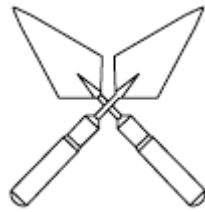
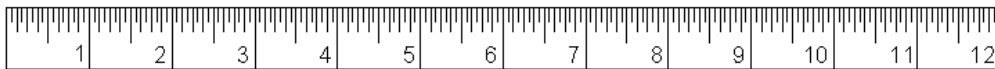


Arky for Kidz Program[©]



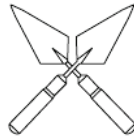
Tutorial - Imperial System (feet and inches)



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Feet and inches

This system is the most widely used method for taking personal and commercial measurements in the United States. See Fig 1.

- Prime unit: *foot*.
- The foot is broken into 12 equal segments, called the *inch* (in).
- Each inch can be broken down into two – $1/2$ inch segments.
- Each inch can be broken down into four – $1/4$ inch segments.
- Each inch can be broken down into eight - $1/8$ inch segments.
- $1/8$ inch = the smallest unit of measure used in this program.

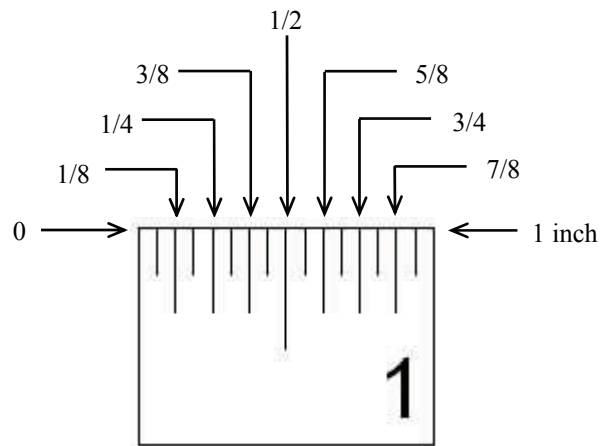


Figure 1. 1 inch segment.

Figure 2 displays a standard foot broken down into 12 inch segments.

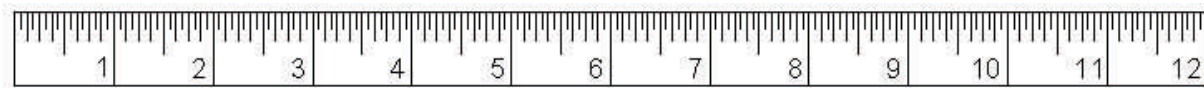
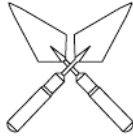


Figure 2.

Foot and Inch Symbols

- The symbol used for the *foot* is a single quote: 3'
- The symbol used for the *inch* is a double quote: 9"
- Together, three feet and nine inches is displayed as: 3' - 9"
- Note that a *dash* is always placed between *feet* and *inches*.



Recording Feet and Inches (Imperial System)

There is no easy way to add, subtract, multiple, or divide numbers between the units of the Imperial System as there is in the Metric system.

Feet and Inches

- All notation must be carefully written down to avoid errors.
- The segments include: fractions of inches, inches, feet, yards, and miles.
- For this program: Round the measurement up or down to the nearest 1/4 inch.

Written Examples:

$$1 \text{ foot} = 1 \text{ ft or } 1'$$
$$3 \text{ feet} = 3 \text{ ft or } 3'$$

$$1 \text{ inch} = 1 \text{ in or } 1''$$
$$3 \text{ inches} = 3 \text{ in or } 3''$$

$$1 \text{ foot} = 12 \text{ in or } 12''$$
$$1 \text{ statue mile} = 5,280 \text{ feet or } 5,280'$$

Fractions:

1 inch contains the following fractions:

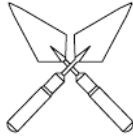
- 1/2''
- 1/4''
- 1/8'' (not used in this program)
- 1/16'' (not used in this program)
- 1/32'' (not used in this program)
- 1/64'' (not used in this program)

Writing Out Feet and Inches

Written Examples:

$$125 \text{ ft} - 8 \text{ in (long form)} = 125' - 8'' \text{ (short form)}$$

- 25 feet - 6 inches = 25' - 6''
- 16 feet - 4 1/2 inches = 16' - 4 1/2''
- 8 feet - 2 1/8 inches = 8' - 2 1/8''



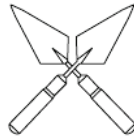
Optional Methods of Notation

It is a common practice when recording dimensions to include a zero (0) before any measurement that is less than one foot in length (when writing space permits). This method insures to the reader that *no feet* were recorded for the measurement. This is an optional method of notation for this program and is not required.

- 4 3/4 inches = 0' - 4 3/4"
- 8 1/4 inches = 0' - 8 1/4"

It is also acceptable to record dimensions as shown below without any reference to *feet*. Since the dimensions are recorded in inches note that no zero (0) precedes the measurements. This is an optional method of notation for this program and is not required.

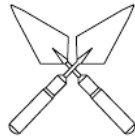
- 18 3/4"
- 22"
- 56 1/2"
- 94 1/4"



Notation Short Hand Chart

To reduce the amount of time spent writing notation when surveying, use the *letters* or *symbols* listed on the chart below.

Notation Short Hand Chart			
Name	Letters or Symbol	Example	System Used
length	L	$L = 4' - 4 \frac{5}{8}''$	Imperial
width	W	$W = 8'$	Imperial
height	H	$H = 3 \frac{1}{4}''$	Imperial
diameter	\varnothing or D	$\varnothing = 112 \text{ mm}$	Metric
circumference	C	$C = 475 \text{ mm}$	Metric
radius	r	$r = 3.216 \text{ m}$	Metric
angle	\sphericalangle	$\sphericalangle = 37^\circ$	Metric or Imperial
pi	π	$\pi = 3.14$	Metric or Imperial
meter	m	105 m	Metric
decimeter	dm	4.8 dm	Metric
centimeter	cm	32.6 cm	Metric
millimeter	mm	275 mm	Metric
feet	'	12'	Imperial
inch	''	9''	Imperial



Notes:



This tutorial is adapted from the Nautical Archaeology Diver Program.
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