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Customary Measurement Conversions

Ready-to-Use Review Activities and Assessments

CCSS Aligned

4th & 5th Grade Math

Customary Measurement Conversions

Table of Contents

Customary Measurement Conversions
## Introduction and Overview

Customary Measurement Conversions is a comprehensive resource of strategies and printables to help your students review and practice converting between the customary units of measurement. This packet includes activities for the following units: miles, yards, feet, inches, gallons, cups, pints, quarts, ounces, pounds, and tons.

Traditionally, students have struggled with measurement concepts and have difficulty solving word problems involving measurement concepts. One reason is that they may not have had enough hands-on experiences learning measurement concepts. But even when students have had plenty of hands-on practice, they may still struggle because they have not memorized basic measurement units, and therefore are not able to use them fluently when solving measurement problems. Before you use the activities and assessments in Customary Measurement Conversions, be sure to introduce these customary units of measure to students with hands-on activities. It's critical that students have actual measurement practice using devices like rulers, scales, measuring cups, and so on before being asked to memorize basic measurement units. However, if your students have had lots of hands-on practice and are still struggling, these activities are exactly what they need.

In this packet you'll find cooperative learning games, a measurement foldable, problem task cards, teacher strategy pages, word problems, and assessments. For the most part, answer keys are provided directly following each test or retest. Answers to the word problem pages can be found in the teacher information section for both grade levels.

Mastery Learning - Providing a Second Chance
One unique aspect of this book is that each assessment also comes with a retest. Both tests are similar in format, but they have different problems. Having two forms of the test gives you the opportunity to reteach content and reassess students when they don't demonstrate mastery on the first test. This system of teaching, testing, reteaching, and reassessing is sometimes referred to as the Mastery Learning model. The Mastery Learning model is extremely effective because it keeps struggling students from falling farther and farther behind in instruction. You can read more about Mastery Learning on my Teaching Resources website.
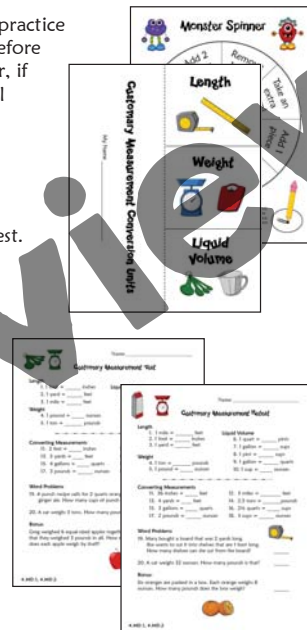
Common Core Alignment
This unit is aligned with the 4th and 5th grade CCSS for Measurement and Data, but not all aspects of those standards are covered in this book. Let's take a look those standards and what's addressed here.

- **4.MD.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
- **4.MD.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
- **5.MD.1** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

This book only covers customary units of measurement and does not include review activities for the metric system, time, or money. You'll find a few problems requiring the use of decimals and fractions, but not many. Note the use of the term "mass" instead of "weight." In the elementary grades, there is no distinction between the terms.

How This Book is Organized
Because the expectations for 4th and 5th grade are slightly different, I've organized the materials into different sections to help you find what you need. Both 4th and 5th grade students will need to review measurement units, so the first part of the book is devoted to basic units. The rest of the book consists of printables, task cards, word problems, and tests that are aligned with specific 4th and 5th grade standards. Look for the standard number in the lower left corner of each grade-specific page.

The main difference between the 4th and 5th grade measurement standards for converting units is that 4th graders only have to convert from a larger unit to a smaller one. For example, 4th graders only have to be able to convert feet to inches, but they don't have to be able to convert inches to feet. Fifth grade students are expected to be able to convert both ways. Both grade levels are expected to be able to solve word problems with conversions, so I've included word problems in both sections.

Instead of creating two separate books, one for each grade level, I have combined them into one book so that you can choose the level of instruction that's right for your students. Fifth grade teachers may want to start out with the 4th grade activities, and some 4th grade teachers may have gifted students who need the challenge of the 5th grade words problems and task cards. It's up to you to choose the activities and assessments that best meet the needs of your students.
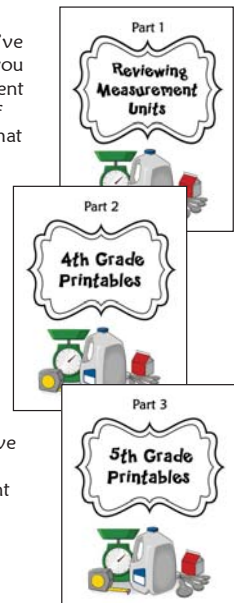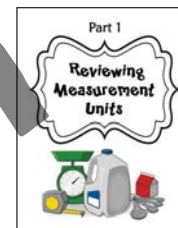
Part 1

Reviewing Measurement Units

Reviewing Measurement Units
Teaching Tips and Strategies

What's the biggest problem 4th and 5th grade students have with solving measurement conversions? Believe it or not, their difficulties often are a result of not knowing the basic conversion units. If you don't know that there are 8 ounces in a cup, you aren't going to be able to figure out how many ounces are in 3 cups. So the first place to get started is to quiz your students to find out which units they need to review. Then, depending whether or not they need a lot of review or just a little, you can decide which of the activities below you want to use to provide remediation.

1. **Customary Measurement Basics Test and Retest**
   If your students have already had hands-on practice with customary measurement, administer this half-page test to see if they know their basic units. If they are not fluent in their knowledge, use the games and activities in Part 1 to help them memorize those basic units. Then give the retest as a final check for understanding before teaching them how to convert basic units of measurement. You'll find the answer keys for those items directly following the retest.

2. **Teaching Customary Liquid Volume with Gallon Robot**
   One of the best ways to help kids remember the customary units of capacity, or liquid volume, is to introduce them to the Gallon Robot model. Gallon Robot is a paper model you can have each team or each student create to show the relative sizes of cups, pints, quarts, and gallons. You can download free basic patterns from my TeachersPayTeachers store, and you can also purchase my complete ebook, *Gallon Robot to the Rescue*, that includes teacher demonstration pages, games, and activities for liquid volume. In this book, I've included an overview of the Gallon Robot in case you aren't familiar with this teaching model.
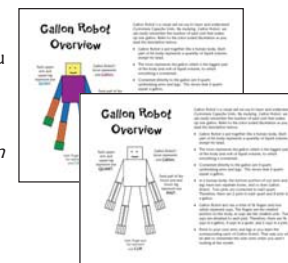
3. **Customary Measurement Charts**
   When introducing basic measurement units, it's nice to have a chart to display in front of the class as a reference. I included two variations for you; one is completely filled out with the relevant units, and the other has blanks for you to fill in the information as you teach the lesson.

4. **Customary Measurement Conversions Foldable**
   Students love taking notes in foldables, and this Customary Measurement Foldable is especially helpful since it can be kept as a handy reference. To create the foldable, print the two pages back to back. Fold in half on the vertical dotted line and cut the solid lines to form flaps. Students can lift up each flap and fill in the basic conversion units during your lesson.
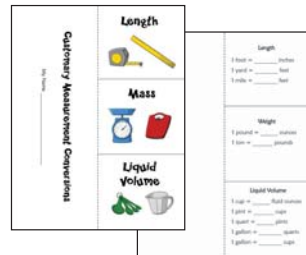
5. **Measurement Memory and Matching Cards**
   Measurement Memory is a matching game for pairs of students or teams of up to four. Students will review basic units of measurement and customary abbreviations by attempting to find matching sets of cards. This game includes a set of directions and two sets of matching cards. You might want to print each set of cards on a different color of paper to keep them from getting mixed up. For example, print the Basic Unit Cards on blue paper and the Customary Abbreviations on red. Cut the cards apart in advance and store them in snack-sized zippered bags.
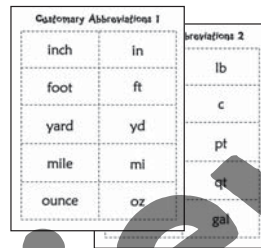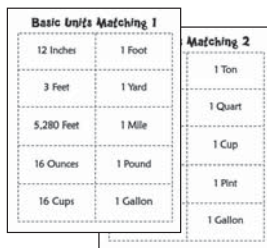
6. **Math Showdown**
   Math Showdown is a cooperative learning activity that works well in teams of three or four students. Each student will need a dry erase board and a marker. In addition, each team will need a set of math task cards or problem cards. You can use the task cards on pages 20 - 22 to review basic units of measurement. You can also use the task cards that can be found in the 4th grade and 5th grade printables sections. When you first introduce Math Showdown to your students, display the directions on the right and have one team model the steps as you read them aloud. The most important rule of the activity is that everyone must attempt the problem first, without talking, before the leader reveals the answer and the team talks it over. The game is not a competition, and students don't score points for correct answers, but students always enjoy it. Remind them to be sure that everyone understand the solution to each problem before moving on to the next problem.
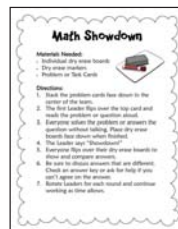
7. **Basic Measurement Task Cards**
   The task cards on page 25 - 27 can be used with Math Showdown or with the Monster Math Mix-up Game. This set does not involve conversions and simply provides a review of basic units. Duplicate the cards on card stock or construction paper, laminate them, and cut them apart. Store each set in a snack-sized plastic bag.
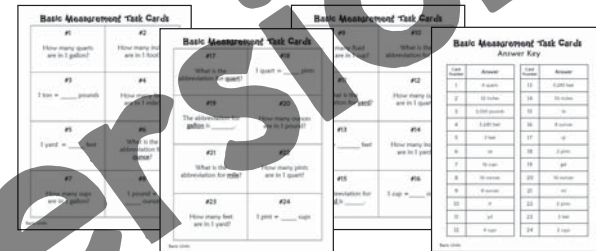
8. **Monster Math Mix-up**
   Monster Math Mix-up is an engaging partner activity for reviewing and practicing almost any math concept. For this game, each student will need one of the monster puzzles on pages 31 through 34. Only two puzzles are needed, but I included four monsters to give students some choice. It's best to print the monsters in color on cardstock or sturdy paper and laminate them prior to cutting them apart. You might also want to number each piece on the back with the number of the puzzle. That way if the pieces are found on the floor later, you can put them back in the right envelope or bag. In addition, each pair will need a set of problem cards or task cards. You can use the ones on pages 25 - 27 or one of the grade level sets. The 4th grade set is on pages 42 - 45, and the 5th grade set can be found on pages 57 - 60.
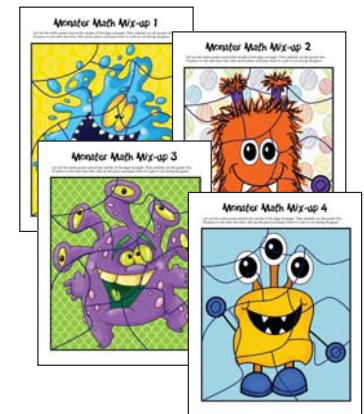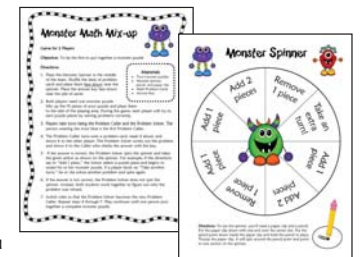
   To play the game, students follow the steps on the Monster Math Mix-up direction page. They take turns solving the problems, spinning the spinner, and adding pieces to create their puzzles. The first student to complete his or her puzzle is the winner.

Name _____
Date _____

Customary Measurement Basics Test

Length
1. 1 yard = _____ feet
2. 1 foot = _____ inches
3. 1 mile = _____ feet

Mass
4. 1 ton = _____ pounds
5. 1 pound = _____ ounces

Liquid Volume
6. 1 pint = _____ cups
7. 1 gallon = _____ quarts
8. 1 quart = _____ pints
9. 1 cup = _____ ounces
10. 1 gallon = _____ cups

Name _____
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Name _____
Date _____

Customary Measurement Basics Retest

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2. 1 foot = _____ inches
3. 1 yard = _____ feet

Mass
4. 1 pound = _____ ounces
5. 1 ton = _____ pounds

Liquid Volume
6. 1 cup = _____ ounces
7. 1 gallon = _____ cups
8. 1 pint = _____ cups
9. 1 quart = _____ pints
10. 1 gallon = _____ quarts

Customary Measurement Basics Retest
Answer Key

Length
1. 1 mile = **5,280** feet
2. 1 foot = **12** inches
3. 1 yard = **3** feet

Mass
4. 1 pound = **16** ounces
5. 1 ton = **2,000** pounds

Liquid Volume
6. 1 cup = **8** ounces
7. 1 gallon = **16** cups
8. 1 pint = **2** cups
9. 1 quart = **2** pints
10. 1 gallon = **4** quarts

Customary Measurement Basics Test
Answer Key

Length
1. 1 yard = **3** feet
2. 1 foot = **12** inches
3. 1 mile = **5,280** feet

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4. 1 ton = **2,000** pounds
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Liquid Volume
6. 1 pint = **2** cups
7. 1 gallon = **4** quarts
8. 1 quart = **2** pints
9. 1 cup = **8** ounces
10. 1 gallon = **16** cups

Gallon Robot is a visual aid we use to learn and understand Customary Liquid Volume Units. By studying Gallon Robot, we can easily remember the number of each unit that makes up one gallon. Refer to the color-coded illustration as you read the description below.

- Gallon Robot is put together like a human body. Each part of his body represents a quantity of liquid volume, except his head.

- The torso represents the gallon which is the biggest part of the body and unit of liquid volume, to which everything is connected.

- Connected directly to the gallon are 4 quarts symbolizing arms and legs. This shows that 4 quarts equals a gallon.

- In a human body, the bottom portion of our arms and legs have two separate bones, and so does Gallon Robot. Two pints are connected to each quart. Therefore, there are 2 pints in each quart and 8 pints in a gallon.

- Gallon Robot also has a total of 16 fingers and toes which represent cups. The fingers are the smallest portion on the body, as cups are the smallest unit. Two cups are attached to each pint. Therefore, there are 16 cups in a gallon, 4 cups in a quart, and 2 cups in a pint.

- Point to your own arms and legs as you learn the corresponding parts of Gallon Robot. That way you will be able to remember the units even when you aren't looking at the model.

Gallon Robot Overview

Gallon Robot's torso represents one **Gallon.**

Each part of the lower arm and lower leg represent one **PINT.**

Each upper arm and upper leg represent one **QUART.**

Each finger and toe represent one **CUP.**

Gallon Robot Overview

Gallon Robot is a visual aid we use to learn and understand Customary Liquid Volume Units. By studying Gallon Robot, we can easily remember the number of each unit that makes up one gallon. Refer to the illustration as you read the description below.

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- Point to your own arms and legs as you learn the corresponding parts of Gallon Robot. That way you will be able to remember the units even when you aren't looking at the model.

Gallon Robot's torso represents one **Gallon**.

Each part of the lower arm and lower leg represent one **PINT**.

Each upper arm and upper leg represent one **QUART**.

Each finger and toe represent one **CUP**.

Customary Measurement

Length

1 foot = _____ inches

1 yard = _____ feet

1 mile = _____ feet

Mass

1 pound = _____ ounces

1 ton = _____ pounds

Liquid Volume

1 cup = _____ ounces

1 pint = _____ cups

1 quart = _____ pints

1 gallon = _____ quarts

1 gallon = _____ cups

Customary Measurement

Length

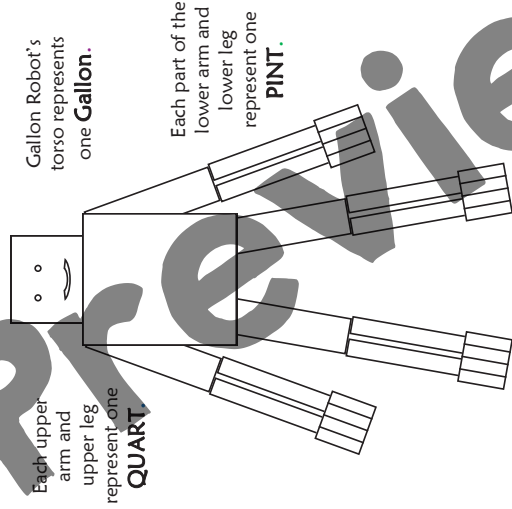1 foot = 12 inches

1 yard = 3 feet

1 mile = 5,280 feet

Mass

1 pound = 16 ounces

1 ton = 2,000 pounds

Liquid Volume

1 cup = 8 ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 gallon = 16 cups

Customary Measurement Conversions

My Name _____

Length

Mass

Liquid Volume

Length

1 foot = _____ inches

1 yard = _____ feet

1 mile = _____ feet

Mass

1 pound = _____ ounces

1 ton = _____ pounds

Liquid Volume

1 cup = _____ ounces

1 pint = _____ cups

1 quart = _____ pints

1 gallon = _____ quarts

1 gallon = _____ cups

Measurement Memory

Objective: To review measurement units by finding matching sets of measurement cards

Number of Players: 2 to 4

Materials: 20 Measurement Matching Cards

Directions:

1. Check to be sure you have 20 cards with no duplicates. To do this spread them out face up and work together to make sure that there are 10 complete matching sets.
2. To begin the game, shuffle all 20 cards together and place them face down in rows in the middle of the team as shown below.
3. The first player turns over 2 cards, making sure everyone sees what is on the cards and knows their locations. If the cards match and all team members agree, that player keeps the cards and turns over 2 more cards. Play continues until the player turns over 2 cards that don't match.
4. If the cards don't match, the cards are placed face down and the player on the left turns over 2 cards, looking for a match.
5. Players take turns clockwise around the team and continue playing until all matches are found. Everyone counts their cards, and the winner is the person who collected the most cards.
6. Shuffle the cards and play again. The first player for each round is the person with the fewest cards during the previous round.
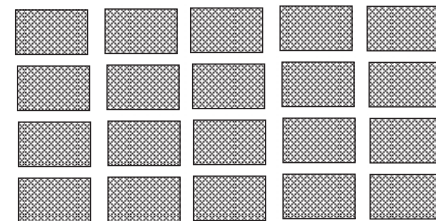
Basic Units Matching 1

12 Inches	1 Foot
3 Feet	1 Yard
5,280 Feet	1 Mile
16 Ounces	1 Pound
16 Cups	1 Gallon

Basic Units Matching 2

2,000 Pounds	1 Ton
2 Pints	1 Quart
8 Fluid Ounces	1 Cup
2 Cups	1 Pint
4 Quarts	1 Gallon

Customary Abbreviations 1

inch	in
foot	ft
yard	yd
mile	mi
ounce	oz

Customary Abbreviations 2

pounds	lb
cups	c
pints	pt
quarts	qt
gallons	gal

Math Showdown

Materials Needed:
- Individual dry erase boards
- Dry erase markers
- Problem or Task Cards

Directions:
1. Stack the problem cards face down in the center of the team.
2. The first Leader flips over the top card and reads the problem or question aloud.
3. Everyone solves the problem or answers the question without talking. Place dry erase boards face down when finished.
4. The Leader says "Showdown!"
5. Everyone flips over their dry erase boards to show and compare answers.
6. Be sure to discuss answers that are different. Check an answer key or ask for help if you can't agree on the answer.
7. Rotate Leaders for each round and continue working as time allows.

Basic Measurement Task Cards

#1 How many quarts are in 1 gallon?	**#2** How many inches are in 1 foot?
#3 1 ton = _____ pounds	**#4** How many feet are in 1 mile?
#5 1 yard = _____ feet	**#6** What is the abbreviation for <u>ounce</u>?
#7 How many cups are in 1 gallon?	**#8** 1 pound = _____ ounces

Basic Units

Basic Measurement Task Cards

#9 How many ounces are in 1 cup?	**#10** What is the abbreviation for <u>foot</u>?
#11 What is the abbreviation for <u>yard</u>?	**#12** How many cups are in 1 quart?
#13 1 mile = _____ feet	**#14** How many inches are in 1 yard?
#15 The abbreviation for <u>pound</u> is _____.	**#16** 1 cup =_____ ounces

Basic Measurement Task Cards

#17 What is the abbreviation for <u>quart</u>?	**#18** 1 quart = _____ pints
#19 The abbreviation for <u>gallon</u> is _____.	**#20** How many ounces are in 1 pound?
#21 What is the abbreviation for <u>mile</u>?	**#22** How many pints are in 1 quart?
#23 How many feet are in 1 yard?	**#24** 1 pint = _____ cups

Basic Measurement Task Cards
Answer Key

Card Number	Answer	Card Number	Answer
1	4 quarts	13	5,280 feet
2	12 inches	14	36 inches
3	2,000 pounds	15	lb
4	5,280 feet	16	8 ounces
5	3 feet	17	qt
6	oz	18	2 pints
7	16 cups	19	gal
8	16 ounces	20	16 ounces
9	8 ounces	21	mi
10	ft	22	2 pints
11	yd	23	3 feet
12	4 cups	24	2 cups

Monster Math Mix-up

Game for 2 Players

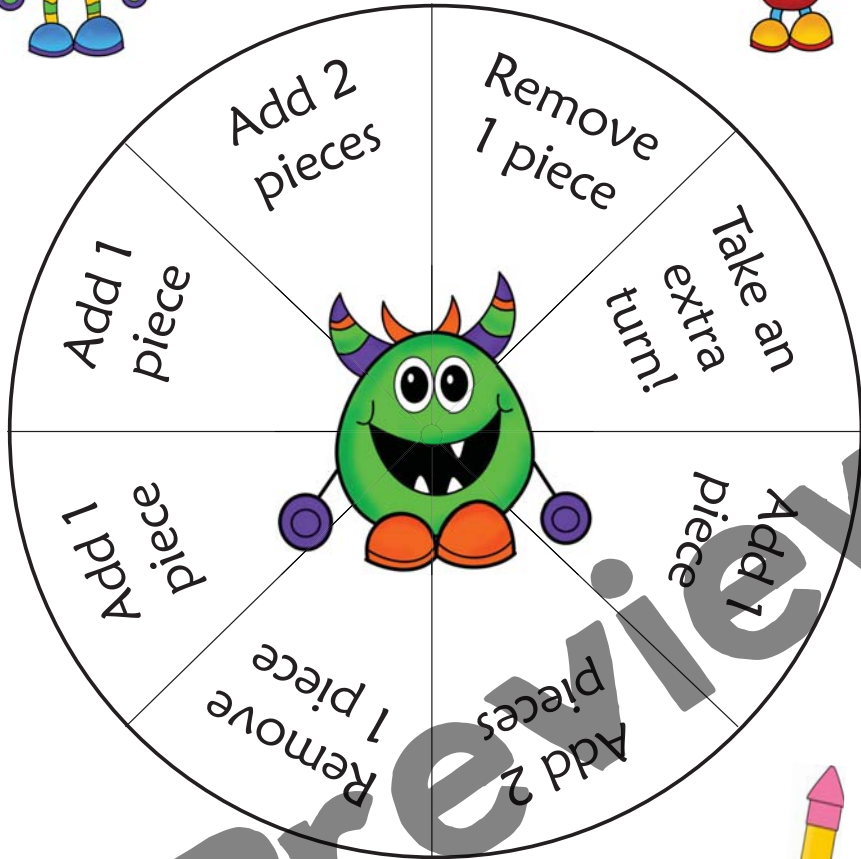**Objective:** To be the first to put together a monster puzzle

Directions:

1. Place the Monster Spinner in the middle of the team. Shuffle the deck of problem cards and place them <u>face down</u> near the spinner. Place the answer key face down near the pile of cards.

Materials
- Two monster puzzles
- Monster spinner, pencil, and paper clip
- Math Problem Cards
- Answer Key

2. Both players need one monster puzzle. Mix up the 10 pieces of your puzzle and place them to the side of the playing area. During the game, each player will try to earn puzzle pieces by solving problems correctly.

3. Players take turns being the Problem Caller and the Problem Solver. The person wearing the most blue is the first Problem Caller.

4. The Problem Caller turns over a problem card, reads it aloud, and shows it to the other player. The Problem Solver works out the problem and shows it to the Caller who checks the answer with the key.

5. If the answer is correct, the Problem Solver spins the spinner and takes the given action as shown on the spinner. For example, if the directions say to "Add 1 piece," the Solver selects a puzzle piece and begins to create his or her monster puzzle. If a player lands on "Take another turns," he or she solves another problem and spins again.

6. If the answer is not correct, the Problem Solver does not spin the spinner. Instead, both students work together to figure out why the problem was missed.

7. Switch roles so that the Problem Solver becomes the new Problem Caller. Repeat steps 4 through 7. Play continues until one person puts together a complete monster puzzle.

Monster Spinner

Add 2 pieces

Remove 1 piece

Add 1 piece

Take an extra turn!

Add 1 piece

Add 1 piece

Add 2 pieces

Remove 1 piece

Directions: To use the spinner, you'll need a paper clip and a pencil. Put the paper clip down with one end over the center dot. Put the pencil point down inside the paper clip and hold the pencil in place. Thump the paper clip. It will spin around the pencil point and point to one section on the spinner.
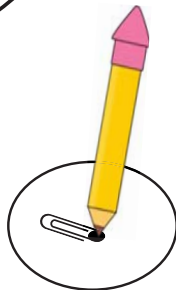
Monster Math Mix-up 1

Cut out the entire puzzle around the outside of the large rectangle. Then carefully cut the puzzle into 10 pieces on the dark blue lines. Mix up the pieces and place them in a pile to use during the game.

Monster Math Mix-up 2

Cut out the entire puzzle around the outside of the large rectangle. Then carefully cut the puzzle into 10 pieces on the dark blue lines. Mix up the pieces and place them in a pile to use during the game.

Monster Math Mix-up 3

Cut out the entire puzzle around the outside of the large rectangle. Then carefully cut the puzzle into 10 pieces on the dark blue lines. Mix up the pieces and place them in a pile to use during the game.

Monster Math Mix-up 4

Cut out the entire puzzle around the outside of the large rectangle. Then carefully cut the puzzle into 10 pieces on the dark blue lines. Mix up the pieces and place them in a pile to use during the game.

Part 2

4th Grade Printables

4th Grade Measurement
Overview and Teaching Strategies

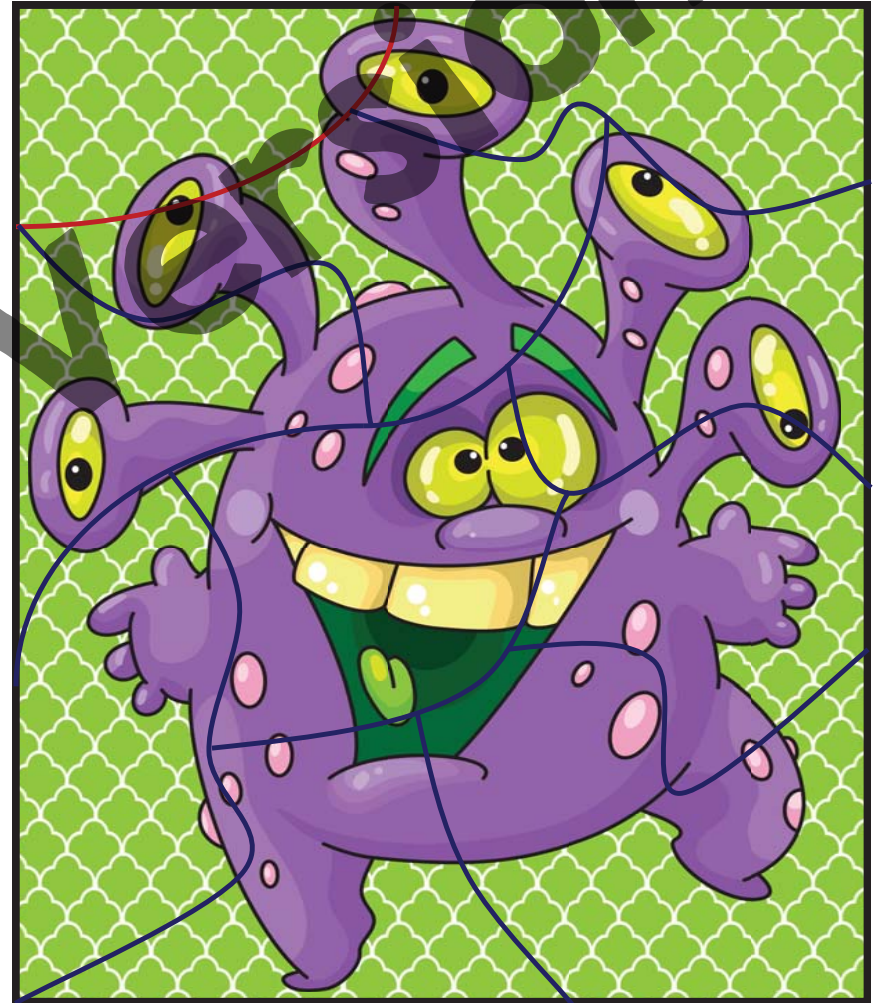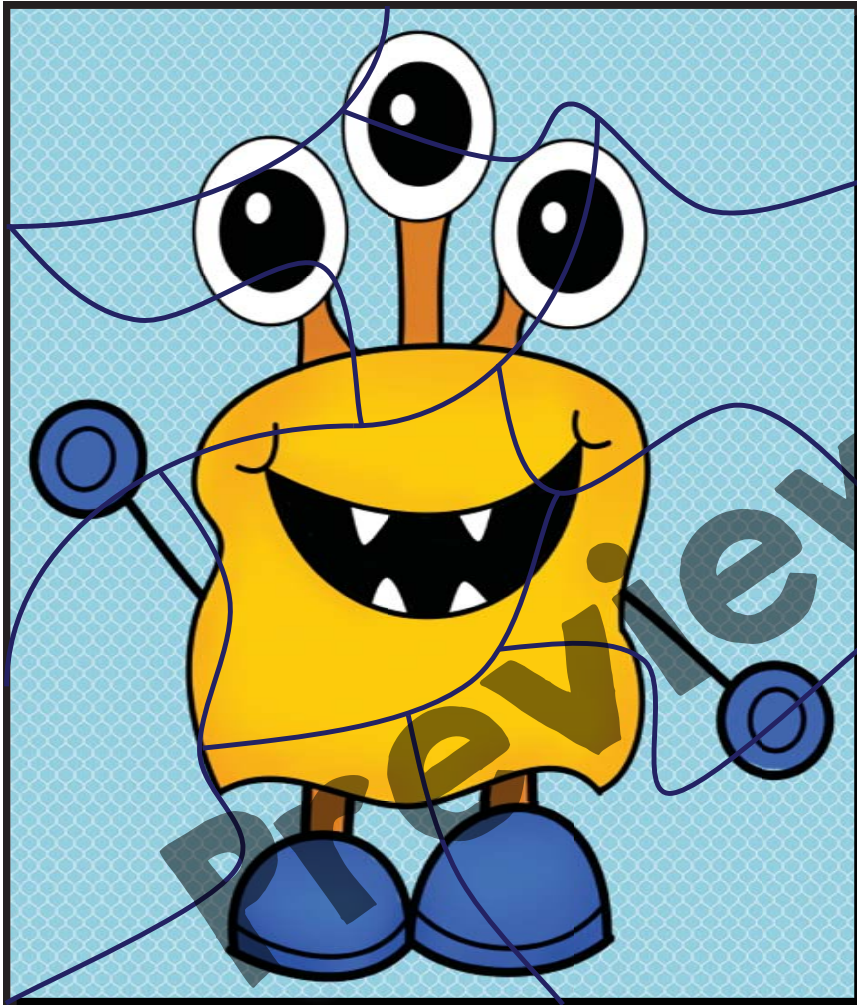The 4th grade and 5th grade Common Core Standards are slightly different, so I've created separate task cards, practice pages, and tests for each grade level. In 4th grade, students only have to convert from a larger to a smaller unit, such as from yards to feet. This means that all conversion problems can be solved with multiplication, and students don't have to determine whether multiplication or division is needed. In addition, according to CCSS 4.MD.1a, students are required to, "Record measurement equivalents in a two-column table." Also, the terms "mass" and "weight" are used interchangeably at this grade.

Teaching Suggestions

1. Measurement Conversion Tables
Students in 4th grade are expected to be able to record measurement equivalents in a two-column table, so I've created a set of function tables such as the one on the right to use for this purpose. I left them completely blank, but you can enter the numbers in the left column before you duplicate the page if you prefer. I suggest displaying it in front of the class to explain how to complete the charts.
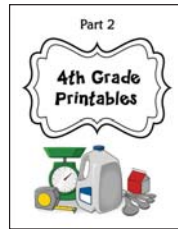
yd	ft
1	3
2	6
3	9
4	12
5	15
6	18

There are two variations of this form. The one on page 38 only has the two-column tables as shown on the right. The one on page 39 can be used if your class has already studied algebraic equations. After completing the table, students are asked to write the rule as an equation. In the example above, the equation would be **yd x 3 = ft**.

2. Customary Measurement Practice
The Customary Measurement Practice on page 40 is a basic worksheet for checking student understanding of conversions. Begin by having students complete the top portion of the practice, items 1 - 10. Then ask them to raise their hands when they finish that section so you can check it. Circle problems that are not correct and provide students with the correct conversion unit. Make a note of any students who miss items in this section, because they'll need additional practice with the activities in Part 1 to help them memorize those basic units. Then ask students to complete the rest of the assignment. You may want to check the basic conversion problems before moving to the word problems. You'll find an answer key on page 41.

3. Measurement Word Problems
Solving measurement word problems is an extremely difficult skill for most students to master. In this packet you'll find 3 pages of word problems for each of the two grade levels. The word problem pages are designed to provide space for students to explain how they arrived at their answers. They are encouraged to show their work on the back of the paper.

Answers to Word Problems:
Set A - #1 - Susan's   #2 - Yes   #3 - 7 servings   #4 - 2 pounds
Set B - #1 - 4 placemats   #2 - 4   #3 - 11,000 lbs   #4 - $6.00
Set C - #1 - 4 quarts   #2 - 6 shelves   #3 - 12 guests   #4 - 8 burgers

You can use the Measurement Word Problem pages in a variety of ways. They can be used for independent practice or for a cooperative problem solving activity. If you have any of my Daily Math Puzzler books, you'll recognize the format and you'll know just what to do! This program is explained in a free webinar you can watch from my Problem Solving page on Teaching Resources. Visit this page for more information about problem solving strategies: http://www.lauracandler.com/filecabinet/math/problemsolving.php

4. Customary Conversion Task Cards
This set of 24 problem cards is similar to the ones on pages 25 - 27, except these cards include conversion problems rather than basic unit problems. The Customary Conversion Task Cards can be used with Math Showdown or Monster Math Mix-up.
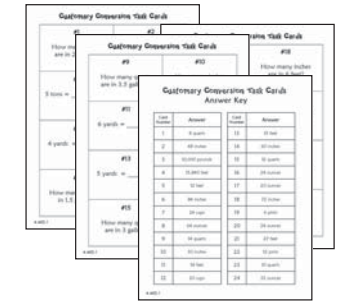
5. Measurement Test and Retest
The final items in the 4th grade section are a Measurement Test and a Retest that's similar in format with different problems. To help you keep these tests from getting mixed up with the 5th grade tests, I've added the standard numbers in the lower left corner. You'll find the answer key for each test or retest immediately following that item.

When you give the first test, I suggest asking students to complete the top part, items 1 - 10, and letting you check those answers before they complete the lower sections of the test. If they miss any of those basic measurement units, there's really no need to keep going because they're going to do poorly on rest of the test. Provide them with the correct answers so that they can finish and so that you can assess how well they solve conversion problems. However, no matter how well they do on the lower portion, they'll need to retake the test after they study and practice those units.

Measurement Conversion Tables

Name _____

Feet to Inches

ft	in

Yards to Feet

yd	ft

Pounds to Ounces

lb	oz

Tons to Pounds

T	lb

Gallons to Quarts

gal	qt

Quarts to Pints

qt	pt

Cups to Ounces

c	oz

Quarts to Cups

qt	c

Measurement Conversion Tables

Name _____

Feet to Inches

ft	in

Write the rule as an equation.

Yards to Feet

yd	ft

Write the rule as an equation.

Pounds to Ounces

lb	oz

Write the rule as an equation.

Tons to Pounds

T	lb

Write the rule as an equation.

Gallons to Quarts

gal	qt

Write the rule as an equation.

Quarts to Pints

qt	pt

Write the rule as an equation.

Cups to Ounces

c	oz

Write the rule as an equation.

Quarts to Cups

qt	c

Write the rule as an equation.

Customary Measurement Practice

Name _____

Length
1. 1 yard = _____ feet
2. 1 foot = _____ inches
3. 1 mile = _____ feet

Mass
4. 1 ton = _____ pounds
5. 1 pound = _____ ounces

Liquid Volume
6. 1 pint = _____ cups
7. 1 gallon = _____ quarts
8. 1 quart = _____ pints
9. 1 cup = _____ ounces
10. 1 gallon = _____ cups

Basic Conversion Problems
11. 5 feet = _____ inches
12. 4 miles = _____ feet
13. 6 yards = ____ feet
14. 4½ tons = _____ pounds
15. 8 pints = _____ cups
16. 3.5 quarts = _____ cups
17. 3 pounds = _____ ounces
18. 4 pints = _____ cups
19. 6 feet = _____ inches
20. 3 gallons = _____ quarts

Word Problems
21. How many pounds does a 2.5 ton car weigh?   _____
22. A punch recipe calls for 2 quarts of soda and 1 quart of juice to be mixed together. How many one-cup servings does this make?   _____
23. Sara jumped 5.5 feet and Tony jumped 2 yards. Who jumped farther?   _____
24. Tom ate a half-pound steak for dinner. How many ounces of steak did he eat?   _____
25. If a plant grows 2 inches a week, how many weeks will it take to grow one foot?   _____

Customary Measurement Practice Answer Key

Length
1. 1 yard = __3__ feet
2. 1 foot = __12__ inches
3. 1 mile = _5,280_ feet

Mass
4. 1 ton = _2,000_ pounds
5. 1 pound = __16__ ounces

Liquid Volume
6. 1 pint = __2__ cups
7. 1 gallon = __4__ quarts
8. 1 quart = __2__ pints
9. 1 cup = __8__ ounces
10. 1 gallon = __16__ cups

Basic Conversion Problems
11. 5 feet = __60__ inches
12. 4 miles = _21,120_ feet
13. 6 yards = __18__ feet
14. 4½ tons = _9,000_ pounds
15. 8 pints = __16__ cups
16. 3.5 quarts = __14__ cups
17. 3 pounds = __48__ ounces
18. 4 pints = __8__ cups
19. 6 feet = __72__ inches
20. 3 gallons = __12__ quarts

Word Problems
21. How many pounds does a 2.5 ton car weigh?   _5,000 lb_
22. A punch recipe calls for 2 quarts of soda and 1 quart of juice to be mixed together. How many one-cup servings does this make?   __12__
23. Sara jumped 5.5 feet and Tony jumped 2 yards. Who jumped farther?   _Tony_
24. Tom ate a half-pound steak for dinner. How many ounces of steak did he eat?   _8 oz_
25. If a plant grows 2 inches a week, how many weeks will it take to grow one foot?   _6 wks_

Customary Conversion Task Cards

#1 How many quarts are in 2 gallons?	#2 How many inches are in 4 feet?
#3 5 tons = _____ pounds	#4 How many feet are in 3 miles?
#5 4 yards = _____ feet	#6 How many inches are in 7 feet?
#7 How many cups are in 1.5 gallons?	#8 4 pounds = _____ ounces

Customary Conversion Task Cards

#9 How many quarts are in 3.5 gallons?	#10 How many inches are in 2½ feet?
#11 6 yards = _____ feet	#12 How many cups are in 5 quarts?
#13 5 yards = _____ feet	#14 How many inches are in 5 feet?
#15 How many quarts are in 3 gallons?	#16 1.5 pounds = _____ ounces

Customary Conversion Task Cards

#17 How many ounces in are in 2.5 cups?	**#18** How many inches are in 6 feet?
#19 3 quarts = _____ pints	**#20** How many ounces are in 3 cups?
#21 9 yards = _____ feet	**#22** How many pints are in 6 quarts?
#23 How many quarts are in 2.5 gallons?	**#24** 4 cups = _____ ounces

4.MD.1

43

Customary Conversion Task Cards
Answer Key

Card Number	Answer	Card Number	Answer
1	8 quarts	13	15 feet
2	48 inches	14	60 inches
3	10,000 pounds	15	12 quarts
4	15,840 feet	16	24 ounces
5	12 feet	17	20 ounces
6	84 inches	18	72 inches
7	24 cups	19	6 pints
8	64 ounces	20	24 ounces
9	14 quarts	21	27 feet
10	30 inches	22	12 pints
11	18 feet	23	10 quarts
12	20 cups	24	32 ounces

4.MD.1

44

Measurement Problems A

Name _____

Date _____

Work the problems below and write your answer in the blank. If you need to draw a diagram or illustration to solve the problem, use the back of this paper. Then clearly explain the steps you took to arrive at that answer.

1. Jane's paper airplane went 36 feet without stopping. Susan's went 13 yards. Whose plane went farther? Why?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

2. Donald bought 2 gallons of punch for his birthday party. He wanted enough punch to serve himself and each of his 9 guests three cups of punch. Did he buy enough?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

3. A punch recipe calls for 1 quart of cherry soda, 1 pint of grape juice, and 1 cup of lemonade. How many 1 cup servings will the recipe make?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

4. Each candy bar in a box has a mass of 2 ounces, and the box itself weighs 4 ounces. If there are 14 candy bars in the box, what is its total mass in pounds?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

4.MD.2

45

Measurement Problems B

Name _____

Date _____

Work the problems below and write your answer in the blank. If you need to draw a diagram or illustration to solve the problem, use the back of this paper. Then clearly explain the steps you took to arrive at that answer.

1. Teresa bought 2 yards of fabric to make placemats. Her directions call for 1/2 yard to make each placemat. How many placemats can she make?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

2. Tony bought a pound of lunch meat. If he puts 4 ounces of meat on each sandwich, how many sandwiches can he make?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

3. If an adult Asian elephant has a mass of 5.5 tons, what is it's total mass in pounds?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

4. Maria packed a dozen oranges in a box, and each orange has a mass of 4 ounces. If it costs $2.00 per pound to mail the box, how much will Maria have to pay for postage?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

4.MD.2

46

Measurement Problems C

Name _____

Date _____

Work the problems below and write your answer in the blank. If you need to draw a diagram or illustration to solve the problem, use the back of this paper. Then clearly explain the steps you took to arrive at that answer.

1. Greg's fish bowl holds 2 gallons of water. If he fills it exactly half full, how many quarts of water did he pour in? Answer: _____ Explanation: _____ _____ _____ _____ _____ _____ _____	2. Trinity bought two 6-foot long boards to make a set of shelves. If she cuts each shelf to a length of 24 inches, how many shelves can she make from those boards? Answer: _____ Explanation: _____ _____ _____ _____ _____ _____ _____
3. Trisha plans to serve each guest at her party one cup of ice cream. How many guests can she serve with 3 quarts of ice cream? Answer: _____ Explanation: _____ _____ _____ _____ _____ _____ _____	4. Mark bought a package of 4-ounce hamburgers with a total mass of 2 pounds. How many hamburgers were in the package? Answer: _____ Explanation: _____ _____ _____ _____ _____ _____ _____

Name _____

Customary Measurement Test

Length
1. 1 foot = _____ inches
2. 1 yard = _____ feet
3. 1 mile = _____ feet

Mass
4. 1 pound = _____ ounces
5. 1 ton = _____ pounds

Liquid Volume
6. 1 cup = _____ ounces
7. 1 pint = _____ cups
8. 1 quart = _____ pints
9. 1 gallon = _____ quarts
10. 1 gallon = _____ cups

Converting Measurements
11. 2 feet = _____ inches
12. 2 miles = _____ feet
13. 5 yards = ____ feet
14. 2½ tons = _____ pounds
15. 4 gallons = _____ quarts
16. 5 gallons = _____ quarts
17. 3 pounds = _____ ounces
18. 3.5 pints = _____ cups

Word Problems
19. A punch recipe calls for 2 quarts orange juice and 1 quart ginger ale. How many cups of punch will it make?   _____

20. A car weighs 3 tons. How many pounds is that?   _____

Bonus:
Greg weighed 6 equal-sized apples together and found that they weighed 3 pounds in all. How many ounces does each apple weigh by itself?   _____

Customary Measurement Test
Answer Key

Length

1. 1 foot = __12__ inches
2. 1 yard = __3__ feet
3. 1 mile = __5,280__ feet

Mass

4. 1 pound = __16__ ounces
5. 1 ton = __2,000__ pounds

Liquid Volume

6. 1 cup = __8__ ounces
7. 1 pint = __2__ cups
8. 1 quart = __2__ pints
9. 1 gallon = __4__ quarts
10. 1 gallon = __16__ cups

Converting Measurements

11. 2 feet = __24__ inches
12. 2 miles = __10,560__ feet
13. 5 yards = __15__ feet
14. 2½ tons = __5,000__ pounds
15. 4 gallons = __16__ quarts
16. 5 gallons = __20__ quarts
17. 3 pounds = __48__ ounces
18. 3.5 pints = __7__ cups

Word Problems

19. A punch recipe calls for 2 quarts orange juice and 1 quart ginger ale. How many cups of punch will it make? __12 c__

20. A car weighs 3 tons. How many pounds is that? __6,000 lb__

Bonus:

Greg weighed 6 equal-sized apples together and found that they weighed 3 pounds in all. How many ounces does each apple weigh by itself? __8 oz__
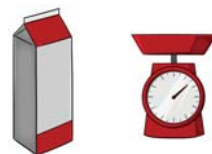
Name _____

Customary Measurement Retest

Length

1. 1 mile = _____ feet
2. 1 foot = _____ inches
3. 1 yard = _____ feet

Mass

4. 1 ton = _____ pounds
5. 1 pound = _____ ounces

Liquid Volume

6. 1 quart = _____ pints
7. 1 gallon = _____ cups
8. 1 pint = _____ cups
9. 1 gallon = _____ quarts
10. 1 cup = _____ ounces

Converting Measurements

11. 36 inches = _____ feet
12. 3 miles = _____ feet
13. 4 yards = ____ feet
14. 2.5 tons = _____ pounds
15. 3 gallons = _____ quarts
16. 2½ quarts = _____ cups
17. 2 pounds = _____ ounces
18. 3 cups = _____ ounces

Word Problems

19. Mary bought a board that was 2 yards long. She wants to cut it into shelves that are 1 foot long. How many shelves can she cut from the board? _____

20. A cat weighs 2 pounds. How many ounces is that? _____

Bonus:

Six oranges are packed in a box. Each orange weighs 8 ounces. How many pounds does the box weigh? _____

Customary Measurement Retest

Name _____

Length
1. 1 mile = __5,280__ feet
2. 1 foot = __12__ inches
3. 1 yard = __3__ feet

Mass
4. 1 ton = __2,000__ pounds
5. 1 pound = __16__ ounces

Liquid Volume
6. 1 quart = __2__ pints
7. 1 gallon = __16__ cups
8. 1 pint = __2__ cups
9. 1 gallon = __4__ quarts
10. 1 cup = __8__ ounces

Converting Measurements
11. 3 feet = __36__ inches
12. 3 miles = __15,840__ feet
13. 4 yards = __12__ feet
14. 2.5 tons = __5,000__ pounds
15. 3 gallons = __12__ quarts
16. 2½ quarts = __10__ cups
17. 2 pounds = __32__ ounces
18. 3 cups = __24__ ounces

Word Problems
19. Mary bought a board that was 2 yards long.
    She wants to cut it into shelves that are 1 foot long.
    How many shelves can she cut from the board? __6__

20. A cat weighs 2 pounds. How many ounces is that? __32 oz__

Bonus:
Six oranges are packed in a box. Each orange weighs 8 ounces. How many pounds does the box weigh? __3 lb__

Part 3

5th Grade Printables

5th Grade Measurement
## Overview and Teaching Strategies

Part 3

5th Grade Printables

The 4th grade and 5th grade Common Core Standards are slightly different, so I've created separate task cards, practice pages, and tests for each grade level. In 4th grade, students only have to convert from a larger to a smaller unit, such as from yards to feet. However, in 5th grade they have to be able to convert measurements both ways. At this grade level, as in 4th grade, the terms "mass" and "weight" are used interchangeably.

1. Introducing Conversions with Hands-on Practice

Solving conversion problems in 5th grade can be tricky because students have to determine whether to multiply or divide to make the conversion. I've found that the best way to introduce conversions is to use familiar units of measurement like inches, feet, and yards and have students practice with easy hands-on problems that they can solve by measuring. Pose questions like, "How many inches are in 2 feet?" Then demonstrate with a ruler how to solve the problem. Write the equation "2 feet = _____ inches" and show them that when you convert from a larger unit (feet) to a smaller one (inches), you will end up with more of the second unit. Therefore you would multiply. Then do the problem in reverse and ask, "How many feet are in 24 inches?" Write the problem as "24 inches = _____ feet" and demonstrate how when moving from a smaller unit to a larger one, you'll need to divide the number of units. Practice with a variety of different problems involving actual units of measurement that you can demonstrate or have students check with hands-on practice.

2. Customary Conversion Task Cards

After you introduce this with simple hands-on activities, you can use the 24 Customary Conversion Task Cards on pages 57 - 59 to provide more practice. These cards are designed to be used with games like Math Showdown and Monster Math Mix-up, but because the 5th grade conversions are so challenging, I suggest displaying the cards one at a time and working through the set as a class. This set of 24 problem cards is similar to the cards in Part I, except these cards have 5th grade conversion problems rather than basic unit problems. If these are too difficult for your students, you can start with the 4th grade set. They look very similar so the CCSS number in the lower left corner will help you keep them from getting mixed up. I've provided an answer key for these task cards on page 60.
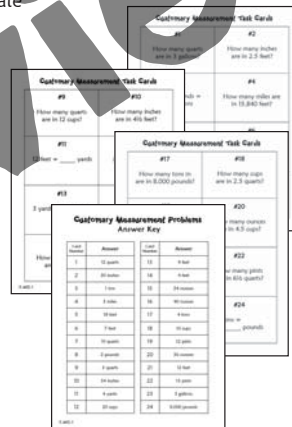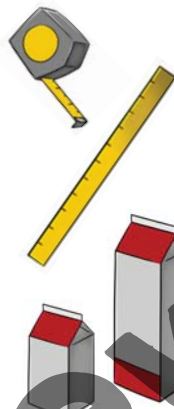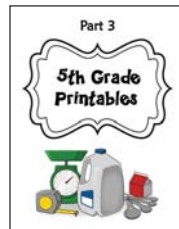
3. Customary Measurement Practice

The Customary Measurement Practice on page 61 is a basic worksheet for checking student understanding of conversions. Begin by having students complete the top portion of the practice, items 1 - 10. Then ask them to raise their hands when they finish that section so you can check it. Circle problems that are not correct and provide students with the correct conversion unit. Make a note of any students who miss items in this section, because they'll need additional practice with the activities in Part I to help them memorize those basic units. Then ask students to complete the rest of the assignment. You may want to check the basic conversion problems before moving to the word problems. You'll find an answer key on page 62.

4. Measurement Word Problems

Solving measurement word problems is an extremely difficult skill for most students to master. In this packet you'll find 3 pages of word problems for each of the two grade levels. The word problem pages are designed to provide space for students to explain how they arrived at their answers. Students are encouraged to show their work on the back of the paper. The problems in this section often involve multiple steps and include decimals and fractions. They are aligned the Common Core standards for 5th grade, but your students may not be ready for them at first. I suggest that you review these problems and actually work them out yourself before using them with your students. If you feel they are too difficult, you can start your students out with the 4th grade word problems on pages 46 - 48.

Answers to 5th Grade Word Problems:
Set A - #1 - snake, 10 inches   #2 - yes   #3 - 14 servings (½ cup)   #4 - $5.00
Set B - #1 - $11.00   #2 - 10 ounces   #3 - 2 pounds   #4 - 2 cups
Set C - #1 - 44 minutes   #2 - 8 days   #3 - $7.80   #4 - 12 minutes

You can use the Measurement Word Problem pages in a variety of ways. They can be used for independent practice or for a cooperative problem solving activity. If you have any of my Daily Math Puzzler books, you'll recognize the format and you'll know just what to do! This program is explained in a free webinar you can watch from my Problem Solving page on Teaching Resources. Visit this page for more information about problem solving strategies: http://www.lauracandler.com/filecabinet/math/problemsolving.php
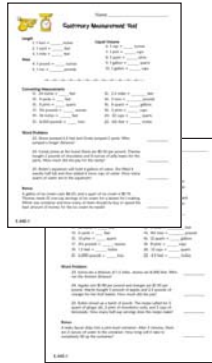
5. Measurement Test and Retest

The final items in the 5th grade section are a Measurement Test and a Retest. To help you keep these tests from getting mixed up with the 4th grade tests, I've added the CCSS number in the lower left corner. You'll find the answer key for each test or retest immediately following that item.

When you give the first test, I suggest asking students to complete the top part, items 1 - 10, and letting you check those answers before they complete the lower sections of the test. If they miss any of those basic measurement units, there's really no need to keep going because they're going to do poorly on rest of the test. Provide them with the correct answers so that they can finish and so that you can assess how well they solve conversion problems. However, no matter how well they do on the lower portion, they'll need to retake the test after they study and practice those units.

Customary Measurement Task Cards

#1	#2
How many quarts are in 3 gallons?	How many inches are in 2.5 feet?

#3	#4
6,000 pounds = _____ tons	How many miles are in 15,840 feet?

#5	#6
6 yards = _____ feet	How many feet are in 84 inches?

#7	#8
How many quarts are in 2.5 gallons?	32 ounces = _____ pounds

Customary Measurement Task Cards

#9	#10
How many quarts are in 12 cups?	How many inches are in 4½ feet?
#11	**#12**
12 feet = _____ yards	How many cups are in 5 quarts?
#13	**#14**
27 feet = _____ yards	How many feet are in 48 inches?
#15	**#16**
How many ounces are in 3 cups?	2.5 pounds = _____ ounces

Customary Measurement Task Cards

#17	#18
How many tons in are in 8,000 pounds?	How many cups are in 2.5 quarts?
#19	**#20**
6 quarts = _____ pints	How many ounces are in 4.5 cups?
#21	**#22**
5 yards = _____ feet	How many pints are in 6½ quarts?
#23	**#24**
How many gallons are in 12 quarts?	4.5 tons = _____ pounds

Customary Measurement Problems
Answer Key

Card Number	Answer		Card Number	Answer
1	12 quarts		13	9 yards
2	30 inches		14	4 feet
3	3 tons		15	24 ounces
4	3 miles		16	40 ounces
5	18 feet		17	4 tons
6	7 feet		18	10 cups
7	10 quarts		19	12 pints
8	2 pounds		20	36 ounces
9	3 quarts		21	15 feet
10	54 inches		22	13 pints
11	4 yards		23	3 gallons
12	20 cups		24	9,000 pounds

Customary Measurement Practice

Name _____

Length
1. 1 yard = _____ feet
2. 1 foot = _____ inches
3. 1 mile = _____ feet

Liquid Volume
6. 1 pint = _____ cups
7. 1 gallon = _____ quarts
8. 1 quart = _____ pints
9. 1 cup = _____ ounces
10. 1 gallon = _____ cups
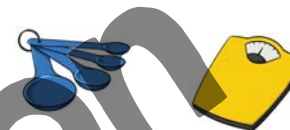
Mass
4. 1 ton = _____ pounds
5. 1 pound = _____ ounces

Basic Conversion Problems
11. 60 inches = _____ feet
12. 4 miles = _____ feet
13. 6 yards = ____ feet
14. 4 tons = _____ pounds
15. 8.5 pints = _____ cups
16. 12 cups = _____ quarts
17. 3 pounds = _____ ounces
18. 4 pints = _____ cups
19. 6 feet = _____ inches
20. 32 cups = _____ gallons
21. 9 feet = _____ yards
22. 2.5 tons = _____ pounds
23. 18 inches = _____ feet
24. 3½ cups = _____ ounces
25. 8 quarts = _____ gallons
26. 15,840 feet = _____ miles

Word Problems

27. A recipe for punch calls for 2 quarts of orange juice and 3 cups of ginger ale. How many 1/2 cup servings will it make? _____

28. A piece of ribbon is 12 feet long. If it costs 50 cents per yard, how much does the ribbon cost? _____

29. A truck weighs 3.5 tons when it's empty, but it's now loaded with 500 pounds of furniture. What is the total mass of the loaded truck in pounds? _____

30. A company is willing to pay $3.50 per pound for scrap copper wire. How much will they have to pay for 1/2 ton of scrap copper wire? _____

Customary Measurement Practice

Name _____

Length
1. 1 yard = __3__ feet
2. 1 foot = __12__ inches
3. 1 mile = __5,280__ feet

Mass
4. 1 ton = __2,000__ pounds
5. 1 pound = __16__ ounces

Liquid Volume
6. 1 pint = __2__ cups
7. 1 gallon = __4__ quarts
8. 1 quart = __2__ pints
9. 1 cup = __8__ ounces
10. 1 gallon = __16__ cups

Basic Conversion Problems
11. 60 inches = __5__ feet
12. 4 miles = __21,120__ feet
13. 6 yards = __18__ feet
14. 4 tons = __8,000__ pounds
15. 8.5 pints = __17__ cups
16. 12 cups = __3__ quarts
17. 3 pounds = __48__ ounces
18. 4 pints = __8__ cups
19. 6 feet = __72__ inches
20. 32 cups = __2__ gallons
21. 9 feet = __3__ yards
22. 2.5 tons = __5,000__ pounds
23. 18 inches = __1.5__ feet
24. 3½ cups = __28__ ounces
25. 8 quarts = __2__ gallons
26. 15,840 feet = __3__ miles

Word Problems
27. A recipe for punch calls for 2 quarts of orange juice and 3 cups of ginger ale. How many 1/2 cup servings will it make?   __22__

28. A piece of ribbon is 12 feet long. If it costs 50 cents per yard, how much does the ribbon cost?   __$2.00__

29. A truck weighs 3.5 tons when it's empty, but it's now loaded with 500 pounds of furniture. What is the total mass of the loaded truck in pounds?   __7,500 lb__

30. A company is willing to pay $3.50 per pound for scrap copper wire. How much will they have to pay for 1/2 ton of scrap copper wire?   __$3,500__

Measurement Problems A

Name _____

Date _____

Work the problems below and write your answer in the blank. If you need to draw a diagram or illustration to solve the problem, use the back of this paper. Then clearly explain the steps you took to arrive at that answer.

1. A snake slithered 5 feet and an inchworm crawled 50 inches? Which critter traveled farther? How much farther?

Answer: _____

Explanation:
_____
_____
_____
_____
_____
_____
_____

2. Mrs. Thomas made 3½ gallons of tea for the family reunion. She estimates that each of the 17 family members will drink about 3 cups of tea that day. Did she prepare enough?

Answer: _____

Explanation:
_____
_____
_____
_____
_____
_____

3. A punch recipe calls for 1 quart of ginger ale, a pint of cranberry juice, and a cup of lemonade. How many ½ cup servings does this punch recipe make?

Answer: _____

Explanation:
_____
_____
_____
_____
_____
_____
_____
_____
_____

4. A box contains 4 coconuts, each having a mass of 8 ounces. If postage costs $2.50 per pound, how much will it cost to mail the box?

Answer: _____

Explanation:
_____
_____
_____
_____
_____
_____
_____
_____
_____

Measurement Problems B

Name _____

Date _____

Work the problems below and write your answer in the blank. If you need to draw a diagram or illustration to solve the problem, use the back of this paper. Then clearly explain the steps you took to arrive at that answer.

1. Cindy needs to buy ribbon to make hair bows for six of her friends. Each hair bow requires 2 feet of ribbon, and the ribbon costs $2.75 a yard. How much will she have to pay for the ribbon she needs?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

2. Carl's pancake recipe calls for 3/4 of a cup of milk and 1/2 cup of oil. How many ounces of liquid will he need for this pancake recipe?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

3. Greg bought 8 ounces of sliced turkey and 3 times as much sliced ham. How many pounds of lunch meat did he purchase?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____

4. Mrs. Wren bought a half-gallon bucket of popcorn at the movies. She divided it equally between herself and her 3 children. How many cups of popcorn will each person get?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____

5.MD.1

Measurement Problems C

Name _____

Date _____

Work the problems below and write your answer in the blank. If you need to draw a diagram or illustration to solve the problem, use the back of this paper. Then clearly explain the steps you took to arrive at that answer.

1. The city pool is 120 feet long. If it takes Jim 1 minute to swim that distance, how many minutes will it take him to swim a whole mile?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____
_____

2. Mr. Lindon eats 1 cup of ice cream each day, and both of his children each eat 1/2 cup of ice cream a day. How many days will it take to them to eat a gallon of ice cream?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____
_____

3. Darlene bought 3.5 pounds of apples priced at $1.80 a pound and 8 ounces of chocolate priced at $3.00 a pound. How much did she pay in all for her purchases?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____

4. If a ladybug crawls 2 feet in 4 minutes, how long will it take the ladybug to crawl 2 yards?

Answer: _____

Explanation:

_____
_____
_____
_____
_____
_____
_____

5.MD.1

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Name _____

Customary Measurement Test

Length
1. 1 foot = _____ inches
2. 1 yard = _____ feet
3. 1 mile = _____ feet

Mass
4. 1 pound = _____ ounces
5. 1 ton = _____ pounds

Liquid Volume
6. 1 cup = _____ ounces
7. 1 pint = _____ cups
8. 1 quart = _____ pints
9. 1 gallon = _____ quarts
10. 1 gallon = _____ cups

Converting Measurements
11. 24 inches = _____ feet
12. 2.5 miles = _____ feet
13. 9 yards = ____ feet
14. 3 tons = _____ pounds
15. 8 pints = _____ quarts
16. 8 quarts = _____ gallons
17. 3½ pounds = _____ ounces
18. 3 pints = _____ cups
19. 36 inches = _____ feet
20. 32 cups = _____ quarts
21. 8,000 pounds = _____ tons
22. 6½ feet = _____ inches

Word Problems

23. Shaun jumped 6.5 feet and Cindy jumped 2 yards. Who jumped a longer distance? _____

24. Candy prices at the Sweet Shack are $3.50 per pound. Theresa bought 2 pounds of chocolates and 8 ounces of jelly beans for the party. How much did she pay for the candy? _____

25. Robin's aquarium will hold 4 gallons of water. She filled it exactly half full and then added 4 more cups of water. How many quarts of water are in the aquarium? _____

Bonus: A gallon of ice cream costs $4.50, and a quart of ice cream is $1.75. Thomas needs 12 cups of ice cream for a dessert he's making. Which size container is the better buy? How many of that size should he buy to spend the least amount of money for the ice cream he needs? Explain or illustrate your reasoning on the back of this paper. _____

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Customary Measurement Test Answer Key

Length
1. 1 foot = __3__ inches
2. 1 yard = __12__ feet
3. 1 mile = __5,280__ feet

Mass
4. 1 pound = __16__ ounces
5. 1 ton = __2,000__ pounds

Liquid Volume
6. 1 cup = __8__ ounces
7. 1 pint = __2__ cups
8. 1 quart = __2__ pints
9. 1 gallon = __4__ quarts
10. 1 gallon = __16__ cups

Converting Measurements
11. 24 inches = __2__ feet
12. 2.5 miles = __13,200__ feet
13. 9 yards = __27__ feet
14. 3 tons = __6,000__ pounds
15. 8 pints = __4__ quarts
16. 8 quarts = __2__ gallons
17. 3½ pounds = __56__ ounces
18. 3 pints = __6__ cups
19. 36 inches = __3__ feet
20. 32 cups = __8__ quarts
21. 8,000 pounds = __4__ tons
22. 6½ feet = __78__ inches

Word Problems

23. Shaun jumped 6.5 feet and Cindy jumped 2 yards. Who jumped a longer distance? **Shaun**

24. Candy prices at the Sweet Shack are $3.50 per pound. Theresa bought 2 pounds of chocolates and 8 ounces of jelly beans for the party. How much did she pay for the candy? **$8.75**

25. Robin's aquarium will hold 4 gallons of water. She filled it exactly half full and then added 4 more cups of water. How many quarts of water are in the aquarium? **9 qt**

Bonus: A gallon of ice cream costs $4.50, and a quart of ice cream is $1.75. Thomas needs 12 cups of ice cream for a dessert he's making. Which size container is the better buy? How many of that size should he buy to spend the least amount of money for the ice cream he needs? Explain or illustrate your reasoning on the back of this paper. **gallon, 1**
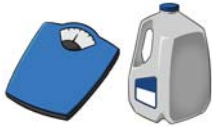
Name _____

Customary Measurement Retest

Length
1. 1 mile = _____ feet
2. 1 foot = _____ inches
3. 1 yard = _____ feet

Mass
4. 1 ton = _____ pounds
5. 1 pound = _____ ounces

Liquid Volume
6. 1 quart = _____ pints
7. 1 gallon = _____ cups
8. 1 pint = _____ cups
9. 1 gallon = _____ quarts
10. 1 cup = _____ ounces

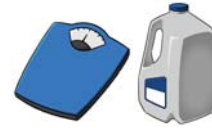– –

Converting Measurements
11. 36 inches = _____ feet
12. 3 miles = _____ feet
13. 6 yards = ____ feet
14. 4½ tons = _____ pounds
15. 12 pints = _____ quarts
16. 12 quarts = _____ gallons
17. 2½ pounds = _____ ounces
18. 8 pints = _____ cups
19. 1.5 feet = _____ inches
20. 12 cups = _____ quarts
21. 6,000 pounds = _____ tons
22. 4.5 feet = _____ inches

Word Problems
23. Sylvia ran a distance of 1.5 miles. Jessica ran 8,000 feet. Who ran the shortest distance? _____

24. Apples cost $1.90 per pound and oranges are $1.50 per pound. Martin bought 3 pounds of apples and 2.5 pounds of oranges for her fruit basket. How much did she pay? _____

25. Robin mixed up a batch of punch. The recipe called for 3 quarts of ginger ale, 2 pints of strawberry soda, and 3 cups of lemonade. How many half-cup servings does this recipe make? _____

Bonus:
A leaky faucet drips into a pint-sized container. After 5 minutes, there are 2 ounces of water in the container. How long will it take to completely fill up the container? _____

5.MD.1

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Customary Measurement Retest Answer Key

Length
1. 1 mile = __5,280__ feet
2. 1 foot = __12__ inches
3. 1 yard = __3__ feet

Mass
4. 1 ton = __2,000__ pounds
5. 1 pound = __16__ ounces

Liquid Volume
6. 1 quart = __2__ pints
7. 1 gallon = __16__ cups
8. 1 pint = __2__ cups
9. 1 gallon = __4__ quarts
10. 1 cup = __8__ ounces

– –

Converting Measurements
11. 36 inches = __3__ feet
12. 3 miles = __15,840__ feet
13. 6 yards = __18__ feet
14. 4½ tons = __9,000__ pounds
15. 12 pints = __6__ quarts
16. 12 quarts = __3__ gallons
17. 2½ pounds = __40__ ounces
18. 8 pints = __16__ cups
19. 1.5 feet = __18__ inches
20. 12 cups = __3__ quarts
21. 6,000 pounds = __3__ tons
22. 4.5 feet = __54__ inches

Word Problems
23. Sylvia ran a distance of 1.5 miles. Jessica ran 8,000 feet. Who ran the shortest distance? __Sylvia__

24. Apples cost $1.90 per pound and oranges are $1.50 per pound. Martin bought 3 pounds of apples and 2.5 pounds of oranges for her fruit basket. How much did she pay? __$9.45__

25. Robin mixed up a batch of punch. The recipe called for 3 quarts of ginger ale, 2 pints of strawberry soda, and 3 cups of lemonade. How many half-cup servings does this recipe make? __38__

Bonus:
A leaky faucet drips into a pint-sized container. After 5 minutes, there are 2 ounces of water in the container. How long will it take to completely fill up the container? __40 minutes__

5.MD.1

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Common Core Standards

Customary Measurement Conversions is aligned with these standards:

- 4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.
- 4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
- 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

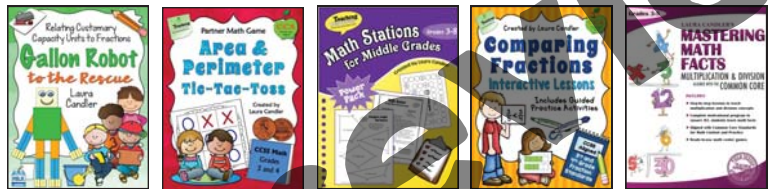## Copyright and Permission Info

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