Teacher Guide

Our resource has been created for ease of use by both TEACHERS and STUDENTS alike.

Introduction

Measurement is one of the major skills that students are expected to learn in the elementary grades. The following resource provides students the opportunity to learn, review, and master essential measurement skills. This resource allows students to use, compare, analyze, and assess different units of measurement. Students will reinforce and develop their knowledge of measurement tools, as well as different types of measurement, including: length, width and height; weight; capacity; perimeter; area; angle measurements; time; money

Students will be asked to use standard as well as metric units of measure as they practice these measurement skills.

Teachers may use this resource in any manner they wish. Each sheet may be done independently, or in sequence to develop essential measurement skills that students need to master by the time they have completed fifth grade. The variety of activities will provide ample opportunity for all students to learn these skills.

How Is Our Resource Organized?

STUDENT HANDOUTS

Reproducible **task sheets** and **drill sheets** make up the majority of our resource.

The **task sheets** contain challenging problem-solving tasks, many centered around 'real-world' ideas or problems, which push the boundaries of critical thought and demonstrate to students why mathematics is important and applicable in the real world. It is not expected that all activities will be used, but are offered for variety and flexibility in teaching and assessment. Many of the task sheet problems offer space for reflection, and opportunity for the appropriate use of technology, as encouraged by the *NCTM's Principles & Standards for School Mathematics.*

The **drill sheets** are provided to help students with their procedural proficiency skills, as emphasized by the *NCTM's Curriculum Focal Points.*

The **NCTM Content Standards Assessment Rubric** (*page 4*) is a useful tool for evaluating work in many of the activities in our resource. The **Reviews** (*pages 24-26*) are divided by grade and can be used for a follow-up review or assessment at the completion of the unit.

PICTURE CUES

This resource contains three main types of pages, each with a different purpose and use. A **Picture Cue** at the top of each page shows, at a glance, what the page is for.

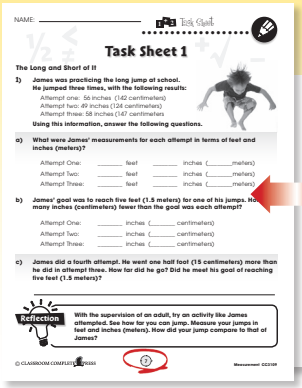
Teacher Guide
- Information and tools for the teacher

Student Handout
- Reproducible worksheets and activities

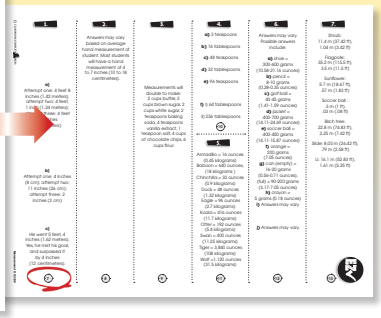
Easy Marking™ Answer Key
- Answers for student activities

EASY MARKING™ ANSWER KEY

Marking students' worksheets is fast and easy with this **Answer Key**. Answers are listed in columns – just line up the column with its corresponding worksheet, as shown, and see how every question matches up with its answer!



Every question matches up with its answer!



NAME: _____

Task Sheet 7

Shadow Casters

7) Li and her class had been studying shadows as part of a science unit in class. The students measured the length of shadows of objects at 8 AM and noon as part of their project. The results are listed below. The last part of the experiment is to convert the measurement from centimeters to meters. Help Li's class by converting the measurement from centimeters to meters in the spot below.

Object	Shadow length at 8 AM in centimeters (inches)	Shadow length at 8 AM in meters (feet)	Shadow length at noon in centimeters (inches)	Shadow length at noon in meters (feet)
a) Shrub	1140 (448)		104 (41)	
b) Flagpole	3[illegible] (1380)		350 (138)	
c) Sunflower	[illegible] (22)		57 (22)	
d) Soccer ball	[illegible]0 (12)		3 (1)	
e) Birch tree	2280 (898)		225 (89)	
f) Slide	805 (317)		79 (31)	
g) Li	1610 (634)		160 (63)	

Reflection

Try measuring shadows of three objects outside at 8 AM and noon. List your results in the chart below.

Object 1 _____ 8 AM _____ noon _____

Object 2 _____ 8 AM _____ noon _____

Object 3 _____ 8 AM _____ noon _____

Review Sheet

NAME: _____

Review A

Measurement Conversions

a)

4 ft =	_____ in	24 in =	_____ ft	2 yd =	_____ ft
300 cm =	_____ m	800 mm =	_____ cm	2 m =	_____ cm
6 ft =	_____ yds	12 ft =	_____ yds	36 in =	_____ ft

Weight

b)

1 lb =	_____ oz	32 oz =	_____ lbs	6 lbs =	_____ oz
1000 mg =	_____ g	4000 mg =	_____ g	2 g =	_____ mg

Liquid Measurement

c)

1 quart =	_____ pints	4 pints =	_____ cups	2 gallons =	_____ quarts
4 cups =	_____ pints	8 quarts =	_____ gallons	3 pints =	_____ cups

Time

d)

60 seconds =	_____ minutes	2 minutes =	_____ seconds
1 hour =	_____ minutes	120 minutes =	_____ hours

Temperature

e) The freezing point in Fahrenheit = _____ °F

f) The freezing point in Celsius = _____ °C

g) The boiling point in Fahrenheit= _____ °F

h) The boiling point in Celsius = _____ °C

Measurement All Around

Think about the classroom you are currently in. Suppose you were going to replace the floor. To do this, you would need to know the area of your classroom floor. On your own, or with the help of other classmates, complete the following task.

1. Determine what unit would be best to measure the area. Share your suggestions in class.

2. Determine which tool you will use to find this measurement. Share your suggestions in class.

3. Make an estimate for the classroom area. Share your estimate in class. Explain how you determined the estimate.

4. Create a plan to find the area. What will you need to measure? How will you use these measurements to find the area? Share your ideas in class.

5. Find the area. Share your area in class.

6. Make a drawing or diagram of your classroom. In this diagram, show the area of your classroom. Label the length and width of each side of the classroom.

7. Compare the area of the classroom with the perimeter of the classroom. How are they similar? How are they different?

8. Up for a challenge? A typical tile used to put on a classroom floor is 9 inches by 9 inches (or 22.5 cm by 22.5 cm). How many tiles would you need to use to cover your entire floor?