

# Measure On



Learn about the different ways we measure things around us with this kit. Make fun, colorful designs and patterns using ratios and fractions.



## INVENTORY OF TRUNK

### Measure On

IN	OUT	
		<u>Activity Binder</u>
<input type="checkbox"/>	<input type="checkbox"/>	Librarian Instructions
<input type="checkbox"/>	<input type="checkbox"/>	Inventory List
<input type="checkbox"/>	<input type="checkbox"/>	Booklist/Introduction
<input type="checkbox"/>	<input type="checkbox"/>	In an Inch
<input type="checkbox"/>	<input type="checkbox"/>	Inch Collages
<input type="checkbox"/>	<input type="checkbox"/>	A Teaspoon, A Tablespoon, A Cup
<input type="checkbox"/>	<input type="checkbox"/>	Designs, Patterns and Pictures with Cuisenaire Rods
<input type="checkbox"/>	<input type="checkbox"/>	Graph paper (can be copied)
<input type="checkbox"/>	<input type="checkbox"/>	Consumable and Restocking List
<input type="checkbox"/>	<input type="checkbox"/>	Measure On Supplement
<input type="checkbox"/>	<input type="checkbox"/>	<i>History of Length Measurement</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>Origins of Measurements</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>Famous Math Minds</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>Standard Measurements in Sports</i>
<input type="checkbox"/>	<input type="checkbox"/>	Cooking Conversion Chart
<input type="checkbox"/>	<input type="checkbox"/>	Math Conversion Chart- Lengths
<input type="checkbox"/>	<input type="checkbox"/>	Math Conversion Chart- Areas
<input type="checkbox"/>	<input type="checkbox"/>	Math Conversion Chart- Volumes
<input type="checkbox"/>	<input type="checkbox"/>	Math Conversion Chart- Weight
<input type="checkbox"/>	<input type="checkbox"/>	Math Conversion Chart- Liquid Volume
<input type="checkbox"/>	<input type="checkbox"/>	Parent surveys
<input type="checkbox"/>	<input type="checkbox"/>	4 laminated activity sheets
		<u>Books</u>
<input type="checkbox"/>	<input type="checkbox"/>	<i>A Chair for My Mother</i> by Vera B. Williams
<input type="checkbox"/>	<input type="checkbox"/>	<i>Counting On Fall</i> by Lizann Flatt
<input type="checkbox"/>	<input type="checkbox"/>	<i>How Big is a Foot?</i> by Rolf Myller
<input type="checkbox"/>	<input type="checkbox"/>	<i>Inch by Inch</i> by Leo Lionni
<input type="checkbox"/>	<input type="checkbox"/>	<i>Just a Little Bit</i> by Ann Tompert
<input type="checkbox"/>	<input type="checkbox"/>	<i>Measuring Penny</i> by Loreen Leedy
<input type="checkbox"/>	<input type="checkbox"/>	<i>Mighty Maddie</i> by Stuart J. Murphy
<input type="checkbox"/>	<input type="checkbox"/>	<i>Millions to Measure</i> by David M. Schwartz

- ☐ ☐ *Mr. Archimedes' Bath* by Pamela Allen
- ☐ ☐ *Sizing Up Winter* by Lizann Flatt

In an Inch

- ☐ ☐ 11 plastic rulers
- ☐ ☐ 5 measuring tapes
- ☐ ☐ Foam blocks
- ☐ ☐ Key rings
- ☐ ☐ Plastic discs
- ☐ ☐ Bottle caps

Inch Collages

- ☐ ☐ Variety of materials or objects that are one-inch lengths

A Teaspoon, A Tablespoon, A Cup

- ☐ ☐ Dish tub
- ☐ ☐ Set of measuring cups (1/8 cup – 2 cups)
- ☐ ☐ Set of measuring spoons (1/32 tsp – 1 tbsp)
- ☐ ☐ 2 sets of measuring beakers (1/4 tsp – 4 tbsp)
- ☐ ☐ 2 sets of measuring beakers (1/4 tsp – 1 cup)

Designs, Patterns and Pictures with Cuisenaire Rods

- ☐ ☐ 2 containers of Cuisenaire Rods
- ☐ ☐ Coloring pencils

To Be Provided by Borrowing Library\*

- ☐ ☐ Variety of materials or objects that are one-inch lengths (e.g. colorful paper, ribbon, craft sticks, straws, packing peanuts, pipe cleaners, etc.)
- ☐ ☐ Plastic cups
- ☐ ☐ Glue bottles and glue sticks
- ☐ ☐ White paper

\* Some of these materials are provided in the kit but may be recommended to purchase as they will not be restocked by NMSL in the future.

Checked by \_\_\_\_\_ Date \_\_\_\_\_

Checked by \_\_\_\_\_ Date \_\_\_\_\_

## In an Inch

### Beforehand:

Check to see that there are enough objects of one-inch lengths.

### Materials:

- Variety of materials or objects that are one-inch lengths (e.g. colorful plastic tiles, bottle caps, buttons, straws, foam cubes, key rings, etc.)
- ~2-cup size containers for each type of one-inch objects
- Rulers
- Measuring tapes
- Objects to Measure (Optional) – e.g. books, pencils, blocks, etc. – to be gathered from library

### Preparation:

Set on the table 4 to 6 small cups, each containing a handful of different one-inch objects. Choose a variety of materials such as bottle caps, buttons, foam cubes, colorful plastic tiles, etc. Set out a couple rulers and measuring tapes. Set up prompt card.

### Questions to Extend Discoveries:

Invite participants to use the one-inch pieces of materials to measure their hand, their arm, the table, the chair, stuffed animal, a book, etc. by laying the pieces in a row. Listen to their discoveries and conversation and extend them by asking the following questions:

- “How many inch pieces does it take to cross the table?”
- “Try measuring the table in different ways. What do you find out?”
- “How many inch pieces does it take to be the same length as your hand?”
- “How many inch pieces does it take to be the same length as your foot?”
- “What other things can you find in the room to measure?”

## Inch Collages

### Beforehand:

Check to make sure that there are enough of a variety of materials cut to one-inch lengths. Materials include colorful paper, ribbon, craft sticks, straws, etc. Check that there is enough copy paper and that glue sticks are not dried out. Create an example of an inch picture.

### Materials:

- Variety of materials or objects that are one-inch lengths (e.g. colorful paper, ribbon, craft sticks, straws, packing peanuts, pipe cleaners, etc.)
- ~2-cup size containers for each type of one-inch object
- Plastic cups
- 8 1/2" x 11" size copy paper
- Glue Sticks
- School Glue

### Preparation:

Set out 4-6 plastic cups, each containing a handful of different one-inch materials. Place a stack of 15-20 sheets of copy paper, a couple glue sticks, and bottles of glue on the table. Set out the pre-made example and prompt card.

### Questions to Extend Discoveries:

Invite participants to use the one-inch pieces to create a picture, design, or pattern on a sheet of copy paper. Participants can glue down their objects and take their pictures home with them. Ask the following question to encourage discovery:

“Tell me about your picture.”

# A Teaspoon, A Tablespoon, A Cup

## Beforehand:

Check that the measuring tools are intact. Fill dish tub one third to half full of water. Gather paper towels, rags or some other means of mopping up water.

## Materials:

- Variety of measuring tools to include: measuring spoons, measuring cups, liquid measuring cups, measuring beakers
- Dish tub
- Water – to gather
- Paper towels or rags – to gather

## Preparation:

Fill dish tub(s) one third to half full of water. Set out a variety of measuring tools. Set aside paper towels/rags or some way to wipe up water. Set up the prompt card.

## Questions to Extend Discoveries:

Invite participants to see what they can discover about the measuring tools on the table. Listen to their discoveries and extend them by asking the following questions:

“What do you notice about the amount of water each tool measures?”

“Which tool would you use to measure a small amount?”

“Which tool would you use to measure a larger amount?”

“If you had to fill a bathtub, which tool would you use and why?”

“Try combining tools to fill a container. What do you find out?”

“Try finding out how many of one size tool it takes to fill another size tool. For example, how many  $\frac{1}{4}$  cups does it take to fill a 1 cup measure?”

# Designs, Patterns and Pictures with Cuisenaire® Rods

## Beforehand:

Check to make sure Cuisenaire® Rods have not been misplaced. Make sure pencils are sharpened. Make copies of centimeter graph paper if needed. Create an example.

## Materials:

- Cuisenaire® Rods
- 1 cm graph paper
- Colored Pencils

## Preparation:

Place on the table the container of Cuisenaire® Rods. Set 10 to 15 sheets of graph paper and containers of colored pencils and crayons on the table. Set up prompt.

## Questions to Extend Discoveries:

Invite participants to see what they can discover about measuring, ratios, fractions, and proportions by making designs, patterns, and comparing lengths of the rods.

“Try lining the rods up from shortest to longest. What do you notice?”

“How many different ways can you make the same length as the orange rod? ...the blue rod?”

“Try making patterns with the rods. What do you notice?”

“Try making a picture with the rods. What do you notice?”

After participants have spent time making discoveries with the Cuisenaire® Rods, encourage them to translate their design or picture to the graph paper.

“On graph paper, draw the pattern you made with the rods.”

“On graph paper, draw the picture you made with the rods.”