

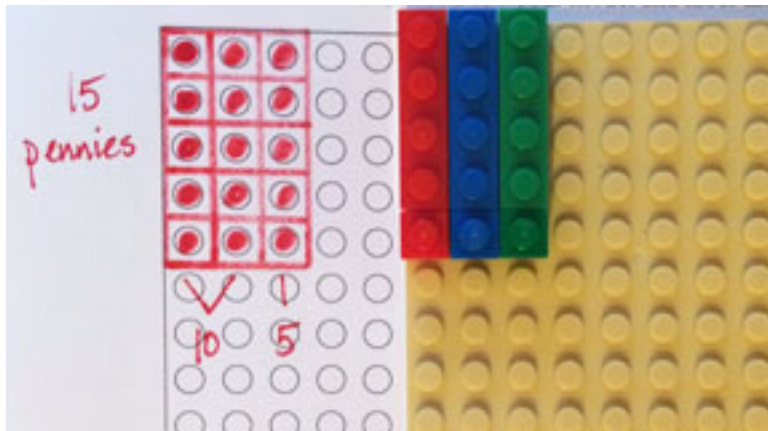
Brick Math
Basic Measurement Using LEGO® Bricks
Student Assessments - Answer Key

Chapter 1

1. c, d, e
2. A LEGO® brick is not a standard measure because the bricks are not all the same size.
3. Begin measuring with a ruler at zero
4. Standard measurement tools: ruler, tape measure, meter stick, cup, teaspoon
Non-standard measurement tools: shoe, hand, pencil, LEGO® brick

Chapter 2

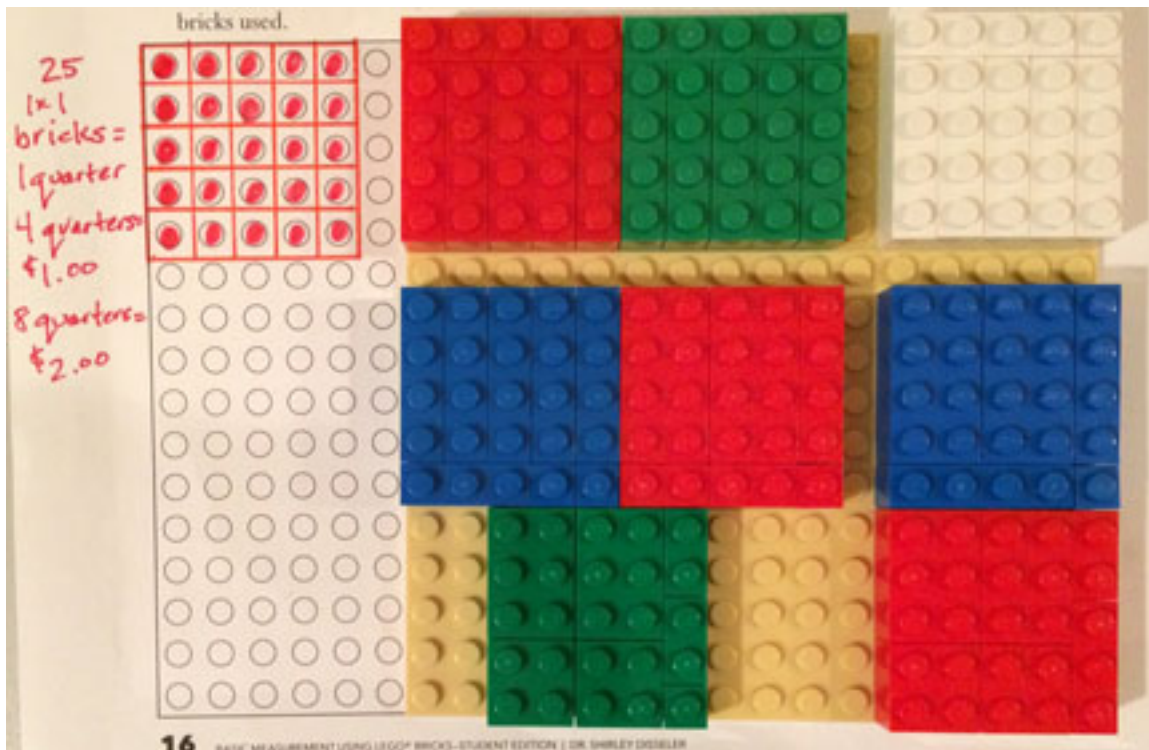
- 1.



2.



3.



Chapter 3

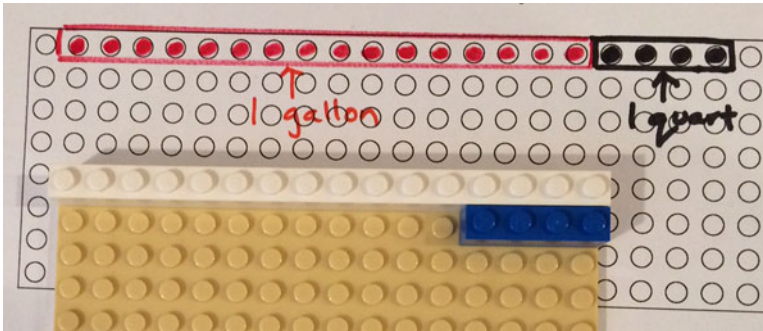
1. 6:30 pm
2. 6:45 am
3. Stop 1 - 6:15 pm Stop 2 - 6:25 pm Stop 3 - 6:35 pm
4. 6 intervals

Chapter 4

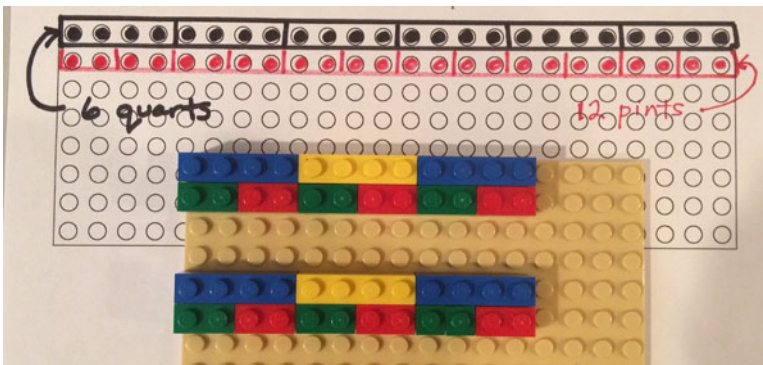
1. 3 hours and 5 minutes
Start at 3 hours 10 minutes and count up to 6 hours 10 minutes, to find 3 hours.
Since dinner is at 6:15, add on 5 more minutes.
2. 2:45 pm
Start at 2:30 minutes and count 15 more minutes in 5-minute increments.
3. 6:35 pm
Start at 7:05 pm and count backwards ten minutes for the popcorn purchase. This makes the time 6:55 pm. If the travel time is 20 minutes, subtract 55 - 20 to get 35 (or count backwards 20 minutes in 5-minute increments). The time to start will be 6:35 pm.
4. 5 hours 50 minutes
Start at 9:15 am and count to 2:15 pm, which is 5 hours. Then count the minutes between 2:15 and 3:05 in 5-minute increments, which is 50 minutes. Add the two together to get 5 hours 50 minutes.
5. *Elapsed time* is the time that passes between two events.

Chapter 5

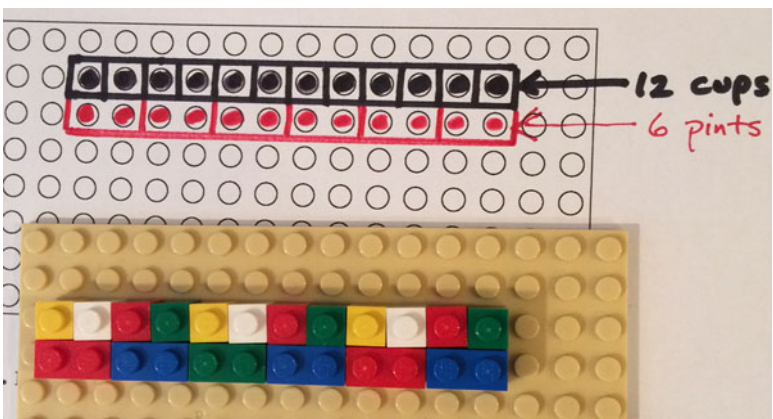
1.



2. 6 quarts = 12 pints



3. 12 cups = 6 pints

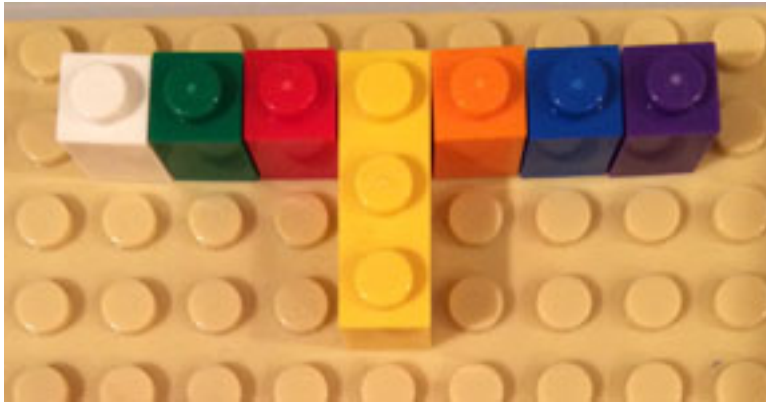


4. gallon

5. teaspoon, tablespoon, cup, pint, quart, gallon

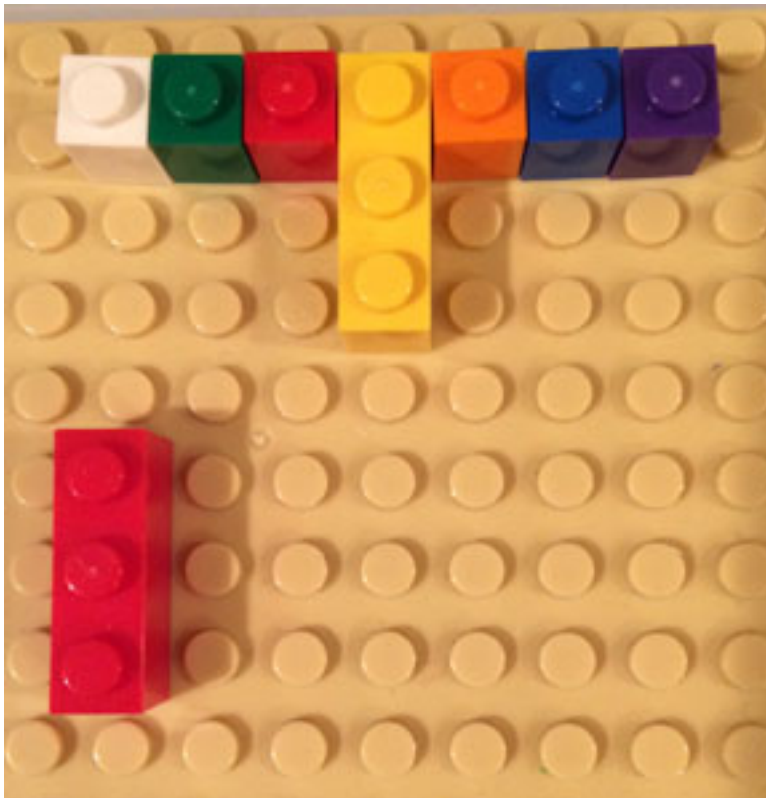
Chapter 6

1.



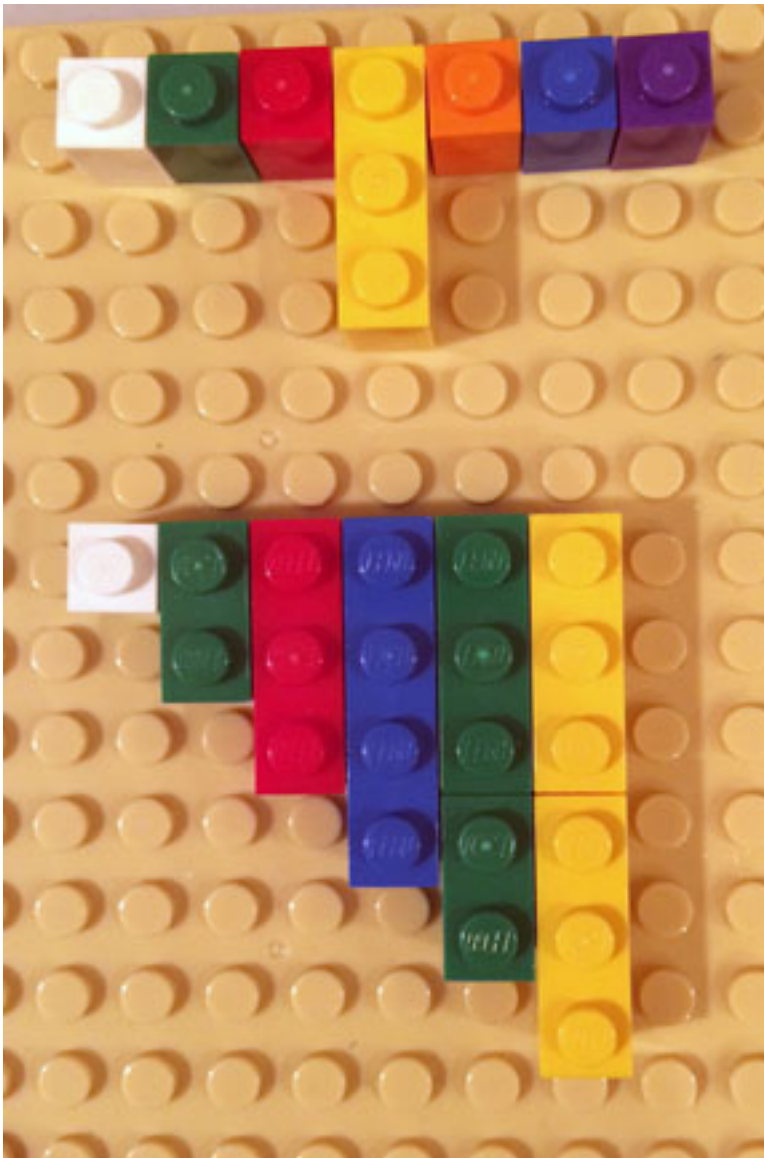
kilo hecto deka base deci centi milli

2.



Each 1x1 brick under the kilo brick of the metric system model represents 1 kilometer.
Three 1x1 bricks model 3 kilometers.

3.



Moving left to right, start at the kilometer unit with a 1x1 brick. Show multiplication by 10 by adding one zero (and one stud) to each unit of the metric system model until you get to centimeters.

$$1 \text{ km} = 100,000 \text{ cm}$$

4. milli, centi, deci, base, deka, hecto, kilo
(Students may attach -meter, -gram, or -liter to these prefixes.)

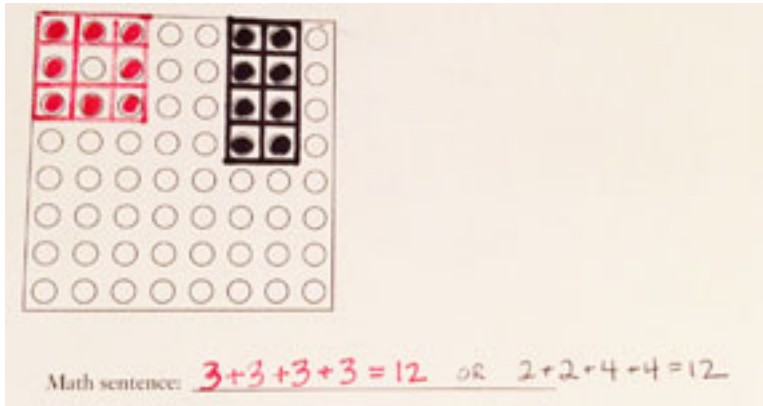
Chapter 7

1. Perimeter is the distance around the outside of a given shape.

2. Two possible answers:

$$3 + 3 + 3 + 3 = 12$$

$$2 + 2 + 4 + 4 = 12$$

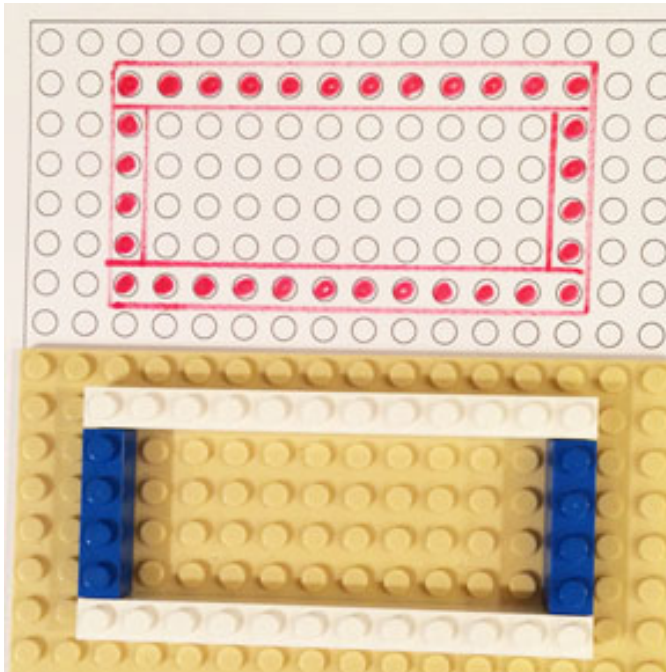


3. Two of several possible answers:

$$8 + 8 + 8 + 8 = 32 \text{ (model will show an } 8 \times 8 \text{ square)}$$

$$9 + 7 + 9 + 7 = 32 \text{ (model will show a } 9 \times 7 \text{ square)}$$

4. Perimeter of table is $12 + 12 + 6 + 6 = 36$ ft.

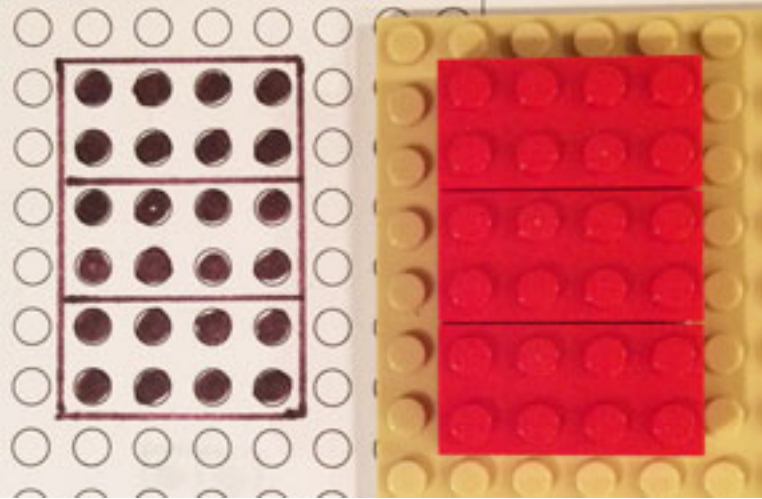


Chapter 8

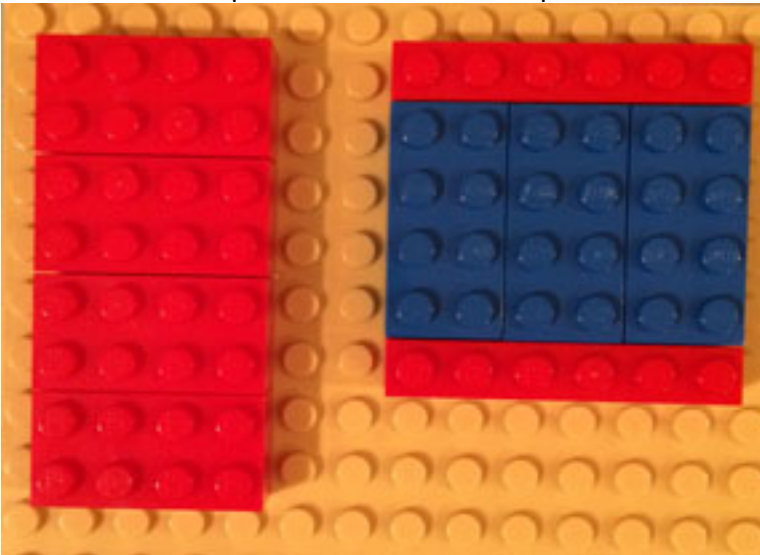
1. Length and width

2. 24 ft^2

Length is 6 studs and width is 4 studs. $6 \times 4 = 24$ studs



3. There are several possible solutions. Two possibilities are shown:



left model: side lengths of 8 studs and 4 studs

right model: a square with sides each of 6 studs

4. $8 \text{ ft} \times 8 \text{ ft} = 64 \text{ ft}^2$

OR $2 \text{ ft} \times 32 \text{ ft} = 64 \text{ ft}^2$

OR $4 \text{ ft} \times 16 \text{ ft} = 64 \text{ ft}^2$

5. Area is squared because it includes two measures of dimensionality.