Student Objective
(Obj. 4a) TSW… convert between units of length, capacity, and weight in the customary system.

Lesson
3-6 English Measurement System (Textbook Pages: 148-153)

Homework
None Tonight

Last Night's Homework
Complete study guide for data analysis test.

Bellwork
Get your assigned calculator and pull out your completed study guide for a short test review.

Prior Knowledge
- In previous school years you learned to convert between different units of measure. Today, I would like to show you how to convert those measurements using your graphing calculator.

Anticipatory Set
- After our test today, we will learn how to convert between units of measure using the English measurement system.
- Why learn about measurements?
- Measurements are seen and used every day.
- For example, when you enter my classroom, you may walk 6 feet to your desk, or you may walk 20 feet.
- Let's talk about a more interesting example...
- Display transparency: Measurements of Interest... “Jumpin Jack the Disc Dog!”
- Play internet video of “Frisbee Dogs in Action!”
- Interesting example of how measurements can be used in the real world.

Teacher Input
- Pass out Student Notes.
- Review the differences between length, weight, and capacity.
- Define length and how it is measured. Walk students how to convert units of length using MATH7 on TI84.
- Allow students to work you-try problem (independently).
- Define weight and how it is measured. Walk students how to convert units of weight using MATH7 on TI84.
- Allow students to work you-try problem (independently).
- Define capacity and how it is measured. Walk students how to convert units of capacity using MATH7 on TI84.
- Allow students to work you-try problem (independently).

- Classwork: BD-125 (Length), BD-129 (Weight), BD-133 (Capacity) with partner
- Extra practice: Buckledown MCT2 (Form A).

Assessment
Monitor students as they work on “you try” problems.

Closure
1. This week we have learned to convert between different units of measure.
2. What are the basic units of measurement in the English measurement system? Length, Weight, Capacity
3. What are the basic units of measurement in the Metric system? Meters (length), Grams (Weight), Liters (Capacity)
Meet Jumpin Jack the Disc Dog
(Former residence: Indiana Humane Society)

“Measurements of Interest”

Jumpin Jack leaped 84 inches into the air to catch a Frisbee.

How many feet did Jumpin Jack leap?
English Measurement System

To change units in the customary system we must work with length, weight, and capacity.

Measurements of LENGTH

1 ft = 12 in
1 yd = 3 ft
1 yd = 36 in
1 mile = 1,760 yd
1 mile = 5,280 ft

We can use the MATH7 Program on our calculator to help us convert from one unit of length to another. Follow along with your calculator as we work this problem together:

13 yards = ________________ feet

Math 7
6. Unit Converter
   1: CUSTOMARY UNITS

WHAT ARE YOU MEASURING?
1. LENGTH
2. VOLUME (CAPACITY)
3. MASS (WEIGHT)

WHAT UNITS ARE YOU GIVEN?
1. FEET (ft)
2. INCHES (in)
3. FEET AND INCHES
4. YARDS (yd)
5. MILES (mi)

ENTER THE NUMBER OF YARDS: 13

Answer
FEET: 39

Find where it shows your answer in feet.

So, 13 yards = 39 feet!
Measurements of WEIGHT

1 lb = _____ 16 _____ oz
1 ton = _____ 2,000 _____ lb
1 ton = _____ 32,000 _____ oz

We can use the MATH7 Program on our calculator to help us convert from one unit of weight to another. Follow along with your calculator as we work this problem together:

160 oz (ounces) = ______________________ lbs (pounds)

Math 7
6. Unit Converter
   1: CUSTOMARY UNITS

WHAT ARE YOU MEASURING?
1. LENGTH
2. VOLUME (CAPACITY)
3. MASS (WEIGHT)

WHAT UNITS ARE YOU GIVEN?
1. OUNCES (oz)
2. POUNDS (lb)
3. POUNDS, OUNCES
4. TONS (T)

ENTER THE NUMBER OF OUNCES: 160

Answer
POUNDS: 10  ← Find where it shows your answer in pounds.

So, 160 ounces = 10 pounds!
Measurements of Liquid Capacity

The Big “G”

1 c = 8 fl oz (fluid ounces)

You can place an 8 inside each “C”.

We can use the MATH7 Program on our calculator to help us convert from one unit of capacity to another. Follow along with your calculator as we work this problem together:

5 c (cups) = ________________ fl oz (fluid ounces)

Math 7
6. Unit Converter
   1: CUSTOMARY UNITS

WHAT ARE YOU MEASURING?
1. LENGTH
2. VOLUME (CAPACITY)
3. MASS (WEIGHT)

WHAT UNITS ARE YOU GIVEN?
1. FLUID OUNCES (fl oz)
2. CUPS (c)
3. PINTS (pt)
4. QUARTS (qt)
5. GALLONS (gal)

ENTER THE NUMBER OF CUPS: 5

Answer
FLUID OUNCES: 40 ← Find where it shows your answer in fluid ounces.

So, 5 cups = 40 fluid ounces!
You Try!

1) Gayle drove 90 miles from Jackson to Winona. How many yards did Gayle drive?

2) Jumpin’ Jack the disc dog leaped 84 inches in the air to catch a Frisbee. How many feet did Jumpin’ Jack leap?

3) 12,000 lb = __________ T

4) 3 pt = __________ qt

5) 5 c = __________ fl oz

6) 54 feet = __________ yards
You Try!

1) Gayle drove 90 miles from Jackson to Winona. How many yards did Gayle drive?
   \[ x = 158,400 \text{ yd} \]

2) Jumpin’ Jack can leap 84 inches in the air to catch a Frisbee. How many feet did Jumpin Jack leap?
   \[ x = 7 \text{ ft} \]

3) \( 12,000 \text{ lb} = \) ___________ T
   \[ x = 6 \text{ Tons} \]

4) \( 3 \text{ pt} = \) ___________ qt
   \[ x = 1.5 \text{ qt} \]

5) \( 5 \text{ c} = \) ___________ fl oz
   \[ x = 40 \text{ fl oz} \]

6) \( 54 \text{ feet} = \) ___________ yards
   \[ x = 18 \text{ yards} \]
Practice

Length

1 \text{ ft} = \underline{}12\underline{} \text{ in}

1 \text{ yd} = \underline{}3\underline{} \text{ ft}
1 \text{ yd} = \underline{}36\underline{} \text{ in}

1 \text{ mile} = \underline{}1,760\underline{} \text{ yd}
1 \text{ mile} = \underline{}5,280\underline{} \text{ ft}

Directions: For Numbers 5 through 12, use your calculator to make each conversion.

5. 13 \text{ yd} = \underline{}\underline{} \text{ ft}

6. 4.5 \text{ ft} = \underline{}\underline{} \text{ in.}

7. 2 \text{ mi} = \underline{}\underline{} \text{ yd}

9. 54 \text{ ft} = \underline{}\underline{} \text{ yd}

10. 26,400 \text{ ft} = \underline{}\underline{} \text{ mi}

11. 180 \text{ in.} = \underline{}\underline{} \text{ yd}

8. Michael is a running back for the school football team. On his last run, he gained 6 yards. How many inches did Michael gain on his last run?
   A. 60 in.
   B. 180 in.
   C. 216 in.
   D. 240 in.

12. Hannah rode 4,400 yards on her morning bike ride. The next day, she rode 5,280 yards. How many total miles did Hannah ride?
   A. 2.5 mi
   B. 3.0 mi
   C. 5.5 mi
   D. 6.5 mi
Lesson 9: Measurement Systems

Objectives: 4a

DOK 1, 2

Practice

Answer Key

Length

1 ft = ____12____ in

1 yd = ____3____ ft

1 yd = ____36____ in

1 mile = ____1,760____ yd

1 mile = ____5,280____ ft

Directions: For Numbers 5 through 12, set up a proportion and make the conversion.

5. 13 yd = ____39____ ft

6. 4.5 ft = ____54____ in.

7. 2 mi = ____3,520____ yd

9. 54 ft = ____18____ yd

10. 26,400 ft = ____5____ mi

11. 180 in. = ____5____ yd

8. Michael is a running back for the school football team. On his last run, he gained 6 yards. How many inches did Michael gain on his last run?
   A. 60 in.
   B. 180 in.
   C. 216 in.
   D. 240 in.

12. Hannah rode 4,400 yards on her morning bike ride. The next day, she rode 5,280 yards. How many total miles did Hannah ride?
   A. 2.5 mi
   B. 3.0 mi
   C. 5.5 mi
   D. 6.5 mi

   Total yards
   4,400
   +5,280
   9,680 yd

125
Lesson 9: Measurement Systems

Objectives: 4a

**Practice**

**Weight**

1 lb = ___ 16 ___ oz

1 ton = ___ 2000 ___ lb

1 ton = ___ 32,000 ___ oz

**Directions:** For Numbers 5 through 12, use your calculator to make each conversion.

5. 160 oz = _________ lb

6. 26,000 oz = _________ T

7. 114 oz = _________ lb

9. 12,000 lb = _________ T

10. 8.5 lb = _________ oz

11. 2 T = _________ oz

8. On an average night, shrimp fisherman off the coast of Mississippi catch around 0.5 ton of shrimp. How many pounds of shrimp does a Mississippi fisherman catch on an average night?

   A. 1,000 lb
   B. 2,000 lb
   C. 3,000 lb
   D. 4,000 lb

12. Michael and Rachel both started an exercise program 8 months ago. Since starting the program, Michael has lost 24 pounds, and Rachel has lost 15 pounds. How many more ounces has Michael lost than Rachel?

   A. 9 oz
   B. 108 oz
   C. 144 oz
   D. 162 oz
Practice

Weight

1 lb = ___ 16 ___ oz
1 ton = ___ 2000 ___ lb
1 ton = ___ 32,000 ___ oz

Directions: For Numbers 5 through 12, set up a proportion and make the conversion.

5. 160 oz = ___ 10 ___ lb
6. 26,000 oz = ___ .8125 ___ T
7. 114 oz = ___ 7.125 ___ lb
9. 12,000 lb = ___ 6 ___ T
10. 8.5 lb = ___ 1.36 ___ oz
11. 2 T = ___ 64,000 ___ oz

8. On an average night, shrimp fisherman off the coast of Mississippi catch around 0.5 ton of shrimp. How many pounds of shrimp does a Mississippi fisherman catch on an average night?
   A. 1,000 lb
   B. 2,000 lb
   C. 3,000 lb
   D. 4,000 lb

12. Michael and Rachel both started an exercise program 8 months ago. Since starting the program, Michael has lost 24 pounds, and Rachel has lost 15 pounds. How many more ounces has Michael lost than Rachel?
   A. 9 oz
   B. 108 oz
   C. 144 oz
   D. 162 oz
Directions: For Numbers 5 through 12, use your calculator to make each conversion.

5. \(5 \text{ c} = \underline{\text{ }} \text{ fl oz}\)

6. \(72 \text{ fl oz} = \underline{\text{ }} \text{ pt}\)

7. \(10 \text{ gal} = \underline{\text{ }} \text{ pt}\)

8. The food processor at Perez Bakery has a capacity of 92 cups. What is the capacity of the food processor in quarts?
   A. 12 qt
   B. 23 qt
   C. 30 qt
   D. 46 qt

9. \(256 \text{ fl oz} = \underline{\text{ }} \text{ qt}\)

10. \(36 \text{ pt} = \underline{\text{ }} \text{ c}\)

11. \(60 \text{ c} = \underline{\text{ }} \text{ gal}\)

12. Jennifer’s family consumed 100 quarts of orange juice last year. Mike’s family consumed 140 quarts of orange juice last year. How many total gallons of orange juice did Jennifer’s family and Mike’s family consume last year?
   A. 10 gal
   B. 25 gal
   C. 35 gal
   D. 60 gal
Directions: For Numbers 5 through 12, use your calculator to make each conversion.

5. \(5 \text{ c} = \underline{40} \text{ fl oz}\)

6. \(72 \text{ fl oz} = \underline{4.5} \text{ pt}\)

7. \(10 \text{ gal} = \underline{80} \text{ pt}\)

8. The food processor at Perez Bakery has a capacity of 92 cups. What is the capacity of the food processor in quarts?
   A. 12 qt 
   B. 23 qt 
   C. 30 qt 
   D. 46 qt

9. \(256 \text{ fl oz} = \underline{8} \text{ qt}\)

10. \(36 \text{ pt} = \underline{72} \text{ c}\)

11. \(60 \text{ c} = \underline{3.75} \text{ gal}\)

12. Jennifer’s family consumed 100 quarts of orange juice last year. Mike’s family consumed 140 quarts of orange juice last year. How many total gallons of orange juice did Jennifer’s family and Mike’s family consume last year?
   A. 10 gal
   B. 25 gal
   C. 35 gal
   D. 60 gal

   \(\text{Total Quarts:}\)
   \(\frac{100 \text{ Jennifers}}{140 \text{ Mikes}} = \frac{100}{240} \text{ quarts}\)