



### Further investigations:

Ask your child, "What tool should I use to measure the length of a semi-truck?" You may want to give choices (inch, foot, yard, centimeter, meter) at first, but later let your child come up with the correct answer. Pose questions about other objects, large and small.

Draw a simple clock to show the time a special activity is happening. Your child can compare the practice clock or drawing to a real clock, knowing it is time when the two clocks match. Practice telling time to the nearest 5 minutes.

Set a timer to go off and ask your child to tell you the time.

Ask your child to make an estimate of the amount of time it will take to do simple everyday activities such as brush teeth or clean a bedroom. Then time the activity.

Help your child make a table of the week's daily high and low temperatures. Highlight the high and low temperatures for the week. Find the difference between the temperatures.

Challenge your child to estimate one minute. Using a timer, you say "start." Your child should say "stop" when he thinks one minute has passed. Write down the number of seconds that passed. Let your child determine how close his estimate was. Change places and compare estimates.

### Terminology:

**Inch:** a customary unit of length;  
12 inches = 1 foot

**Foot:** a customary unit of length;  
1 foot = 12 inches

**Yard:** a customary unit of length equal to three feet

**Centimeter:** a metric unit of length; 1/100 of a meter

**Meter:** the standard unit of length in the metric system

**Estimate:** to make an approximate or rough calculation, often based on rounding

**Temperature:** a measurement of how hot or cold something is; temperature is measured with a thermometer in degrees. Common temperature scales are Celsius (°C) and Fahrenheit (°F).

**Thermometer:** instrument for measuring temperature

**Minute:** unit of time equal to 60 seconds

### Related Files:

[www.ceismc.gatech.edu/csi](http://www.ceismc.gatech.edu/csi)

## Length, Temperature, and Time

Second Grade 3 of 7

### Students will:

- Tell time to the nearest five minutes
- Learn that there are 60 minutes in an hour and 24 hours in a day and understand the relationship between hours and days
- Know the standard units for measuring length (inch, foot, yard, centimeter, meter) and compare the relationship of one unit to another
- Check by measuring to determine if estimates are accurate for length and temperature
- Use appropriate measuring tools
- Use mental math strategies to solve problems with numbers less than 1000
- Understand the value of reasonable estimates

### Classroom Cases:

1. Tape two meter sticks end-to-end to the floor. Mark a starting place with tape. Estimate how far you think you can jump. Record your guess. Standing at the starting line, jump as far as you can. Ask a partner to mark where your toes land. How far did your jump? How close was your estimate?



#### Case Closed - Evidence:

I think I can jump 100 centimeters. I jumped 102 centimeters.

My estimate was off by 2 centimeters.

2. Choose a "pull-back" toy or "penny racer car". Pull back your car and release; how far do you think your toy traveled? Make and record your estimate using centimeters and inches. Measure the distance it went in inches and centimeters. Record your results on a chart.

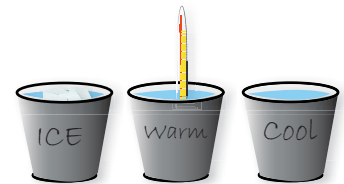
#### Case Closed - Evidence:

Estimates		Measurements	
36 inches	100 centimeters	50 inches	127 centimeters

3. Use three paper cups. Put ice water in one, warm tap water in one, and cool tap water in the last one. Put your finger in the water of each cup. Estimate the temperature of each cup. Measure the temperature with a thermometer. Record your answers on a chart.

#### Case Closed - Evidence:

	Estimate	Temperature
ice water	45 °F	38 °F
warm water	70 °F	72 °F
cool water	50 °F	60 °F



4. How long will it take you to write the numbers in order from 1 to 100? Make an estimate and write it down. Start the timer and begin writing the numbers on the 100's grid. Stop the timer when you are finished. How long did it take you? Were you faster or slower than your estimate? Now try the same activity, but put the numbers in order from largest to smallest.

### Clues:

Students will often confuse the hour and minute hands on an analog clock (non digital), confuse inches and centimeters on a ruler, and forget to place the beginning of the measuring tool at the beginning of the object to be measured.

### Book 'em:

**Inch by Inch** by Leo Lionni

**The Biggest Fish** by Shelia Keenan

**Twelve Snails to One Lizard** by Susan Hightower

**How Big is a Foot?** by Rolf Myller

**Moir's Birthday** by Robert Munsch

**Ten Beads Tall** by Pam Adams