

Listed below are questions to help teachers during observations and assessments.

Getting Started

- * What is it that you don't understand? (Have your child be specific.)
- * What do you need to find out?
- * What do you need to know?
- * What terms do you understand or not understand?

While Working

- * How can you organize the information?
- * Do you see any patterns or relationships that will help solve this?
- * What would happen if...?

Reflecting about the Solution

- * How do you know your answer is reasonable?
- * Has the question been answered?
- * Can you explain it another way?

Web Resources

<http://www.funbrain.com/measure/index.html>

<http://www.rickyspears.com/rulergame/>

<http://www.quia.com/mc/66516.html>

<http://www.shodor.org/interactivate/activities/permarea/index.html>

Mathematics in Investigations

Investigation 1: Measures of Length and Distance

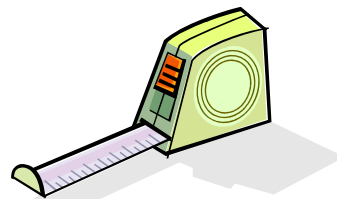
- * Using U.S. standard and metric tools for measuring length, weight, volume, and time.
- * Using benchmarks to estimate measures and deciding when to use estimation.
- * Recognize and explain possible sources of error.
- * Comparing Lengths expressed in different ways
- * Keeping track and calculating measures.

Investigation 2: Measures of Weight and Liquid Volume

- * Compare sizes of standard and metric measures of weight and liquid quantity.
- * Develop a sense of weights
- * Use a balance scale to measure weight.
- * Develop a sense of volumes
- * Develop meaning for volume and density.

Investigation 3: It's About Time

- * Develop vocabulary for units of time.
- * Timing in minutes and seconds
- * Collecting, displaying, and analyzing data
- * Using measurement conversions in the problem solving process.
- * Keeping track of computations in multistep problem.



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Investigations in Number, Data, and Space

Measurement Benchmarks Grade 5

Estimating and Measuring

Unit Goals:

- Students work with metric and U.S. Standard measures of length, distance, weight, and volume and with measures of time.
- Students find and use benchmarks
- Students estimate measurements, and they take actual measurements with meter sticks, balance scales, liter measures, and other measuring tools
- Students compare their estimates with actual measurements; they compare the sizes of measurement units in different systems, they calculate with measurements and they investigate ways that people use measurement in their everyday lives.

Proposed Time Frame:

4-5 weeks

Vocabulary

Volume- amount of space occupied by an object.

Estimate- to make an approximate, or rough calculation, often based on rounding.

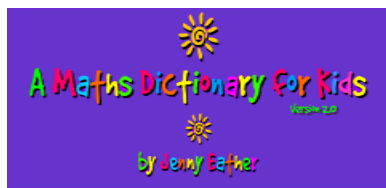
Standard Measurement- measurement units of inches, feet, yards, pounds, cups and used primarily in the United States.

Metric System- decimal system of measurement that uses multiples of 10.

Density- the amount per unit size and the spatial property of being crowded together.

Glossary

<http://www.amathsdictionaryforkids.com/>



At Home:

- * Talk about mathematics class.
- * Have your child find the correct measurement units when working on a project.
- * Make sure the measuring tool is lined up exactly at zero
- * Do not mix metric and standard measurements.
- * Help child recognize when to estimate, and when exact measurement is needed.
- * Encourage your child to schedule a regular time for homework and provide a comfortable place for their study, free from distractions.
- * Monitor your child's homework on a regular basis by looking at one problem or asking your child to briefly describe the focus of the homework.
- * When your child asks for help, work with them instead of doing the problem for them.

At School:

- * Attend Open House, Back to School Night, and after school events.
- * Join the parent-teacher organization

Math Game

Guess My Unit

Materials:

- ◇ Create a set of cards with a unit of measurement on each.
- ◇ Provide scraps of paper

Procedure:

- ◇ Choose a unit of measure
- ◇ Give only one clue
- ◇ Students can ask 5 "yes" or "no" questions to eliminate other possibilities.
- ◇ Students can use scrap paper to make notes or work out their thinking.
- ◇ Students can use the cards as a reference
- ◇ Don't share your unit until the end

Some Sample Cards:

| | | |
|--------|------|--------|
| inches | feet | ounces |
| meter | cups | tons |

Tierney, C. Investigations in Number, Data, and Space: Measurement Benchmarks. Dale Seymour, 1998.