Imperial Units and Length

Lesson 10

Lesson Ten Concepts

➢ Investigate, discuss and describe applications from the everyday life and the workplace that would involve the measurement of length in feet and inches.
➢ Measure length in feet and inches, to an accuracy of ¼ inch, using a12 inch ruler.
➢ Record measurements, using commonly accepted abbreviations for the chosen units.
➢ Investigate, identify and use personal referents to aid in the estimation of length in feet and inches.
➢ Estimate and use measurements of lengths in feet and inches in everyday situations.

Measure of Length in the Imperial System

How long is it?
How wide is it?
What is its circumference?

In the imperial system there are ***four main units of measurement*** that are used in answering the above question.

1. inches (in)
2. feet (ft)
3. yards(yd)
4. miles (mi)

Here are some examples of what each measurement might look like.

inches (in)   **feet (ft)**
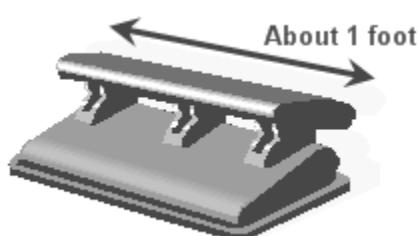
yards (yds)   **mile (mi)**
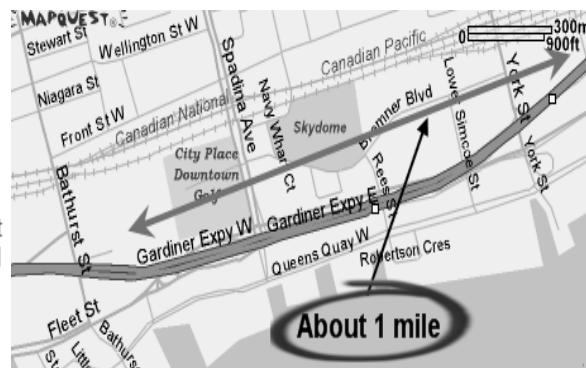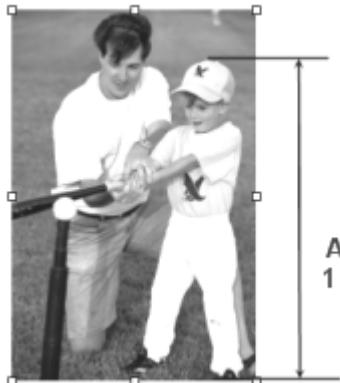
Key Conversions lengths and the imperial system

There are 12 inches in one foot
There are 3 feet in one yard
There are 1760 yards in one mile

Example

a.   Choose the best measure for the length of a pencil.

7 inches   11 inches   5 inches

Answer: A pencil is approximately 7 inches long.

> The symbol " can also mean inches.
> 7 inches = 7 "

b.   Choose the best measure for the height of a basketball rim.

6 feet   10 feet   19 feet

Answer: A basketball rim is 10 feet high.

> The symbol ' can also mean feet.
> 7 inches = 7'

c.   Choose the best measure for the length of a student's desk.

1 yard   2 yards   1.2 yards

Answer: A typical student desk is approximately 1 yard wide.

✏️ Support Questions

1.   Choose the best measure.

|				
a.	Average depth of a lake	8 ft	200 ft	900 ft
b.	Length of a screw	3/8"	12"	2'
c.	Wheel base of a mid-sized car	8 ft	60 ft	900 ft
d.	Height of a giant tree	100 inches	100 feet	100 yds
e.	Length of a soccer field	10 yds	110 yds	1000 yds
f.	Length of a peanut	1 1/8 inches	2 feet	1/2 yd
g.	Distance from Ajax to Oshawa	5 miles	50 miles	900 miles
h.	Height of an adult	70"	110"	200"
i.	Width of a hockey rink	10'	40'	300'
j.	Height of a toaster	3"	9"	20"

Using a ruler

Inches are divided up into eighths (1/8ths) as shown on the diagram below.
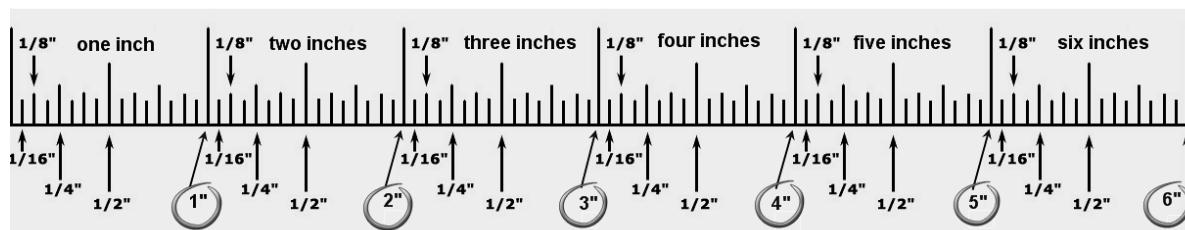
Example

a.   Estimate the length in inches of the object below as shown by the arrows.
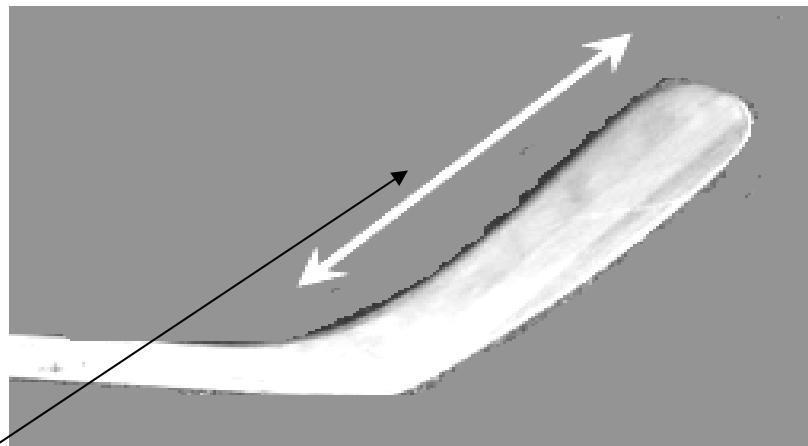
Answer: Approximate 2"
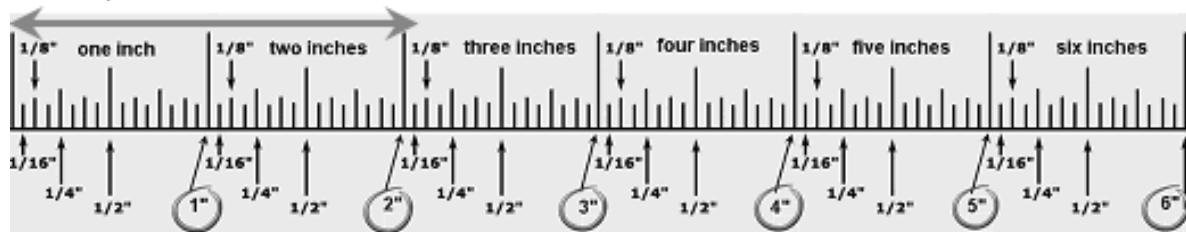
b.   Using a ruler, measure the length of the object below as shown by the arrows.
   Round your answer to the nearest 1/8th of an inch.

        Answer: Approximately 2 1/8th "

Support Questions

2.   Estimate then calculate the length of each diagram as indicated with the arrows.
   (measurements should be rounded to the nearest 1/8")
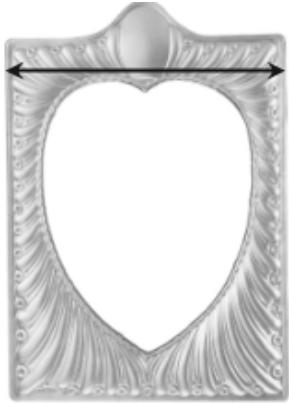
     a.   b.

     c.
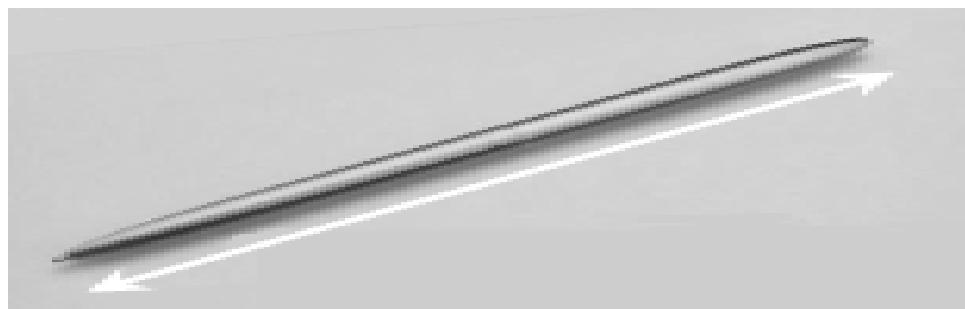
     d.

 Key Question #10

1.   Choose the best measure.

a.	Width of a mid-sized car	9 ft	24 ft	120 ft
b.	Height of a stop sign	88 inches	84 feet	84 yds
c.	Width across a highway	2 yds	10 yds	50 yds
d.	Length of a pointer finger	3"	3'	8"
e.	Distance from Vancouver to Montreal	100 miles	500 miles	2500 miles
f.	Length of a newborn child	22"	100"	215"

2.   Estimate then calculate the width of a quarter in imperial units.

3.   When completing a measurement, when do you think it is easier to use the imperial system and when do you think it would be easier to use the metric system. Explain with words and a numerical example for each.

Key Question #10 (con't)

4.   Estimate then calculate the length of each diagram as indicated with the arrows. (measurements should be rounded to the nearest 1/8")

a)

b)