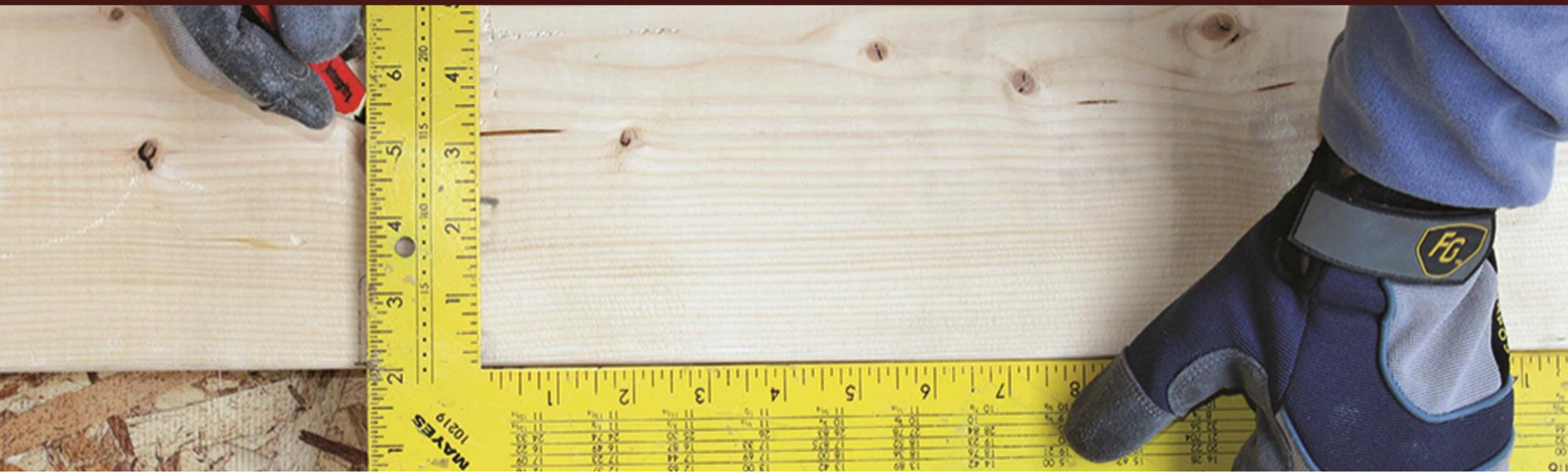
Core

Module 00103

Introduction to Hand Tools



2.0.0 Measurement and Layout Tools

Objective

Successful completion of this module prepares you to do the following:

Identify common measurement and layout tools and describe how to use them.

a. Explain how to use a variety of measuring tools.

b. Define various types of levels and layout tools and indicate how they are used.

Performance Task

Under supervision, you should be able to do the following:

1. Inspect and demonstrate the safe and proper use of the following hand tools:
    - Tape measures
    - Levels
    - Squares

Trade Terms

Plumb: Perfectly vertical, meaning a surface is at a right angle (perpendicular) to the horizon or other surface used for comparison.

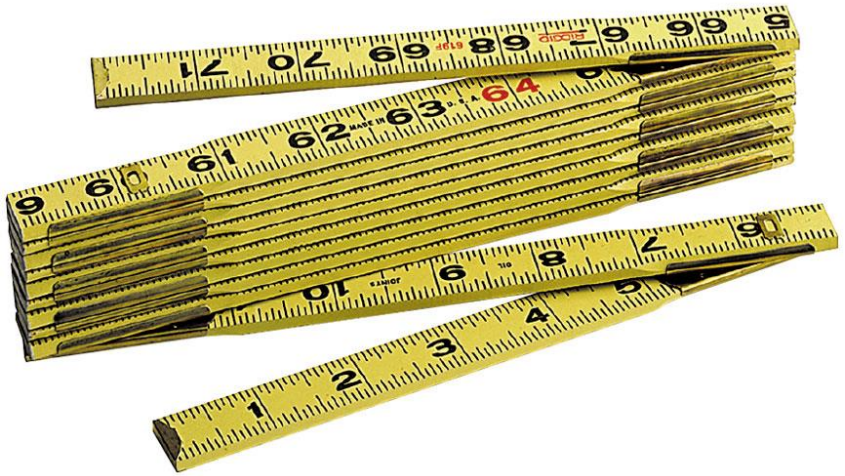
Concave: Having a shape that curves inward, such as the interior of a circle. *Convex* is an antonym, meaning a shape that curves outward.

Square: Used as an adjective in this context, to have the shape of a square where two components are at precise 90-degree angles (perpendicular) to each other.

Rafter: One of a series of beams that extend from the perimeter of a building to the high point of a roof, providing structural support for the roof above.

2.1.2 – Tape Measure

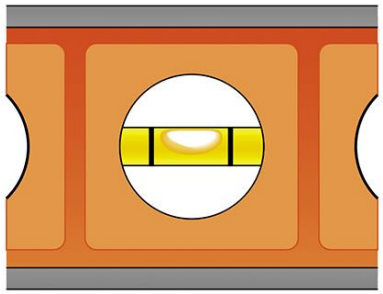
Tape measures, or measuring tapes, are great for measurements for a range of lengths. Folding rules are usually 6 feet or 2 meters long and remain rigid, which has its advantages as well.



2.2.1 – Spirit Levels

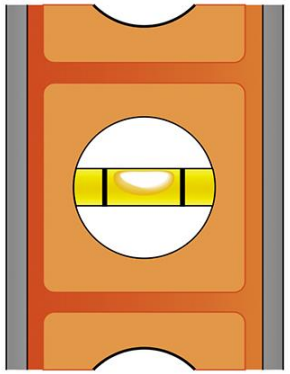
A spirit level is the most common leveling instrument.

(A)



(B) Level

(C)



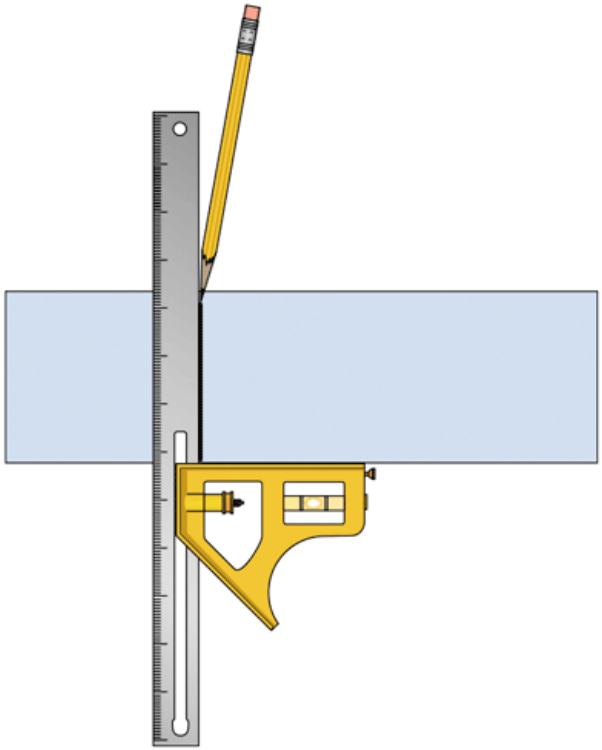
(D) Plumb

2.2.5 – Squares (1 of 3)

A pipefitter's square looks like a carpenter's square from a distance, but the tables and formulas marked on it are different. They are best for large stock and checking framing.

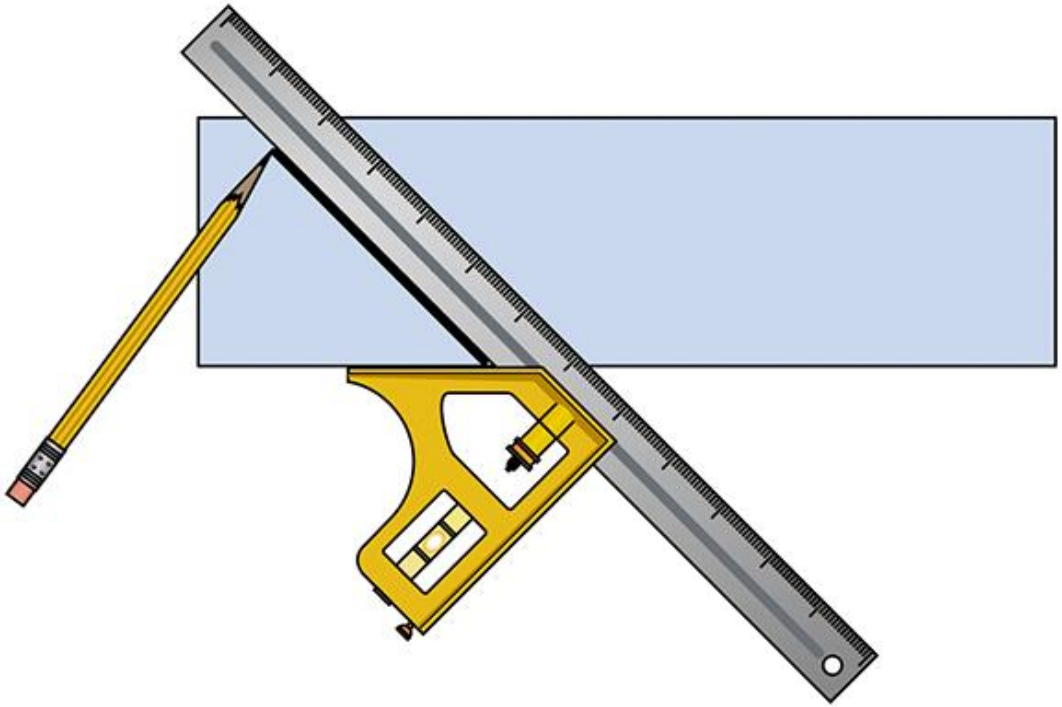
2.2.5 – Squares (2 of 3)

The combination square can mark 90-degree angles.



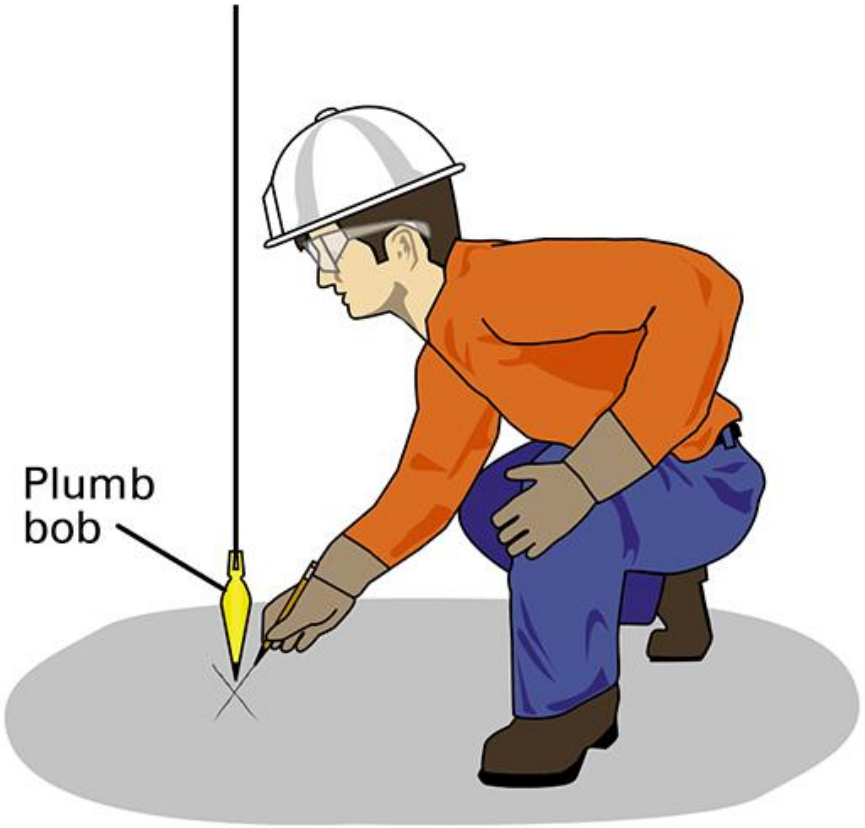
2.2.5 – Squares (3 of 3)

The combination square can mark 45-degree angles. It is limited somewhat by its size and design to scribing lines rather than checking framing for a square condition.



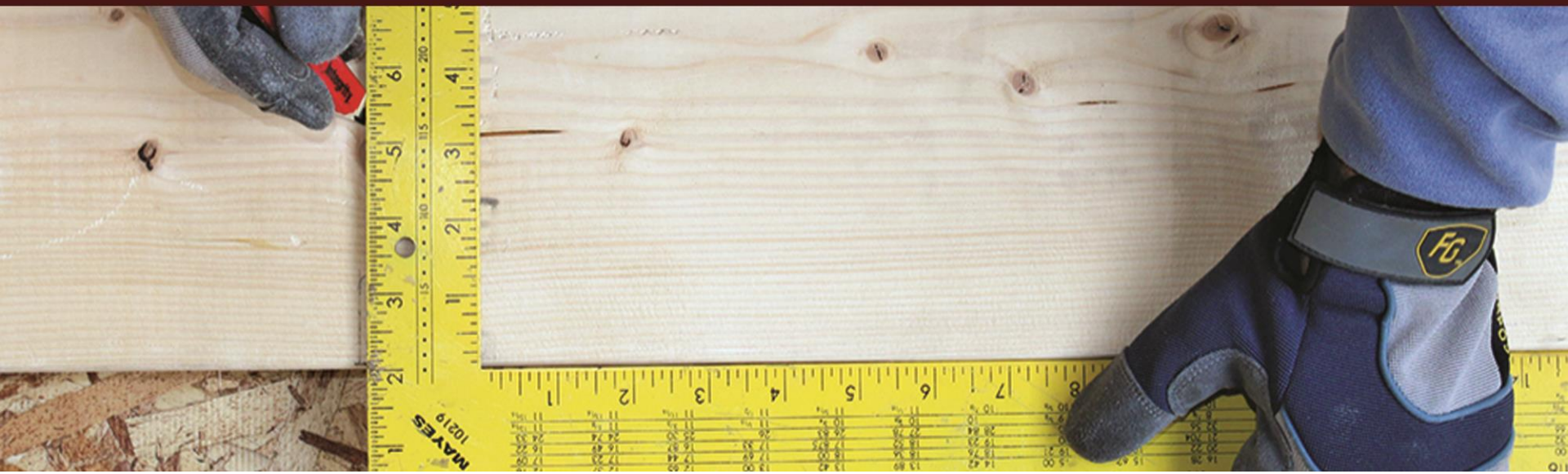
2.2.7 – Plumb Bob

Plumb bobs can identify a point directly beneath another point.



2.2.8 – Chalk Lines

Once this point is identified, a chalk line can be used to place a straight line between points.



Next Section…

3.0.0 Other Common Hand Tools

Read Sections 3.0.0 through 3.4.1. Complete the Section 3.0.0 Review.