

Unit 4: Mathematics - Measurement and Data (Grade 4)

Content Area: **Mathematics**
Course(s): **Math 4**
Time Period: **Marking Period 3**
Length: **May**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

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|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MA.4.MD.A | Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. |
| MA.4.MD.A.1 | Know relative sizes of measurement units within one system of units including km, m, cm, mm; 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. |
| MA.4.MD.A.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. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. |
| MA.4.MD.A.3 | Apply the area and perimeter formulas for rectangles in real world and mathematical problems. |
| MA.4.MD.B | Represent and interpret data. |
| MA.4.MD.B.4 | Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. |
| SEL.PK-12.2.2 | Recognize the skills needed to establish and achieve personal and educational goals |
| SEL.PK-12.2.3 | Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals |
| SEL.PK-12.3.4 | Demonstrate an awareness of the expectations for social interactions in a variety of settings |
| SEL.PK-12.4.1 | Develop, implement and model effective problem-solving, and critical thinking skills |
| SEL.PK-12.5.1 | Establish and maintain healthy relationships |
| SEL.PK-12.5.2 | Utilize positive communication and social skills to interact effectively with others |

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How can line plots and other tools help to solve measurement problems?
- What are customary and metric units for measuring length, capacity, and weight/mass, and how are they related?
- What do area and perimeter mean and how can each be found?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- Area is the amount of surface a figure covers and can be found by multiplying length by width.
- Customary units of capacity: cup, pint, quart, gallon.
- Customary units of length: inch, foot, yard, mile.
- Length and capacity can be estimated and measured in different systems (customary/metric) and using different units in each that are related to each other.
- Line plots show data along a number line and can be used to answer questions about the data it contains.
- Metric units of capacity: milliliter, liter.
- Metric units of length: millimeter, centimeter, decimeter, meter, kilometer.
- Perimeter is the distance around a figure and can be found by adding the lengths of all sides.
- Units of mass: gram, kilogram.
- Units of weight: ounce, pound, ton.

Content

Students will be able to:

- estimate and measure length by choosing the most appropriate unit of length.
- estimate and compare relative sizes of customary units.
- estimate and measure with units of weight.
- convert between customary units.
- estimate and measure length to the nearest centimeter, and choose the most appropriate metric unit for measuring length.
- estimate and measure fluently with liters and milliliters.
- estimate and measure fluently with units of mass.
- convert between metric units.
- compare units of time and convert from one unit of time to another.
- use formulas for perimeter and area.
- use diagrams to show data and solve real world problems.
- solve real world problems that involve money and giving change by counting.
- construct line plots using given data and use it to answer questions.
- break word problems apart into smaller, more manageable pieces and find a pattern to solve.

Vocabulary students will know:

inch

foot

yard

mile

capacity

weight

ounce

pound

ton

millimeter

centimeter

decimeter

meter

kilometer

milliliter

liter

mass

gram

kilogram

perimeter

area

line plot

Resources

Envision2020 Resources:

- Textbook
- <https://reader.savvasrealize.com/#/login>
- Lesson Flipcharts
- Daily Common Core Review
- Quick Checks
- Mad Minutes
- Envision Topic Tests
- Manipulatives

- Reteaching Pages
- Practice Pages
- Enrichment Pages
- Math Centers

Specific Items for Measurement and Data:

- Online math games from teacher website.
- The Librarian Who Measured the Earth by Kathryn Lasby
- How Big is a Foot? by Rolf Myller
- Measuring Penny by Loreen Leedy