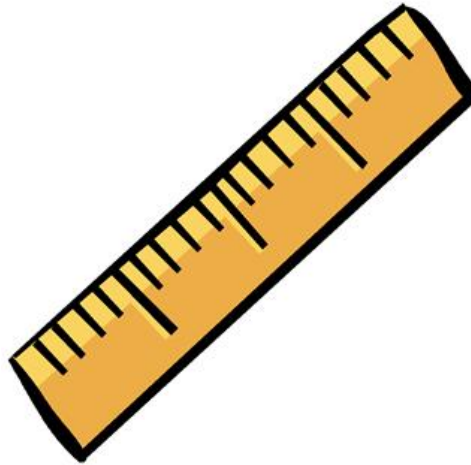


### Addition and Subtraction of Length Units

In this module, we will be exploring the ruler, estimating and measuring lengths using various tools and units, and finally, relating addition and subtraction to length.



### Key Words to Know

**Endpoint:** Where something ends, where measurement begins

**Hash mark:** The marks on a ruler or other measurement tool

**Number Line:** A line marked at evenly spaced intervals

**Estimate:** An approximation of the value of a quantity or number

**Tape Diagram:** See back of this sheet!

### Common Words:

Length  
Combine  
Difference  
Meter  
Height  
Compare  
Centimeter



**What Came Before this Module:** We practiced making sums and differences to the number 20

**What Comes After this Module:** We will begin work with the base-10 place value system

### + How you can help at home:

- Ask questions that encourage your student to estimate lengths of household items
- Continue to review adding and subtracting up to 20
- Practice measuring lengths longer than a ruler by marking and measuring from a mark

## Key Common Core Standards:

- **Relate addition and subtraction to length**

### Examples:

- Line A is 4 cm long, and Line B is 7 cm long. Together, Lines A and B measure \_\_\_\_\_ cm.
- In the example above, how much shorter is Line A than Line B?

- **Measure and estimate lengths in standard and non-standard units**

### Examples:

- How many centimeter cubes long is my pencil?
- How many Lego-pieces long is this bracelet?



Spotlight on Math Models:

## Tape Diagram

You will often see this mathematical representation in *A Story of Units*.

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

The tape diagram is a powerful model that students can use to solve various kinds of problems. In second grade, you will often see this model as an aid to addition and subtraction problems. Tape diagrams are also called “bar models” and consist of a simple bar drawing that students make and adjust to fit a word problem. They then use the drawing to discuss and solve the problem.

As students move through the grades, tape diagrams provide an essential bridge to algebra. Below is a sample word problem from Module 2 solved using a tape diagram to show the parts of the problem.

Sample Problem from Module 2:  
(Example taken from Module 2, Lesson 7)

Natalia, Chloe, and Lucas are making clay snakes. Natalia’s snake is 16 centimeters. Chloe’s snake is 5 centimeters shorter than Natalia’s. How long is Chloe’s snake?

Lucas’s snake is 3 centimeters longer than Chloe’s snake. Who has the longest snake: Natalia, Lucas, or Chloe?

