Unit 3: Measurement and Data

Content Area: **Mathematics**
Course(s): **Mathematics - Grade 1**
Time Period: **March**
Length: **9 weeks**
Status: **Published**

Unit Overview

Measure lengths indirectly and by iterating length units, tell and write time, and represent and interpret data.

By the beginning of April you should adminster My Math Benchmark 3.

Transfer

Students will be able to indpendently use their learning to measure lengths indirectly by iterating length units, tell and write time, and represetn and interpret data.

Meaning

Understandings

Students will understand:

- how to show and count votes from a survey using a tally chart.
- how to show information using pictures.
- how to show information on a bar graph.
- compare and order objects by length.
- use the same size nonstandard units to span an object with no gaps or overlaps to measure the object.
- use an hour hand to tell time to the hour.
- use a minute hand to tell minutes past the hour.
- compare an analog clock to a digital clock.

- show how to write and say time on a digital clock.

Essential Questions

Students will keep considering:

Chapter 7: How do I make and read graphs?
Chapter 8: How do I determine length and time?

Application of Knowledge and Skill

Students will know:

- Organize, represent, and interpret data using a tally chart.
- Organize, represent data with up to three categories using a picture graph.
- Organize, represent, and interpret data with up to three categories on a bar graph.
- How to compare objects by length.
- How to express the length of an object as a whole number of length units.
- How to tell time on an analog clock.
- How to tell time on a digital clock.

Students will be skilled at:

- Use tally marks to show information in a tally chart.
- Use pictures to show information in a graph.
- Use bar lines to show information on a graph.
- Compare objects by length from longest to shortest.
- Measure an object using nonstandard units.
- Use an analog clock to tell time to the hour and half hour.

- Use a digital clock to read and tell time.

See picture examples in My Math Teacher Manual: What's the Math in this Chapter? Section (Chapters 7-8)

Academic Vocabulary

Stronger emphasis on the understanding of vocabulary to be able to retain and recall the meaning of the words.

- tally chart
- survey
- data
- graph
- picture graph
- bar graph
- length
- long
- short
- measure
- unit
- hour hand
- hour
- minute hand
- minute
- analog clock
- o'clock
- digital clock
- half hour

Learning Goal 1

- Express the length of an object as a whole number of length of units.

Daily Targets

SWBAT:

- Compare and order the lengths of objects. (Ch 8 Lesson 2; Comprehension; DOK 3.)
- Compare the lengths of objects using indirect measurement. (Ch 8 Lesson 1; Comprehension; DOK 2.)
- Guess, check, and revise to solve problems. (Ch. 8 Lesson 4; Analysis; DOK:3)
- Measure the lengths using various sizes of the same non standard units. (Ch 8 Lesson 3; Retrieval; Executing; DOK 1.)

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.1.MD.A	Measure lengths indirectly and by iterating length units.
MA.1.MD.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
MA.1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.

Learning Goal 2

SWBAT read and write time to the hour and half hour on digital and analog clocks.

Daily Targets

SWBAT:

- Read and write time to the hour on an analog clock. (Ch 8 Lesson 5, Retrieval; DOK 1.)
- Read time to the half hour on an analog clock. (Ch 8 Lesson 7; Retrieval DOK 1.)
- Tell and write time to the hour and half hour using digital and analog clocks. (Ch 8 Lesson 9; Retrieval; DOK 1.)
- Use a digital clock to tell and write time to the half hour. (Ch 8 Lesson 8; Retrieval; DOK 1.)
- Use a digital clock to tell and write time to the hour. (Ch 8, Lesson 6; Retrieval; DOK 1.)

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.

MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.1.MD.B	Tell and write time.
MA.1.MD.B.3	Tell and write time in hours and half-hours using analog and digital clocks.

Learning Goal 3

- Represent and interpret data with up to three categories.

Daily Targets

SWBAT:

- Interpret data on a picture graph. (Ch 7 Lesson 4; Comprehension; Integrating; DOK 3.)
- Make a picture graph. (Ch 7 Lesson 3; Comprehension; Symbolizing; DOK 3.)
- Make a table to solve problems. (Ch 7 Lesson 2; Comprehension; Symbolizing; DOK 3.)
- Make and read a tally chart. (Ch 7 Lesson 1; Comprehension; Symbolizing; DOK 3.)
- Read a bar graph. (Ch 7 Lesson 6; Comprehension; DOK 2.)
- Use data to make a bar graph. (Ch 7 Lesson 5; Comprehension; Symbolizing; DOK 3.)

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.1.MD.C	Represent and interpret data.
MA.1.MD.C.4	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Formative Assessment and Performance Opportunities

Chapter 7 Performance Task: **Class Picnic** DOK 2; DOK 3- SW use tally charts, picture graphs, and bar

graphs to answer questions about a class picnic (Rubric in TM pg. 550PT2)

Chapter 8 Performance Task: **A Day At The Farm** DOK 2; DOK 3- SW use an analog clock and digital clocks to tell time,order lengths of vegetables, and measure lengths using non-standard units (Rubric in TM pg. 622PT2)

- Chapter quizzes
- Check My Progress
- Common Core Quick Check
- Concept Check
- Fluency
- Graded Classwork
- Homework
- Link It
- Teacher Observation

Summative Assessment

Chapter Tests

Benchmark Assessment

21st Century Life and Careers and Technology

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace

	with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP5.1	Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
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.
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.
TECH.8.1.2.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.2.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.2.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.2.E.CS3	Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

Accommodations and Modifications

See Common Error! notice in My Math Teacher Manual (Practice and Apply) for tips on differentiation for Chapters 7-8

Computer Resources

StMath

Math Playground

Spalsh Math

Math Game Time

- Centers
- Coherence Map: achievethecore.org/coherence-map

- Computer Resources: see above for hyperlinks
- Have curriculum materials translated into native language
- If students don't understand why 6:30 is also referred to as half past 6, explain to students that there are 60 minutes in one hour, so 30 minutes show half past the hour
- If students fail to count or record each piece of data, have students draw a picture to show a vote before asking a classmate to vote
- If students fail to count or record each piece of data, remind students to double check that the number of pictures they drew, matches the number of tallies shown in the tally chart
- Lesson Extensions
- Manipulatives
- Modifications as per IEP/504
- Review and practice
- RTI guide in My Math chapter specific
- Small group instruction
- Use inquiry-based, discovery learning approaches that emphasize open-ended problems with multiple solutions or multiple paths to solutions for higher learners
- Use visual presentations of verbal material

Unit Resources

- AAAmath http://www.aaamath.com/
- ABCYA: http://www.abcya.com
- Brainpop http://www.brainpop.com/
- Coherence Map: achievethecore.org/coherence-map
- Cool math 4 kids http://www.coolmath4kids.com/
- Funbrain http://www.funbrain.com/
- Illustrative Mathematics
- Math Fact Café http://www.mathfactcafe.com/
- Math playground http://www.mathplayground.com/
- My Math Chapters 7-8
- My Math: Foldables
- My Math: Learning Stations
- My Math: Model the Math
- My Math: Trade Books to improve interdisciplinary connections
- My Math: Vocabulary Cards
- ST MATH (Swap Sort, Measure It With Objects, Venn Space, Time On A Line)

Interdisciplinary Connections

A Wet Week (Teacher Guide page 2) records weather and rainfall in a town for a week. Students have the opportunity to campare data and read graphs. (1.MD.4)

*How Fast, How far? (*Teacher Guide page 8) students compare animals for speed and distance. They read and interpret graphs and draw conclusions. (1.MD.4)

*I Like That Too (*Teacher Guide page 9) in the book *I Like That Too,* a variety of graphs and tally charts are used to answer questions and draw conclusions about what Maria's friends like. (1.NBT.4)

SCI.1-LS3	Heredity: Inheritance and Variation of Traits
SOC.6.1.4	U.S. History: America in the World: All students will acquire the knowledge and skills to think analytically about how past and present interactions of people, cultures, and the environment shape the American heritage. Such knowledge and skills enable students to make informed decisions that reflect fundamental rights and core democratic values as productive citizens in local, national, and global communities.
1-ESS1-2.3.1	Make observations (firsthand or from media) to collect data that can be used to make comparisons.