

## **Baking and Cooking with Your Child--Measurement**

### **What the Research Says**

- Measurement is an important content area identified by the NCTM (National Council on Teaching Mathematics).
- Measurement addresses the mathematical concepts of length (longer than, shorter than), area (covers more, covers less), capacity (holds more, holds less), and weight (heavier, lighter).
- Young children encounter measurement in many contexts as they explore and make sense of their world. For example, when children are thirsty and notice that different size glasses can hold different amounts of juice (capacity).
- It is expected that young children's understandings of measurement (length, area, capacity, weight) is different from those of older children and adults. These understandings will improve as they have many experiences and conversations about measurement over time.
- During the PK years, young children recognize that objects have measurable properties and can understand what is meant by: how long, how heavy, and how much.
- Comparing lengths, capacities, and weights through play and daily routines start children on the path to understanding and using measurement.

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### **Advice for Families**

- Use daily routines to model the importance of measurement in our lives (cooking, selecting what to wear, playing a game, etc).
- During daily routines, draw attention to measurement attributes. For example: "My shoe is *longer* than your shoe, but baby Jason's shoe is *shorter* than yours."
- Use "measurement" vocabulary to expose your child to the many ways we measure in our daily lives (feet, quarts, miles, inches, hours, pounds, etc).
- Engage your child in conversation about measurement, asking questions like: "How big," "How tall," "How much," "How far," "How old," etc.
- Create an atmosphere that promotes attitudes of curiosity, risk taking, and experimenting with problems and solutions (For example, let your child help decide which bowl to use when making pancakes).
- Read books that focus on measurement like *Goldilocks and the Three Bears* ("That porridge is too hot...too cold...just right").
- Use time related vocabulary (yesterday, 10 minutes, three o'clock, etc.) in your conversations, but realize that concepts of time are very difficult for young children and will be fully understood later when they enter school. Just hearing the words prepares them for future understanding.

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### Activities for Families

**Learning about mathematics in the early years is about thinking, not memorizing. Measurement activities in the early years should focus on helping children identify and compare differences of length, weight, capacity, time, and temperature. Measurement experiences come up often in everyday experiences (preparing food, eating, playing, dressing, bathing, etc). Quality conversations about measurement with your child during these daily events can help lay the foundation for further mathematical learning.**

- Use ribbon or yarn to measure your arm or foot and your child's arm or foot. Ribbon and yarn are *non-standard* tools of measurement. Your child will learn about *standard* tools of measurement (rulers, tape measurers, etc) when they enter school. Talk about:
  - Which one is longer or shorter?
  - How much yarn or ribbon do you think we will need to go around our wrists?
  - Do you think your leg is longer or shorter than your arm? How will we find out?

You can measure all kinds of things around the house. Other *non-standard* tools you could use would be equal sized blocks, Popsicle sticks, pipe cleaners, or same-sized pieces of paper .

- At lunch, bring out two different size glasses. Explore the following:
  - Which of these two glasses hold more water? Why do you think so?
  - How can we find out which glass holds more?
  - If I bring out another sized glass, can we find out which holds the most water? The least water?
- When preparing a meal, spend time speculating about the weight of each.
  - What's heavier; a bag of spaghetti noodles or a jar of sauce? How do you know?
  - Can you find something that is heavier? Lighter?

