

Homework Help for Math Out of the Box

Developing Measurement Benchmarks: Scales and Balances

Information about homework assignments is provided to help parents and other homework helpers with the mathematics ideas that are being developed. The homework help includes definitions of key vocabulary, questions to ask that will help students connect to the classroom investigations, problem solving examples, and other helpful explanations.

Homework 3A1 follows Lesson 2

The U.S. customary units are a system of weights and measures used in the United States that are based on an earlier system developed in England. The basic units of length are the inch, foot, yard, and mile.

The first metric system was developed in France. This system was developed to relate to the number system of tens. Today, the metric system is the International System of Units, and its basic unit of length is the meter. The government agency that sets the standards for measurement systems in the United States is the National Institute of Standards and Technology (NIST). More information about units of measurement can be found at the NIST website.

Third grade students should have many opportunities to estimate and measure lengths of objects and distances in both systems.

Homework 3A2 follows Lesson 6

Perimeter is the distance around a figure. Units of length, including both customary and metric, should be used to measure around figures and areas. Measurements of perimeters can also be made with steps, lengths of string, and other nonstandard units.

Homework 3B1 follows Lesson 11

Area is the measurement of a surface. Measurements of area are units of length squared. For example, a rectangular table might have a surface of 18 square feet. Units of length are also used to measure volume. With volume, the units are cubed. A box might have a volume of 50 cubic inches.

As area and volume are explored, a foundation is laid for the development of formulas for area and volume in later grades.



Homework 3C1 follows Lesson 15

There are many temperature scales, with the Fahrenheit and Celsius systems the most commonly used in the United States. Students should be able to connect benchmark temperatures to everyday life.

Benchmark Temperature	Celsius Scale	Fahrenheit Scale
Water Freezes	0° C	32° F
Comfortable Indoor Temperature	20° C	68° F
Normal Body Temperature	37° C	98.6° F
Hot Day	40° C	100° F

Homework 3D1 follows Lesson 18

Liters and milliliters are metric units of capacity. The U.S. Customary System has both a dry and a liquid set of capacity units. If the units need to be distinguished, the words “liquid” or “fluid” are used with the unit.

The terms mass and weight are used interchangeably in everyday life. Mass is a measure of the amount of matter in an object, and weight is the measure of the force exerted on the object by gravity. On the earth, the mass and weight of an object are about the same. Ounces, pounds, and tons are customary units and grams and kilograms are metric units.

