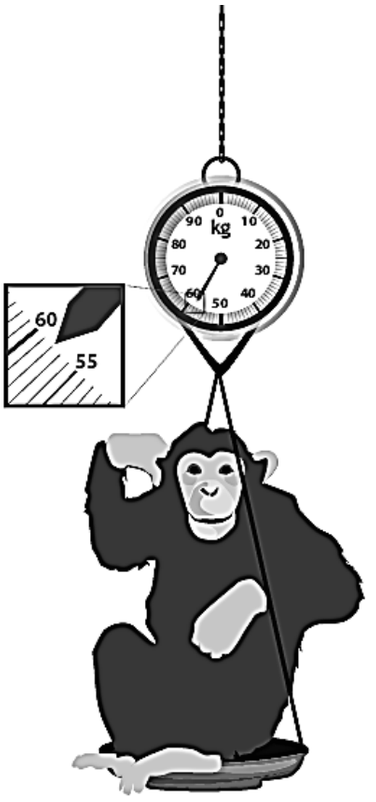
4. Mrs. Santos' weight is shown on the scale. Round her weight to the nearest 10 kilograms.



Mrs. Santos' weight is _____ kilograms.

Mrs. Santos weighs about _____ kilograms.

5. A zookeeper weighs a chimp. Round the chimp's weight to the nearest 10 kilograms.



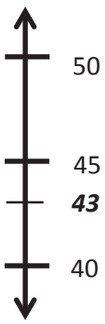
The chimp's weight is _____ kilograms.

The chimp weighs about _____ kilograms.

Name _____ Date _____

1. Round to the nearest ten. Use the number line to model your thinking.

a. 43 ≈ _____



b. 48 ≈ _____

c. 73 ≈ _____

d. 173 ≈ _____

e. 189 ≈ _____

f. 194 ≈ _____

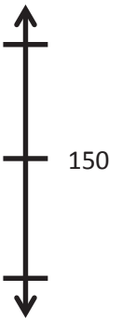
2. Round the weight of each item to the nearest 10 grams. Draw number lines to model your thinking.

Item	Number Line	Round to the nearest 10 grams
 **Cereal bar: 45 grams**		
 **Loaf of bread: 673 grams**		

3. The Garden Club plants rows of carrots in the garden. One seed packet weighs 28 grams. Round the total weight of 2 seed packets to the nearest 10 grams. Model your thinking using a number line.

Name _____ Date _____

1. Round to the nearest hundred. Use the number line to model your thinking.

a. 156 ≈ _____ 	b. 342 ≈ _____ 
c. 260 ≈ _____ 	d. 1,260 ≈ _____ 
e. 1,685 ≈ _____ 	f. 1,804 ≈ _____ 

2. Complete the chart.

a. Luis has 217 baseball cards. Round the number of cards Luis has to the nearest hundred.	
b. There were 462 people sitting in the audience. Round the number of people to the nearest hundred.	
c. A bottle of juice holds 386 milliliters. Round the capacity to the nearest 100 milliliters.	
d. A book weighs 727 grams. Round the weight to the nearest 100 grams.	
e. Joanie's parents spent $1,260 on two plane tickets. Round the total to the nearest $100.	

3. Circle the numbers that round to 400 when rounding to the nearest hundred.

368 342 420 492 449 464

4. There are 1,525 pages in a book. Julia and Kim round the number of pages to the nearest hundred. Julia says it is one thousand, five hundred. Kim says it is 15 hundreds. Who is correct? Explain your thinking.

Name _____ Date _____

1. Find the sums below. Choose mental math or the algorithm.

   a. 75 cm + 7 cm

   c. 362 mL + 229 mL

   e. 451 mL + 339 mL

   b. 39 kg + 56 kg

   d. 283 g + 92 g

   f. 149 L + 331 L

2. The liquid volume of five drinks is shown below.

Drink	Liquid Volume
Apple juice	125 mL
Milk	236 mL
Water	248 mL
Orange juice	174 mL
Fruit punch	208 mL

   a. Jen drinks the apple juice and the water. How many milliliters does she drink in all?

   Jen drinks _____ mL.

   b. Kevin drinks the milk and the fruit punch. How many milliliters does he drink in all?

3. There are 75 students in Grade 3. There are 44 more students in Grade 4 than in Grade 3. How many students are in Grade 4?

4. Mr. Green's sunflower grew 29 centimeters in one week. The next week it grew 5 centimeters more than the previous week. What is the total number of centimeters the sunflower grew in 2 weeks?

5. Kylie records the weights of 3 objects as shown below. Which 2 objects can she put on a pan balance to equal the weight of a 460 gram bag? Show how you know.

Paperback Book	**Banana**	**Bar of Soap**
343 grams	108 grams	117 grams

Name _____ Date _____

1. Find the sums below.

a. 47 m + 8 m

b. 47 m + 38 m

c. 147 m + 383 m

d. 63 mL + 9 mL

e. 463 mL + 79 mL

f. 463 mL + 179 mL

g. 368 kg + 263 kg

h. 508 kg + 293 kg

i. 103 kg + 799 kg

j. 4 L 342 mL + 2 L 214 mL

k. 3 kg 296 g + 5 kg 326 g

2. Mrs. Haley roasts a turkey for 55 minutes. She checks it and decides to roast it for an additional 46 minutes. Use a tape diagram to find the total minutes Mrs. Haley roasts the turkey.

3. A miniature horse weighs 268 fewer kilograms than a Shetland pony. Use the table to find the weight of a Shetland pony.

Types of Horses	Weight in kg
Shetland pony	_____ kg
American Saddlebred	478 kg
Clydesdale horse	_____ kg
Miniature horse	56 kg

4. A Clydesdale horse weighs as much as a Shetland pony and an American Saddlebred horse combined. How much does a Clydesdale horse weigh?

Name _____ Date _____

1. Cathy collects the following information about her dogs, Stella and Oliver.

Stella	
Time Spent Getting a Bath	*Weight*
36 minutes	32 kg

Oliver	
Time Spent Getting a Bath	*Weight*
25 minutes	7 kg

Use the information in the charts to answer the questions below.

a. Estimate the total weight of Stella and Oliver.

b. What is the actual total weight of Stella and Oliver?

c. Estimate the total amount of time Cathy spends giving her dogs a bath.

d. What is the actual total time Cathy spends giving her dogs a bath?

e. Explain how estimating helps you check the reasonableness of your answers.

2. Dena reads for 361 minutes during Week 1 of her school's two-week long Read-A-Thon. She reads for 212 minutes during Week 2 of the Read-A-Thon.

   a. Estimate the total amount of time Dena reads during the Read-A-Thon by rounding.

   b. Estimate the total amount of time Dena reads during the Read-A-Thon by rounding in a different way.

   c. Calculate the actual number of minutes that Dena reads during the Read-A-Thon. Which method of rounding was more precise? Why?

Name _____ Date _____

1. Solve the subtraction problems below.

a. 70 L − 46 L

b. 370 L – 46 L

c. 370 L – 146 L

d. 607 cm − 32 cm

e. 592 cm − 258 cm

f. 918 cm − 553 cm

g. 763 g − 82 g

h. 803 g − 542 g

i. 572 km − 266 km

j. 837 km − 645 km

2. The magazine weighs 280 grams less than the newspaper. The weight of the newspaper is shown below. How much does the magazine weigh? Use a tape diagram to model your thinking.

454 g

3. The chart to the right shows how long it takes to play 3 games.

Lucas's Baseball Game	180 minutes
Joey's Football Game	139 minutes
Francesca's Basketball Game	? minutes

   a. Francesca's basketball game is 22 minutes shorter than Lucas's baseball game. How long is Francesca's basketball game?

   b. How much longer is Francesca's basketball game than Joey's football game?

Name _____ Date _____

1. Solve the subtraction problems below.

a. 280 g – 90 g

b. 450 g – 284 g

c. 423 cm – 136 cm

d. 567 cm – 246 cm

e. 900 g – 58 g

f. 900 g – 358 g

g. 4 L 710 mL – 2 L 690 mL

h. 8 L 830 mL – 4 L 378 mL

2. The total weight of a giraffe and her calf is 904 kilograms. How much does the calf weigh? Use a tape diagram to model your thinking.

3. The Erie Canal runs 584 kilometers from Albany to Buffalo. Salvador travels on the canal from Albany. He must travel 396 kilometers more before he reaches Buffalo. How many kilometers has he traveled so far?

4. Mr. Nguyen fills two inflatable pools. The kiddie pool holds 185 liters of water. The larger pool holds 600 liters of water. How much more water does the larger pool hold than the kiddie pool?

Name _____ Date _____

Estimate, and then solve each problem.

1. Melissa and her mom go on a road trip. They drive 87 kilometers before lunch. They drive 59 kilometers after lunch.

   a. Estimate how many more kilometers they drive before lunch than after lunch by rounding to the nearest 10 kilometers.

   b. Precisely how much farther do they drive before lunch than after lunch?

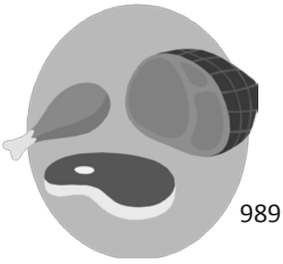
   c. Compare your estimate from (a) to your answer from (b). Is your answer reasonable? Write a sentence to explain your thinking.

2. Amy measures ribbon. She measures a total of 393 centimeters of ribbon and cuts it into two pieces. The first piece is 184 centimeters long. How long is the second piece of ribbon?

   a. Estimate the length of the second piece of ribbon by rounding in two different ways.

   b. Precisely how long is the second piece of ribbon? Explain why one estimate was closer.

3. The weight of a chicken leg, steak, and ham are shown to the right. The chicken and the steak together weigh 341 grams. How much does the ham weigh?



989 grams

   a. Estimate the weight of the ham by rounding.

   b. How much does the ham actually weigh?

4. Kate uses 506 liters of water each week to water plants. She uses 252 liters to water the plants in the greenhouse. How much water does she use for the other plants?

   a. Estimate how much water Kate uses for the other plants by rounding.

   b. Estimate how much water Kate uses for the other plants by rounding a different way.

   c. How much water does Kate actually use for the other plants? Which estimate was closer? Explain why.

Name _____ Date _____

1. There are 153 milliliters of juice in 1 carton. A three-pack of juice boxes contains a total of 459 milliliters.

   a. Estimate, and then find the actual total amount of juice in 1 carton and in a three-pack of juice boxes.

      153 mL + 459 mL ≈ _____ + _____ =_____

      153 mL + 459 mL = _____

   b. Estimate, and then find the actual difference between the amount in 1 carton and in a three-pack of juice boxes.

      459 mL − 153 mL ≈ _____ − _____ = _____

      459 mL − 153 mL = _____

   c. Are your answers reasonable? Why?

2. Mr. Williams owns a gas station. He sells 367 liters of gas in the morning, 300 liters of gas in the afternoon, and 219 liters of gas in the evening.

   a. Estimate, and then find the actual total amount of gas he sells in one day.

   b. Estimate, and then find the actual difference between the amount of gas Mr. Williams sells in the morning and the amount he sells in the evening.

3. The Blue Team runs a relay. The chart shows the time, in minutes, that each team member spends running.

Blue Team	Time in Minutes
Jen	5 minutes
Kristin	7 minutes
Lester	6 minutes
Evy	8 minutes
Total	

   a. How many minutes does it take the Blue Team to run the relay?

   b. It takes the Red Team 37 minutes to run the relay. Estimate, and then find the actual difference in time between the two teams.

4. The lengths of three banners are shown to the right.

Banner A	437 cm
Banner B	457 cm
Banner C	332 cm

   a. Estimate, and then find the actual total length of Banner A and Banner C.

   b. Estimate, and then find the actual difference in length between Banner B and the combined length of Banner A and Banner C. Model the problem with a tape diagram.

Video tutorials: http://bit.ly/eurekapusd
Info for parents: http://bit.ly/pusdmath