

## MEASURING UP TO STANDARDS

### Performance Standards (7A/7B/7C).B

Estimate length, weight and capacity when compared to standard reference points, and choose appropriate units of measure in various examples:

1. *Mathematical knowledge*: Use appropriate units of measure to estimate and determine length, capacity and weight;
2. *Strategic knowledge*: Choose appropriate units of measurement and apply them correctly to various situations;
3. *Explanation*: Explain completely what was done and why it was done.

### Procedures

1. *In order to measure and compare quantities using appropriate units, instruments, and methods (7A), estimate measurements and determine acceptable levels of accuracy(7B), ) select and use appropriate technology, instruments, and formulas to solve problems, interpret results, and communicate findings(7C)*, students should experience sufficient learning opportunities to develop the following:
  - Identify the type of measure (e.g., weight, height, volume and temperature) for each measurable attribute.
  - Explore and describe perimeter and area of real objects.
  - Measure objects using standard units.
  - Estimate standard measurements of length, weight and capacity.
  - Select and appropriate unit and tool for measurement.
2. This task should be done individually at a center which offers various standard units of measure.
  - Teacher reads the student task sheet as student chooses the appropriate card to answer the question. Student copies the word from the appropriate card on the student task sheet.
  - Length – Students measure a pencil with Unifix cubes then estimate the length of 3 other pencils in Unifix cubes
  - Capacity – Students fill a measuring cup with unifix cubes and then estimate 3 other containers based on this nonstandard measurement
  - Weight – Students weigh a calculator in a balance scale with Unifix cubes then estimate the weight in unifix cubes of 3 other objects
4. Evaluation: *Mathematical knowledge*—the student correctly identifies the units of measurement for length, capacity and weight. *Strategic knowledge*—student used the correct units of measurement to obtain results. *Explanation*—explains why the units must be used in the given situations.

### Examples of Student Work follow

#### Time Requirements

- 15 - 20 minutes and should be done individually

### Resources

- Cards with the following words on them: Ruler, scale, cup, gallon, thermometer, yardstick, inch, foot, mile, ounce, pound, weight, length, and capacity
- Copies of the “Measuring Up to Standards” recording sheet
- Mathematics Rubric

### ASSESSMENT (7A/7B/7C).B

NAME \_\_\_\_\_ DATE \_\_\_\_\_

## MEASURING UP TO STANDARDS

### Student Recording Sheet

**14 points - 1 point for each answer**

Spread the cards out in front of the student and read them aloud.

Teacher: I want you to pick the card that answers my question and write it on your sheet.

1. What tool and unit would you use to measure the length of a pencil?

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2. What tool and unit would you use to measure how heavy an apple is?

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3. What would you use to measure the temperature outside?

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4. What tool and unit would you use to measure how long a hallway is?

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5. What would you use to measure sugar for a recipe?

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6. What would you use to measure water in a bathtub?

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7. What unit would you use to measure the distance from Chicago to Springfield?

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8. What unit would you use to measure how heavy a bowling ball is?

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9. What would you be measuring if you wanted to know how heavy something is?

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10. What would you be measuring if you wanted to know how tall something is?

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11. What would you be measuring if you wanted to know how much something can hold?

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**PART 2**

**LENGTH**

**7 points total – 1 point per box**

**Teacher: Measure pencil #1 with your ruler. Then estimate how many inches long is pencil #2, #3, and #4. Write your estimates in crayon. Measure each pencil with your ruler and record them in pencil.**

<b>PENCIL</b>	<b>ESTIMATE</b>	<b>ACTUAL</b>
<b>#1</b>	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	
<b>#2</b>		
<b>#3</b>		
<b>#4</b>		

**CAPACITY**

**2 points – 1 point per container estimated**

**Teacher: Fill the measuring cup with water. Pour a cup of water in each of the other containers and estimate their capacity in cups.**

**WEIGHT**

**2 points – 1 point per object estimated**

**Teacher: Use the balance scale to find the weight of the calculator in ounces. Find two objects in the room that weigh about the same amount in ounces. Check your estimates.**

\_\_\_\_\_ / 25 points

NAME \_\_\_\_\_

DATE \_\_\_\_\_

### MEASURING UP TO STANDARDS

#### Student Recording Sheet

14 points - 1 point for each answer

Spread the cards out in front of the student and read them aloud.

Teacher: I want you to pick the card that answers my question and write it on your sheet.

1. What tool and unit would you use to measure the length of a pencil?

ruler, inch

2. What tool and unit would you use to measure how heavy an apple is?

pound and scale

3. What would you use to measure the temperature outside?

thermometer

4. What tool and unit would you use to measure how long a hallway is?

yardstick, foot

5. What would you use to measure sugar for a recipe?

cup

6. What would you use to measure water in a bathtub?

gallon

7. What unit would you use to measure the distance from Chicago to Springfield?

mile

8. What unit would you use to measure how heavy a bowling ball is?

pound

9. What would you be measuring if you wanted to know how heavy something is?

weight

10. What would you be measuring if you wanted to know how tall something is?

length

11. What would you be measuring if you wanted to know how much something can hold?

cup

## LENGTH

7 points total – 1 point per box

Teacher: Measure pencil #1 with your ruler. Then estimate how many inches long is pencil #2, #3, and #4. Write your estimates in crayon. Measure each pencil with your ruler and record them in pencil.

PENCIL	ESTIMATE	ACTUAL
#1	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	7 $\frac{1}{2}$
#2	6	7
#3	4	4
#4	6	6

## CAPACITY

2 points – 1 point per container estimated

Teacher: Fill the measuring cup with water. Pour a cup of water in each of the other containers and estimate their capacity in cups.

## WEIGHT

2 points – 1 point per object estimated

Teacher: Use the balance scale to find the weight of the calculator in ounces. Find two objects in the room that weigh about the same amount in ounces. Check your estimates.

22 / 25 points

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## MEASURING UP TO STANDARDS

## Student Recording Sheet

14 points - 1 point for each answer

Spread the cards out in front of the student and read them aloud.

Teacher: I want you to pick the card that answers my question and write it on your sheet.

1. What tool and unit would you use to measure the length of a pencil?

Ruler, inch

2. What tool and unit would you use to measure how heavy an apple is?

Scale, pound

3. What would you use to measure the temperature outside?

thermometer

4. What tool and unit would you use to measure how long a hallway is?

yardstick, foot

5. What would you use to measure sugar for a recipe?

cup

6. What would you use to measure water in a bathtub?

gallon

7. What unit would you use to measure the distance from Chicago to Springfield?

mile

8. What unit would you use to measure how heavy a bowling ball is?

pound

9. What would you be measuring if you wanted to know how heavy something is?

weight

10. What would you be measuring if you wanted to know how tall something is?

length

11. What would you be measuring if you wanted to know how much something can hold?

Capacity

## LENGTH

7 points total – 1 point per box

**Teacher:** Measure pencil #1 with your ruler. Then estimate how many inches long is pencil #2, #3, and #4. Write your estimates in crayon. Measure each pencil with your ruler and record them in pencil.

PENCIL	ESTIMATE	ACTUAL
#1	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	7 1/2
#2	6	6 1/2
#3	4	4
#4	5	5 1/2

## CAPACITY

2 points – 1 point per container estimated

**Teacher:** Fill the measuring cup with water. Pour a cup of water in each of the other containers and estimate their capacity in cups.

## WEIGHT

2 points – 1 point per object estimated

**Teacher:** Use the balance scale to find the weight of the calculator in ounces. Find two objects in the room that weigh about the same amount in ounces. *Check your estimates.*

23 / 25 points