

# Ames Public Library @HOME Activities

## Units of Measurement

How tall are you? How high can you jump? How fast can you run? The answers to these questions all involve units of measurements. We use measurements in almost every activity we do, from cooking to going on a road trip. To learn more see a related video on the Library's YouTube Channel at <http://bit.ly/APLvideos>.

### Books and Media:

| Title  | Author / Performer | Call Number     |
|--|--------------------|-----------------|
| <i>Look, I'm a Mathematician</i>                                 | (DK)               | J 510 LOO       |
| <i>Illustrated Elementary Math Dictionary</i>                    | Rogers, Kirsteen   | J 510 SEN       |
| <i>Visual Guide to Math: A First Reference Book for Children</i> | Wilding, Karen     | J 510 WIL       |
| <i>Measuring Puppies and Kittens</i>                             | Murphy, Patricia   | J 516.15 MUR    |
| <i>How to Read Calendars and Clocks</i>                          | Conley, Kate       | J 529 CON       |
| <i>Math It! Measure It!</i>                                      | Higgins, Nadia     | J 530 HIG       |
| <i>The Metric System</i>   | Adler, David       | J 530.8 ADL     |
| <i>Measure It! Mass and Weight</i>                               | Somervill, Barbara | J 530.8 SOM     |
| <i>The Know-nonsense Guide to Measurements</i>                   | Fiedler, Heidi     | J 530.81 FIE    |
| <i>Measuring Temperature</i>                                     | Bailer, Darice     | J 536 BAI       |
| <i>How Big is Big? How Far is Far?</i>                           | Veken, Jan van der | J 551.6 GRE     |
| <i>Bill Nye the Science Guy: Time</i>                            | Nye, Bill          | J 529 (DVD) NYE |

### Websites:

| URL   | Notes  |
|---|--|
| <a href="https://www.nist.gov/kids">https://www.nist.gov/kids</a> | NIST stands for National Institute of Standards and Technology, if you have a question about measurements or standards you can send them an email for answers. |

## Take Away Kit: Let's Measure It!

### Bag Contents:

- 1 – Wood ruler
- 1 – Tape measure

Your kit contains a wooden ruler and a tape measure that you can use to measure the length of different items.

Did you know in the ancient world, parts of the body would often be used as a unit of measurement? For instance in ancient Egypt they used the following units:

One digit = the width of a finger

One palm = the width of four fingers

One span = the width of an open hand, from the tip of the thumb to the tip of the pinky.

One cubit = the length from the elbow to the tip of the middle finger.

Let's do a little experiment to find out how well this system works. For this experiment you will need the help of a partner.

*You will need:*

A partner

A tape measure (you can use the one provided in the kit)

Paper and pencil to record the measurements

Use the tape measure and measure the width of one of your fingers. That's 1 digit according to the table above. Record your measurements in inches or centimeters. Repeat this for the palm, span and cubit. You can use the table above for reference.

After you have recorded your measurements, help your partner take their measurements, use the same units of measurement (inches or centimeters) for both of you.

Now compare the two sets of measurements, mostly likely the measurements are not identical. Some may be the same, or all could be different! The reason for this is because we all have different sized hands! This is also one reason why the ancient Egyptian system of measurements did not last. Today when we use standard units of measurements, an inch is always the same length no matter what ruler you use.

*Source: Math It! Measure It! by Nadia Higgins. J 530.8 HIG*

## Vocabulary

Capacity – Is a measure of how much a container can hold. Capacity is measured in liters and gallons.

Container – An object that can hold something.

Divide – To separate into pieces or amounts.

Estimate – To make a smart guess.

Flexible – Capable of bending or being bent.

Height – A measure of how high or tall something is.

Precise – Exact; not a guess.

Temperature – How hot or cold something is.

Thermometer – A device/tool for measuring temperature.

The Metric System – This system of measurement is based on the meter, liter, and gram as units of length (distance), capacity (volume), and weight (mass) respectively.

Tape Measure – A long, flexible measuring tool. A tape measure often comes rolled up.

Units – A particular amount of length, time, or the measurement that is used as a standard for counting or measuring.

U.S. Customary Units – The units of measurements used in the United States. It is based on inch, cup, and pound as units of length (distance), capacity (volume), and weight (mass) respectively.

Width – A measure of how wide something is, from side to side. Width is always shorter than length.

*Source: Math It! Measure It! by Nadia Higgins. J 530.8 HIG; Fast Fact Measurement by Blanche Roesser. J 530.8 ROE*