

Place Value and Problem Solving with Units of Measure

This module will tie our place value learning to some real-world work with measurement using the metric system. Students will also work on telling time and solving problems relating to elapsed time.

Thinking mathematically is hard but important work!



Key Words to Know

Important Metric Words:

Gram (g)
Kilogram (kg)
Liter (L)
Milliliter (mL)
Centimeter (cm)
Meter (m)

Other math terms:

Analog clock: a clock that is not digital
Capacity: the amount that a container can hold
Compose: change 10 smaller units for 1 of the next unit on the place value chart
Interval: time passed, or a segment on the number line
Plot: locate and label a point on the number line
Point: a specific location on the number line
Round: estimate a number to the nearest 10 or 100 using place value



What Came Before this Module: We deeply explored the meaning of multiplication and division, working from concrete to abstract examples.

What Comes After this Module: We will continue our work on multiplication and division, this time working to build our knowledge of units of 6, 7, 8, and 9, as well as multiples of 10.

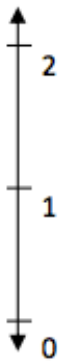
+ How you can help at home:

- Ask your student to help with all kinds of measurement around the house
- Continue to practice telling time, and begin to ask questions about elapsed time, e.g., “How many minutes have passed since we got home from school?”

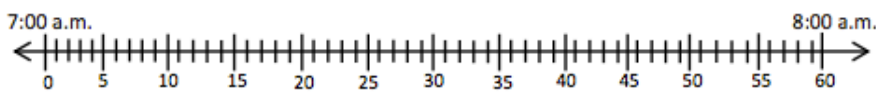
Key Common Core Standards:

- **Use place value understanding and properties of operations to perform multi-digit arithmetic**
 - Round numbers to the nearest 10 or 100
 - Fluently add and subtract within 1000
- **Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects**
 - Tell and write time to the nearest minute and measure time intervals
 - Measure and estimate liquid volume and mass of objects

The clock: a circular number line!



Vertical number line



A time number line

Spotlight on Math
Models:

Number Lines

You will see various
types of number
lines used
throughout *A Story
of Units*.

A Story of Units has several key mathematical “models” that will be used throughout a student’s elementary years.

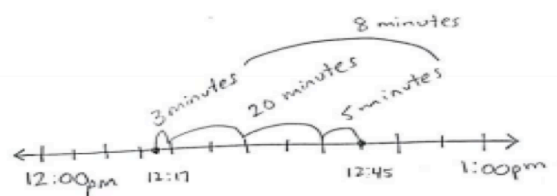
The number line is a powerful, flexible model that students can use in many ways. In this particular module, students make frequent use of both vertical and horizontal number lines, learning to find endpoints and mark exactly halfway in between them, finding elapsed time, and using them on measuring containers.

As students move through the grades, number lines can be used to examine the relationships between numbers in ever more detailed ways, including decimals, fractions, and eventually positive and negative numbers. See how many number lines you and your student can spot around you at home!

Sample Problem from Module 2:
(Example taken from Lesson 13, Module 2)

Here is a sample elapsed time problem that can be solved with a number line:

The school ballet recital begins at 12:17 p.m. and ends at 12:45 p.m. How many minutes long is the ballet recital?



$20 + 8 = 28$ minutes.
The ballet recital took 28 minutes.