

DUVAL Math

Parent Tips

Addition and Subtraction of Length Units

In Module 2, students will be exploring the ruler, estimating and measuring lengths using various tools and units and finally, relating addition and subtraction to length. This module focuses on metric units in order to support place

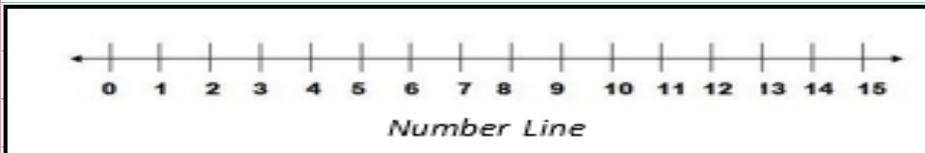
Second Grade,
Module 2

Words to Know

Endpoint: The point where something begins or ends.

Hash Mark: The marks on a ruler or other measurement tool

Number Line: A line marked at evenly spaced intervals.



Special points of interest:

- ✓ Addition and Subtraction of Length Units
- ✓ Words to Know
- ✓ Measurement
- ✓ Tape Diagram
- ✓ Help at home
- ✓ Florida Standards

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

In lesson 4, students begin using centimeter rulers, meter sticks and meter tapes to measure various objects. Through the practice of measuring various items and learning mental benchmarks for measurement, students develop estimation skills in Lesson 5.

Example:

First estimate the length of the line in centimeters using mental benchmarks. Then measure the line with a cm ruler to find the actual length.

A. Estimate: _____ cm

B. Actual length: _____ cm



Questions?

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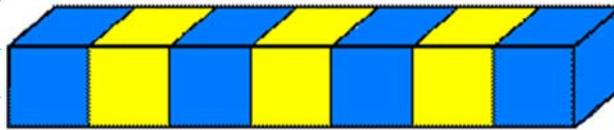
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Measurement

Students will measure using first physical centimeter units, understanding in order to get accurate measurements, there must be not any gaps or overlaps between consecutive length units.

They will use the mark and advance technique. Students use a centimeter cube placed at the start point and mark the end point, and continue with no overlaps. This helps students create a mental benchmark for the centimeter. It also helps them realize that the distance between 0 and 1 on the ruler indicates the amount of space already covered. Hence, 0, not 1, marks the beginning of the total length. Topic A ends with students using their unit rules to measure lengths, thereby connecting measurements with a ruler.



Centimeter Ruler



- **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?

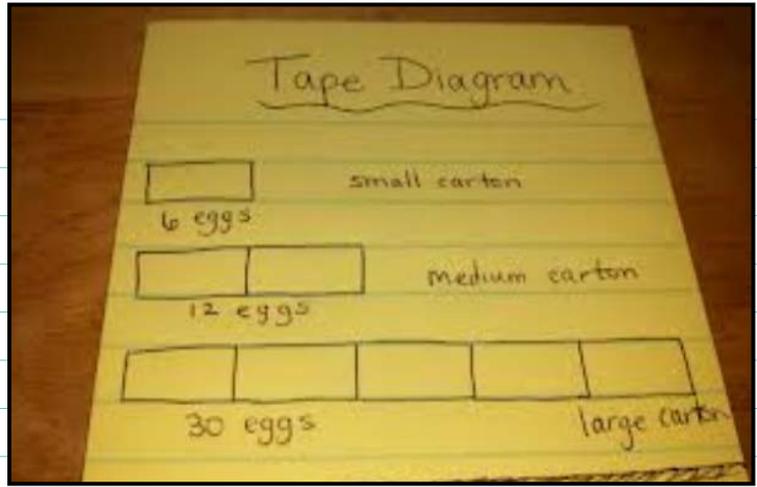
-How many Lego-pieces long is this bracelet?

Common Error:

When using rulers, young students often begin measuring at the 1. **The start point needs to be the 0.**

Tape Diagram

The tape diagram is a powerful model that students can use to solve various kinds of problems. In the second grade, students 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 student 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.



How can you help at home?

- Ask questions that encourage your child to estimate lengths of household items.
- Continue to review adding and subtracting up to 20.
- Practice measuring lengths longer than a ruler by marking from a mark.
- Estimate the length of various objects around the house, such as a table, a book, a toothbrush, etc. Measure the same objects using a ruler with inches and centimeters to compare the estimate to the actual length.
- Measure two different book lengths using centimeters. Compare the two lengths and determine how much longer one book is than the other.

Mathematics Florida Standards

2.MD.1.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

2.MD.1.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

2.MD.1.3 Estimate lengths using units of inches, feet, centimeters, and meters.

2.MD.1.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

2.MD.2.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

2.MD.2.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within

Mathematical Practices Addressed in this Module:

M.P.2 Reason abstractly and quantitatively. Students reason quantitatively when the measure and compare lengths. They reason quantitatively when they use estimation strategies such as benchmarks and metal rulers and when they relate the number line diagrams to measurement models.

M.P.3 Construct viable arguments and critique the reasoning of others. Students reason to solve word problems involving length measurement using tape diagrams and analyze the reasonableness of the work of their peers.

M.P.5 Use appropriate tools strategically Students consider the object being measured and choose the appropriate measurement tool. They use the tape diagram as a tool to solve word problems.

M.P.6 Attend to precision. Students accurately measure by laying physical units end-to-end with no gaps and by using a measurement tool. They correctly align the zero-point on a ruler as the beginning of the total length. They attend to precision when they verbally and in writing specify the length unit, when they use a ruler to measure or draw a straight line of a given length, and when they verify estimates by measuring.

Common Core Eight Standards for Mathematical Practice		
M.P. 1	KEEP TRYING	Make sense of problems and persevere in solving them.
M.P. 2	THINK ABOUT MATH	Reason abstractly and quantitatively.
M.P. 3	TALK ABOUT MATH	Construct viable arguments and critique the reasoning of others.
M.P. 4	MODEL MATH	Model with mathematics.
M.P. 5	USE MATH TOOLS	Use appropriate tools strategically.
M.P. 6	CHECK YOUR WORK	Attend to precision.
M.P. 7	LOOK FOR PATTERNS	Look for and make use of structure.
M.P. 8	LOOK FOR SHORTCUTS	Look for and express regularity in repeated reasoning.

Want to help with homework?

A great resource can be found following the link below:

http://www.oakdale.k12.ca.us/ENY_Hmwk_Intro_math

www.oakdale.k12.ca.us/ENY_Hmwk_Intro_math

OJUSD

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Math Homework Help

Engage New York (ENY) Homework provides additional practice for math that is learned in class. This site is intended to help guide students/parents through assigned homework. You will see a sample of what was done in class and how it was completed correctly. Below is a *sample* of the top of the homework page. It is for **Grade 3, Module 1, Lesson 1**.

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 1 Homework **3•1**
1 Module

Begin by clicking on your student's **GRADE**, next select the **MODULE**, and finally select the **LESSON**.

▶ PK ▶ K ▶ 1st ▶ 2nd ▶ 3rd
▶ 4th ▶ 5th ▶ 6th ▶ 7th ▶ 8th