

## Another FREE SAMPLE LAB from TOPS LEARNING SYSTEMS!

This TOPS Idea is taken from an original series of black-and-white line masters, adapted to stand alone as an independent mini-lesson. Please purchase our original book to get the whole in-depth program.

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- 01 PENDULUMS (gr 8-12)
- 02 MEASURING LENGTH (gr 6-10)
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- 05 WEIGHING (gr 5-10)
- 06 METRIC MEASURE (gr 8-12)
- 07 MATH LAB (gr 7-12)
- 08 PROBABILITY (gr 6-10)
- 09 FLOATING & SINKING (gr 7-12)
- 10 ANALYSIS (gr 5-10)
- 11 OXIDATION (gr 6-10)
- 12 SOLUTIONS (gr 6-10)
- 13 COHESION/ADHESION (gr 6-10)
- 14 KINETIC MODEL (gr 7-12)
- 15 HEAT (gr 8-12)
- 16 PRESSURE (gr 7-12)
- 17 LIGHT (gr 6-11)
- 18 SOUND (gr 7-12)
- 19 ELECTRICITY (gr 8-12)
- 20 MAGNETISM (gr 8-12)
- 21 MOTION (gr 7-12)
- 22 MACHINES (gr 7-12)
- 23 ROCKS & MINERALS (gr 6-12)
- 31 PERFECT BALANCE (gr K-12)
- 32 ELECTRICITY (gr 3-8)
- 33 MAGNETISM (gr 3-8)
- 34 PENDULUMS (gr 4-9)
- 35 METRIC MEASURING (gr 5-9)
- 36 MORE METRICS (gr 6-10)
- 37 ANIMAL SURVIVAL (gr 3-8)
- 38 Green Thumbs: RADISHES (gr 3-8)
- 39 Green Thumbs: CORN & BEANS (gr 4-12)
- 40 EARTH, MOON & SUN (gr 7-12)
- 41 PLANETS & STARS (gr 7-12)
- 42 FOCUS POCUS (gr 5-10)
- 43 FAR OUT MATH (gr 9-12)
- 44 SCALE THE UNIVERSE (gr 5-12)
- 45 PI IN THE SKY (gr 5-12)
- 61 A SUMMER START (gr 1-8)
- 62 Intermediate ABC SOUP (gr 4-8)
- 63 PEACEFUL PROCEDURES (gr 1-8)
- 64 Primary ABC SOUP (gr 1-3)
- 71 Primary LENTIL SCIENCE (gr K-3)
- 72 Intermediate LENTIL SCIENCE (gr 3-6)
- 73 GET A GRIP Workstation (gr K-6)
- 91 GLOBAL TOPS (gr 3-10)
- 100 TRIPLE MAGNIFIER (gr 3-12)
- 200 CARTESIAN DIVER (adapts K-12)

### decimal bounce

...adapted from **MEASURING LENGTH #02**  
by TOPS Learning Systems

Each bounce of the decimal to the right makes the unit ten times bigger...  
... and each decimal place has a name.

**0.000.1.000.0**

Labels below the number line:  
 milli-unit (under first 0), centi-unit (under second 0), deci-unit (under third 0), one unit (under 1), deka-unit (under first 0 after 1), hecto-unit (under second 0 after 1), kilo-unit (under third 0 after 1).

- If the decimal point moves one place to the **left**, how does the size of the unit change?
- Convert the following units for money and time into metric language by completing these tables:

METRIC MONEY	

METRIC TIME	

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#### OBJECTIVE

To define the decimal equivalents of metric prefixes, and combine them with units of measure.

#### ANSWERS

1. Each move of the decimal point to the left divides the unit by ten (ten times smaller).

2.	<table border="1"> <tr><td>milli-dollar</td><td>0.001 dollar (0.1¢)</td></tr> <tr><td>centi-dollar</td><td>0.01 dollar (1¢)</td></tr> <tr><td>deci-dollar</td><td>10 cents (10¢)</td></tr> <tr><td>one dollar</td><td>1 dollar</td></tr> <tr><td>deka-dollar</td><td>10 dollars</td></tr> <tr><td>hecto-dollar</td><td>100 dollars</td></tr> <tr><td>kilo-dollar</td><td>1,000 dollars</td></tr> </table>	milli-dollar	0.001 dollar (0.1¢)	centi-dollar	0.01 dollar (1¢)	deci-dollar	10 cents (10¢)	one dollar	1 dollar	deka-dollar	10 dollars	hecto-dollar	100 dollars	kilo-dollar	1,000 dollars	<table border="1"> <tr><td>milli-minute</td><td>0.001 min (0.06 sec)</td></tr> <tr><td>centi-minute</td><td>0.01 min (0.6 sec)</td></tr> <tr><td>deci-minute</td><td>0.1 min (6 sec)</td></tr> <tr><td>one minute</td><td>1 minute</td></tr> <tr><td>deka-minute</td><td>10 minutes</td></tr> <tr><td>hecto-minute</td><td>100 minutes</td></tr> <tr><td>kilo-minute</td><td>1000 minutes</td></tr> </table>	milli-minute	0.001 min (0.06 sec)	centi-minute	0.01 min (0.6 sec)	deci-minute	0.1 min (6 sec)	one minute	1 minute	deka-minute	10 minutes	hecto-minute	100 minutes	kilo-minute	1000 minutes
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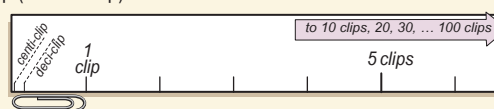
#### EVALUATION

A yard is 36 inches long. How long is:

- 1 centi-yard? (0.36 inches)
- 1 milli-yard? (0.036 inches)
- 1 kilo-yard? (36,000 inches, or 1,000 yards)

#### EXTENSION

Cut adding machine tape to the length of 1 hecto-paper-clip (1 hecto-clip). Draw and label the metric subdivisions.



#### MATERIALS

- Lab: only student pencil and paper.
- Extension: about 3.5 meters of adding machine tape, scissors, paper clip.

**Inquiry:** Joe and Gita each mark the first 10 clip lengths on their tapes, then fold to measure additional 10's, up to 100. Why are their finished tapes different lengths? (Small measuring errors in the length of 1 clip multiply 100 times over.)

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