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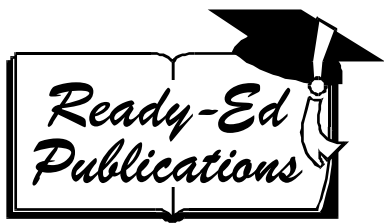
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## Book 3 - Grades 3/4

# Measurement in Mathematics Series

**Practical measuring activities for the  
classroom.**

Written by Leone Westenberg. Illustrated by Rod Jefferson.  
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# Measurement: Grades 3 - 4

## Skills Checklist

This book is designed to be used in conjunction with measurement activities related to the class mathematics program. The activities are a response to curriculum requirements of children working at this level and cover the following concepts:

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<input type="checkbox"/> measure using arbitrary units	5, 6
<input type="checkbox"/> understand that 100 centimeters = 1 meter	7, 9
<input type="checkbox"/> measure in centimeters and meters	7, 10, 11
<input type="checkbox"/> measurement of polygons	12, 13
<b>Area</b>	
<input type="checkbox"/> cover surfaces and compare areas using arbitrary units	14, 15, 16
<input type="checkbox"/> manipulate 2D shapes	16, 17
<input type="checkbox"/> use a geoboard to make figures/designs	18, 19
<b>Volume and capacity</b>	
<input type="checkbox"/> activities involving modelling, shaping, building	20
<input type="checkbox"/> investigate volume and capacity of fluids and containers	21, 22
<input type="checkbox"/> measure to the nearest liter	23
<input type="checkbox"/> activities involving displacement of liquids	24
<input type="checkbox"/> construct 3D shapes with uniform units	25, 26, 27
<b>Mass</b>	
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<input type="checkbox"/> measure mass in g and kg	30, 31, 32
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<input type="checkbox"/> 24 hours = 1 day	
<input type="checkbox"/> 2 weeks = 1 fortnight	
<input type="checkbox"/> 1 month = 4 weeks	
<input type="checkbox"/> estimate and measure intervals of time	40, 41

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# Materials required

The activities in this book use the following materials:

long lengths of rope or paper

newspapers

meter ruler

trundle wheel

tape measure

toothpicks

paper clips

dried beans

base ten blocks

cardboard

beanbags

different-sized boxes

masking tape

paper patty pans

balancing scales

marbles

string

glue

2 cm cubes

plastic containers

balancing scales

rice

pasta

watch or clock with a second hand

string

chalk

scissors

graph paper

drawing pins

hole punch

geoboard(s)

rubber bands

Plasticine

funnel

scoop

sand

coat hanger

kitchen scales

bathroom scales

colored pencils

colored paper

bottles and jars

water

buckets

small rocks and other small objects

1 and 2 liter plastic bottles

calendar

stopwatch

Name .....

Length: Measurement in arbitrary units.

# How did they measure?

You will need:  
long lengths of rope  
or paper.

In ancient times, people used a number of ways to measure things. They could use hand spans to see how long something was.



They could use footsteps to see how long something was.



They could measure with long lengths of rope (or paper or other materials).



Choose 2 of these units of measure.

Choose 6 objects around your room or school to measure. Record your results.

Compare your results to your partner's results.

How are they the same? How do they differ?

Unit of measure

Items	1. ....	2. ....
1.		
2.		
3.		
4.		
5.		
6.		

My partner and I measured these items: .....

.....

We used these units to measure with: .....

.....

Our results are the same/different because: .....

.....

.....

Name .....

Length: Measurement using arbitrary units.

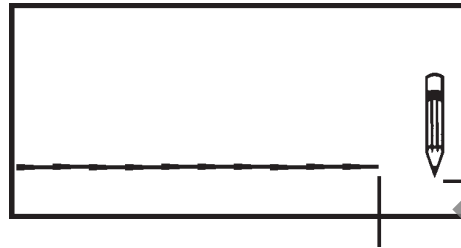
# Toothpick measures

You will need:  
10 toothpicks, 10 paper clips,  
10 dried beans, 10 of an  
object of your choice.

Get out 10 toothpicks.

Imagine the toothpicks laid out end to end on your table.

Estimate how far they would reach. Put a pencil where you think they will end.



**Your table**

Where you think the toothpicks would end.

Where the toothpicks actually end.

Now lay out the toothpicks to see how close you came to your estimate.

- Try this activity again with 10 paper clips, 10 beans, and 10 of an object of your choice. Find the length of items in your classroom using the toothpicks, e.g. a set of shelves, your book, the cupboard, etc. Repeat your measuring using your other measuring tools. Record your measurements in the table below:

*Note: You can use half a toothpick as a measure if you need to.*

Objects Measured

toothpick			
paper clips			
beans			
your choice .....			

- Now, measure your book using **only one** toothpick. What method will you use to make sure the start of the next toothpick lines up with the end of the first toothpick length (e.g. mark where the toothpick ends, swing the toothpick around ...)?

Measure some other objects this way.

Write your answers here:

e.g. book

12 toothpicks long, 6 toothpicks wide

.....

.....

.....

.....