Unit 12 - Chapter 12: Relative Sizes of Measurement Units

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

Unit Summary

In this unit, the students will be using benchmarks to understand the relative sizes of measurement units. Students will also learn about the customary and metric systems of measurement. Students will convert customary and metric units of length, weight, liquid volume, and mass. Students will also use data to create line plots and use models to compare units of time. Students will also solve problems involving elapsed time and mixed measures.

Standards

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.B.4	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.
TECH.8.1.5	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Student Learning Objectives

Still will learn to:

- use benchmarks to understand the relative sizes of measurement units.
- use models to compare customary units of length.
- use models to compare customary units of weight.
- use models to compare customary units of liquid volume.
- make and interpret line plots with fractional data.
- use models to compare metric units of length.
- compare metric units of mass and liquid volume.
- use models to compare units of time.

- use the strategy *draw a diagram* to solve elapsed time problems.
- solve problems involving mixed measures.
- use patterns to write number pairs for measurement units.

Essential Questions

- How can you use benchmarks to understand the relative sizes of measurement units?
- How can you use models to compare customary units of length?
- How can you use models to compare customary units of weight?
- How can you use models to compare customary units of liquid volume?
- How can you make and interpret line plots with fractional data?
- How can you use models to compare metric units of length?
- How can you compare metric units of mass and liquid volume?
- How can you use models to compare units of time?
- How can you use the strategy *draw a diagram* to solve elapsed time problems?
- How can you solve problems involving mixed measures?
- How can you use patterns to write number pairs for measurement units?

Enduring Understanding

Students understand that:

- benchmarks and models are used to see the relative sizes of measurement units.
- models are used to compare customary units of length, weigth, and liquid volume.
- data can be interpreted by using graphs and line plots.

Application

Students will he able to independently use their learning to:

- use benchmarks to understand the relative sizes of measurement units.
- use models to compare customary units of length.
- use models to compare customary units of weight.
- use models to compare customary units of liquid volume.
- make and interpret line plots with fractional data.
- use models to compare metric units of length.
- compare metric units of mass and liquid volume.
- use models to compare units of time.
- use the strategy *draw a diagram* to solve elapsed time problems.

Skills

Students will be skilled at:

- using benchmarks to understand relative sizes of measurement units, length, weigth, and liquid volume.
- creating and interpreting line plots.
- using models of metric units of measurement.
- drawing diagrams to solve for elapsed time.