Unit 3: Measurement

Content Area: **Mathematics**
Course(s):
Time Period: **Generic Time Period**
Length: **6 weeks**
Status: **Published**

Standards

LA.2.W.2.5	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed through self-reflection, revising and editing.
TECH.8.1.2.A.CS2	Select and use applications effectively and productively.
MA.2.2.MD.A	Measure and estimate lengths in standard units.
MA.2.2.MD.B	Relate addition and subtraction to length.
LA.2.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
MA.2.2.MD.C	Work with time and money.
LA.2.RI.2.5	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
PFL.9.1.4.B.5	Identify ways to earn and save.
MA.2.2.NBT.A.2	Count within 1000; skip-count by 5s, 10s, and 100s.
MA.2.2.MD.D	Represent and interpret data.
LA.2.L.2.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
MA.2.2.MD.A.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
MA.2.2.MD.A.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
MA.2.2.MD.A.3	Estimate lengths using units of inches, feet, centimeters, and meters.
MA.2.2.MD.A.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
MA.2.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
MA.2.2.MD.B.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
MA.2.2.MD.B.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,..., and represent whole-number sums and differences within 100 on a number line diagram.

LA.2.RF.2.4	Read with sufficient accuracy and fluency to support comprehension.
MA.2.2.MD.C.7	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
MA.2.2.MD.C.8	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.
LA.2.RF.2.3	Know and apply grade-level phonics and word analysis skills in decoding words.
CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
MA.2.2.MD.D.9	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
LA.2.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
LA.2.RI.2.10	Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.
PFL.9.1.4.B.3	Explain what a budget is and why it is important.
TECH.8.1.2.A.1	Identify the basic features of a digital device and explain its purpose.
PFL.9.1.4.B.2	Identify age-appropriate financial goals.
TECH.8.1.2.A.CS1	Understand and use technology systems.
PFL.9.1.4.A.2	Identify potential sources of income.

Essential Questions

Chapter 7 Essential Question: How do you use the values of coins and bills to find the total value of a group of money, and how do you read times shown on analog and digital clocks?

Lesson 7.1 Essential Question: How do you find the total value of a group of dimes, nickels, and pennies?

Lesson 7.2 Essential Question: How do you find the total value of a group of coins?

Lesson 7.3 Essential Question: How do you order coins to help find the total value of a group of coins?

Lesson 7.4 Essential Question: How do you choose coins to show a money amount in different ways?

Lesson 7.5 Essential Question: How can you show the value of one dollar with coins?

Lesson 7.6 Essential Question: How do you show money amounts greater than one dollar?

Lesson 7.7 Essential Question: How does acting it out help when solving problems about money?

Lesson 7.8 Essential Question: How do you tell time to the hour and half hour on a clock?

Lesson 7.9 Essential Question: How do you tell and show time to five minutes?

Lesson 7.10 Essential Question: What are the different ways you can read the time on a clock?

Lesson 7.11 Essential Question: How do you use a.m. and p.m. to describe times?

Chapter 8 Essential Question: What are some of the methods and tools that can be used to estimate and measure length?

Lesson 8.1 Essential Question: How can you use inch models to measure length?

Lesson 8.2 Essential Question: Why is using a ruler similar to using a row of color tiles to measure length?

Lesson 8.3 Essential Question: How do you estimate the lengths of objects in inches?

Lesson 8.4 Essential Question: How do you use an inch ruler to measure lengths?

Lesson 8.5 Essential Question: How can drawing a diagram help when solving problems about length?

Lesson 8.6 Essential Question: Why is measuring in feet different from measuring in inches?

Lesson 8.7 Essential Question: How do you estimate the lengths of objects in feet?

Lesson 8.8 Essential Question: How do you choose a measuring tool to use when measuring lengths?

Lesson 8.9 Essential Question: How can a line plot be used to show measurement data?

Chapter 9 Essential Question: What are some of the methods and tools that can be used to estimate and measure length in metric units?

Lesson 9.1 Essential Question: How do you use a centimeter model to measure the lengths of objects?

Lesson 9.2 Essential Question: How do you use known lengths to estimate unknown lengths?

Lesson 9.3 Essential Question: How do you use a centimeter ruler to measure lengths?

Lesson 9.4 Essential Question: How can drawing a diagram help when solving problems about lengths?

Lesson 9.5 Essential Question: How is measuring in meters different from measuring in centimeters?

Lesson 9.6 Essential Question: How do you estimate the lengths of objects in meters?

Lesson 9.7 Essential Question: How do you find the difference between the lengths of two objects?

Student Learning Objectives

Unit Focus:

- Measure and estimate lengths in standard units
- Relate addition and subtraction to length
- Work with time
- Understand place value
- Use place value understanding and properties of operations to add and subtract

Critical Area: Using standard units of measure

Chapter 7:

SWBAT find the total values of collections of dimes, nickels, and pennies.

SWBAT find the total values of collections of quarters, dimes, nickels, and pennies.

SWBAT order coins in a collection by value and then find the total value.

SWBAT represent money amounts less than a dollar using two different combinations of coins.

SWBAT show one dollar in a variety of ways.

SWBAT find and record the total value for money amounts greater than $1.

SWBAT solve word problems involving money by using the strategy act it out.

SWBAT tell and write time to the hour and half hour.

SWBAT tell and write time to the nearest five minutes.

SWBAT practice telling time to the nearest five minutes.

SWBAT tell and write time using a.m. and p.m.

Chapter 8:

SWBAT use concrete models to measure the lengths of objects in inches.

SWBAT make an inch ruler and use it to measure the lengths of objects.

SWBAT estimate the lengths of objects by mentally partitioning the lengths into inches.

SWBAT measure the lengths of objects to the nearest inch using an inch ruler.

SWBAT solve addition and subtraction problems involving the lengths of objects by using the strategy draw a diagram.

SWBAT measure the lengths of objects in both inches and feet to explore the inverse relationship between size and number of units.

SWBAT estimate the lengths of objects in feet.

SWBAT select appropriate tools for measuring different lengths.

SWBAT measure the lengths of objects and use a line plot to display the measurement data.

Chapter 9:

SWBAT use a concrete model to measure the lengths of objects in centimeters.

SWBAT estimate lengths of objects in centimeters by comparing them to known lengths.

SWBAT measure lengths of objects to the nearest centimeter using a centimeter ruler.

SWBAT solve problems involving adding and subtracting lengths by using the strategy draw a diagram.

SWBAT measure the lengths of objects in both centimeters and meters to explore the inverse relationship between size and number of units.

SWBAT estimate the lengths of objects in meters.

SWBAT measure and then find the difference in the lengths of two objects.

Materials

Print Resources:

-Student Edition Chapter 7

-Student Edition Chapter 8

-Student Edition Chapter 9

-Chapter 7 Resources

-Chapter 8 Resources

-Chapter 9 Resources

-Grab and Go Center Kit

-Practice and Homework in Student Edition

-Reteach and Enrich in the Chapter Resources

-Play coins, play bills, Vocabulary cards

-Color tiles, colored pencils/crayons, paper strips

-Rulers children made, inch rulers, paper, paper clips

-Yarn, yard sticks, measuring tape

-Base-ten unit cubes, centimeter rulers, meter sticks, masking tape

-Math Boards

Technology:

-Interactive Student Edition

-Interactive Teacher Edition

-Personal Math Trainer

-Math on the Spot Videos

-HMH Mega Math

-Digital Management System

-Animated Math Models

-iTools

-Multimedia eGlossary

-Digital Assessments

-Professional Development Videos

Achieve the Core:

http://achievethecore.org/page/2853/go-math-k-5-guidance-documents

Activities

Measurement

Unit Project: Flying a Kite

Vocabulary Reader: Making a Kite (Science connection/questions about how to make something)

Chapter Seven: Money and Time

Game: 5 and 10 Count

Vocabulary Game: Going to Los Angeles

Lesson 1: Dimes, Nickels, and Pennies

Lesson 2: Quarters

Lesson 3: Count Collections

Lesson 4: Hands On: Show Amounts in Two Ways

Lesson 5: One Dollar

Mid-Chapter Checkpoint

Lesson 6: Amounts Greater Than $1

Lesson 7: Money

Lesson 8: Time to the Hour and Half Hour

Lesson 9: Time to 5 Minutes

Lesson 10: Practice Telling Time

Lesson 11: A.M. and P.M.

Chapter Eight: Length in Customary Units

Game: Longer or Shorter?

Vocabulary Game: Guess the Word

Lesson 1: Hands On: Measure with Inch Models

Lesson 2: Hands On: Make and Use a Ruler

Lesson 3: Estimate Length in Inches

Lesson 4: Hands On: Measure with an Inch Ruler

Lesson 5: Add and Subtract in Inches

Mid-Chapter Checkpoint

Lesson 6: Hands On: Measure in Inches and Feet

Lesson 7: Estimate Lengths in Feet

Lesson 8: Choose a Tool

Lesson 9: Display Measurement Data

Chapter Nine: Length in Metric Units

Game: Estimating Length

Vocabulary Game: Make a Match

Lesson 1: Hands On: Measure with a Centimeter Model

Lesson 2: Estimate Lengths in Centimeters

Lesson 3: Hands On: Measure with a Centimeter Ruler

Lesson 4: Add and Subtract Lengths

Mid-Chapter Checkpoint

Lesson 5: Hands On: Centimeters and Meters

Lesson 6: Estimate Lengths in Meters

Lesson 7: Hands On: Measure and Compare Lengths

Other Activities:

2.MD.A.1,3,4 Determining Length

2.MD.B.5 High Jump Competition

2.MD.B.6 Frog and Toad on the Number Line

2.MD.C.7 Ordering Time

Assessments

MAP Assessment

-Show What You Know

-Share and Show Activities

-On Your Own Activities

-ThinkSmarter

-Math Journals

-Response to Essential Questions

-Practice and Homework Activities (Lesson Check and Spiral Review for each lesson)

-Diagnostic Interview Task

-Digital Personal Math Trainer

-Lesson Quick Check

-Mid-Point Chapter Checkpoint

-Chapter Review

-Chapter Test

-Performance Assessment Task

Fact Fluency

GO Math! Resources for Fluency:

-Games (Student Eddition)
-Fluency Standard Lessons (Student Edition)
-Fluency Builder (Teacher Edition)
-Strategies and Practice for Skills and Facts Fluency- Primary, GK-3
-Teacher Resource Book
-HMH Mega Math
-Personal Math Trainer: Standards Quizzes
-Animated Math Models

Other Resources for Fluency:
-Fastt Math
-Flash Cards

MA.2.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.2.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Accommodations and Modifications

Materials and Resources that provide opportunities to accommodate and modify include:

-Personal Math Trainer (adaptive and intervention system)

-Interactive Student Edition

-Leveled quizzes and tests

-Leveled performance tasks
-Grab & Go Differentiated Centers

-Intensive Intervention Resource

-Strategic Intervention Resource

-Reteach activities

-RTI tiered resources and activities

-Math on the Spot videos

-Fastt Math