


**Little Discoverers:**  
 BIG FUN with science, math, and more!


# Measurement

**KEY VOCABULARY**

**height:** the distance from bottom to top, or how tall something is

**length:** the distance from one end to another, or how long something is

**measure:** to find the size, dimensions, or amount of something

**observing:** using our senses to gather information

**size:** how big or small something is

**temperature:** how hot or cold something is

**time:** the passage of seconds, minutes, hours, days, weeks, months, and years

**weight:** how heavy or light something is

**width:** the distance from one side to the other, or how wide something is

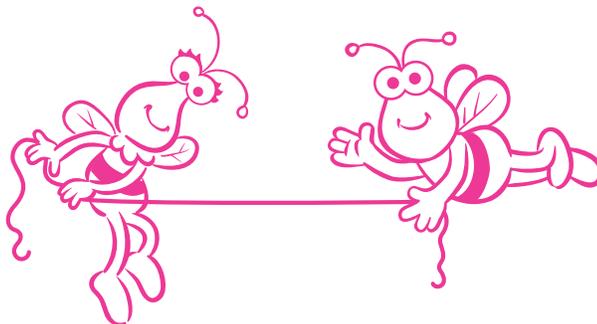
**WELCOME, EDUCATOR!**

You and the children you work with are about to embark on an engaging multimedia experience exploring concepts in Science, Technology, Engineering, and Math (STEM). **Sesame Street Little Discoverers: Big Fun with Science, Math, and More** is a resource to help you discover exciting new ways to build on children's natural fascination with STEM concepts.

**In this topic, children will investigate how measurement can be used to describe, compare, and sort materials.**

**HELP CHILDREN TALK ABOUT MEASUREMENT:**

- » Measurement helps us determine size, distance, or quantity.
- » Some common measurements that children use include height, length, width, size, temperature, time, and weight.
- » Standard units of measurement, such as inches, hours, or degrees, allow us to compare and share our measurements with others.
- » Nonstandard units of measurement, such as using blocks, hands, or paper towel tubes to measure things, allow children to develop a deeper understanding of the process of creating a measurement system.



For more fun ideas, videos, and games, check out [sesamestreet.org/STEM](http://sesamestreet.org/STEM) on your computer or mobile device.



**MEASUREMENT**

# Measuring Bounces

**GOAL**

Develop measuring skills and understand how we measure to collect data and compare results.

**QUESTION**

Which ball will bounce highest?

**TIME**

20–30 minutes

**MATERIALS**

- » At least 2 different balls (many kinds of balls will work – a tennis ball, a golf ball, a soccer ball, a playground ball)
- » masking tape
- » a nonstandard unit of measurement such as blocks or paper towel tubes
- » sticky notes, for drawing balls
- » View and Do Chart
- » crayons or markers

**LET’S WATCH: “MURRAY EXPERIMENT: BOUNCY BALLS”**

In the video, Murray and his friends do an experiment to see how high different kinds of balls bounce. They drop each ball from the same height and measure its bounce on a board that has been marked with different colors.

**LET’S TALK ABOUT IT**

After you watch the video together, ask some questions to prompt discussion.

- » “What did they want to find out?”
- » “How did they test the balls?”
- » “Which ball was the best bouncer?”

**LET’S DO AN ACTIVITY:**

1. Put a line of masking tape at least three feet tall on a wall that all children can see, starting at the floor and going straight up. Draw a line at the three-foot mark; this is the starting point. Then draw each ball on a sticky note.
2. Pass around the balls, and have children observe and describe each one: Are they light or heavy? Big or small?
3. Say, “Which ball do you think will bounce the highest? Why?” Prompt children to make a hypothesis – or thoughtful guess for why something happens.
4. Have a child hold a ball next to the line on the tape, and drop it straight down.
5. Look carefully to see how high it bounces and mark the data by putting the appropriate sticky note on the masking tape.
6. Have children switch roles and test the other ball(s).
7. Use a nonstandard unit of measurement to measure how high each ball bounced. Make sure to always start at the floor and measure up.
8. Discuss together as a group, “Which ball bounced higher? Did the data match your hypotheses? Why do you think so?”





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MEASUREMENT

# Measuring Bounces



After all the bounces are recorded on the tape line, have children measure the heights of the balls' bounces using one type of informal measurement. Which ball was the best bouncer?

 Type of Measurement	Ball:	Ball:	Ball:


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**MEASUREMENT**

# Measuring Liquids


**GOAL**

Practice measuring liquid.

**QUESTION**

How many small cups of water fit into larger containers?

**TIME**

20–30 minutes

**MATERIALS**

For each group of two to four children:

- » 1 large plastic storage container or water table
- » 2 plastic containers of different sizes
- » 2 measuring cups (1-cup size)
- » Activity Chart (one per child)
- » crayons

For the teacher:

- » sticky notes
- » marker

In this activity, children will compare how much water small and large containers can hold.

**STEPS**

1. Ask, “What happens when you pour water from a small container into a large container?”
2. Allow each group a few minutes to pour water back and forth between containers.
3. Measure a cup of water and have children explore what that looks like in different containers. Say, “One cup of water looks different in a smaller container than in a larger container, even though it’s the same amount of water! The water level is higher in a narrow container, and lower in a wider container. But it’s still the same amount of water.”
4. Have children count how many cups it takes to fill one of their containers. Write the number of cups on a sticky note and stick it on the container.
5. Have children predict whether the second container will need more or fewer cups of water to fill it.
6. Have children measure the number of cups it takes to fill the second container. Write the number on a sticky note and stick it on the container.
7. Have the children record their information on the Activity Chart.
8. Encourage children to share what they notice about each container’s height and width, and how the shape relates to the amount of water it can hold.

**TUBE EXPLORATION**

Have children use paper towel tubes to measure objects. Ask, “How many tubes tall are you?” “How many tubes wide is the door?”

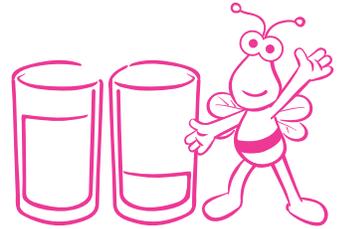


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MEASUREMENT

# Measuring Liquids



Have children draw the first container they will fill. After they fill it, have them write the number of cups of water it took to fill the container. Repeat this with the second container.



Container 1

Container 2

\_\_\_\_\_ Cups

\_\_\_\_\_ Cups



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# Measurement

**Sesame Street Little Discoverers: Big Fun with Science, Math, and More** is a resource to help you and your child explore STEM.

Remember, it's okay to not know the answers to all of her questions. Model a sense of curiosity by saying something like, "That's a great question! I don't know the answer but let's find out together."



## HELLO, FAMILIES!

Your child is full of curiosity. She is always observing, questioning, testing her thinking, and collecting information. These are important critical-thinking and problem-solving skills that help set her up for success in Science, Technology, Engineering, and Math (STEM).

## HELP YOUR CHILD TALK ABOUT MEASUREMENT

- » Measurement helps us find out the size, distance, or quantity of something.
- » Some common measurements that children use include height, length, width, size, temperature, and weight.
- » Standard units of measurement – such as inches or degrees – allow us to compare and share our measurements with others.
- » Non-standard units of measurement – such as using blocks, hands, or paper towel tubes to measure things – allow us to compare objects.

## TRY THIS AT HOME

**Pick and choose the activities that work best for you and your child.**

**Let's Talk.** Use measurement words as many times as you can this week! Say things like, "Let's measure how tall you are," or "Let's see which of your toys is the heaviest." Give a high-five anytime someone in the family uses measurement words.

**Measure Outside.** Take a walk and bring along non-standard measuring tools, such as a length of ribbon or a paper towel tube, or simply use your shoe or hand. Investigate questions like, "How tall is that bush?" or "How far can you jump?"

**Counting Steps.** Have children count steps to different places in the room. How many steps to the bathroom or the toy bin? Which one is farther?



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**MEASUREMENT**

# Measuring Your Shadow

**TUBE EXPLORATION**

Use paper towel tubes to explore measurement. Have your child use the tube as a way to measure objects. Ask, "How many tubes tall are you?" "How many tubes wide is your front door?"

**WATCH "MEASURE, YEAH, MEASURE"**

In this video, Elmo and his friend sing about how you can measure things when you have the right tools: a ruler, a scale, and even measuring cups and spoons. Take a moment with your child to talk about different kinds of measuring tools.

**ACTIVITY**

Children are fascinated by their shadows. Wait for a sunny day and go outside to measure your shadows!

**MATERIALS**

- » chalk
- » tape measure
- » sunny day
- » Activity Chart
- » crayons

**STEPS**

1. Go outside to a sunny place in your driveway or sidewalk.
2. Talk about your shadows. Are they taller or shorter than you? Are they wider or more narrow than you?
3. Record your child's shadow by tracing it with chalk. Then switch and have your child trace your shadow.
4. Measure the length of each shadow using a tape measure. Use chalk to record the length near the head of the shadow.
5. Report your findings to each other. "What is the length of our shadows?" "What is the length of our actual bodies?" "How do they compare?"
6. If you have extra time, measure your shadows at different times during the day and talk about how the shadows changed. (When the sun is low in the sky our bodies are able to block more light and create very long shadows, but when the sun is high in the sky our shadows are much shorter because we cannot block as much light.)



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MEASUREMENT

# Measuring Your Shadow

Have your child draw the shadows that you measured. As he draws, help him label the drawings with words like taller, longer, and shorter.

Time:



Shadow 1

Shadow 2

