



Course Building Construction
Section: Carpentry



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Check for Square

What You Will Do

Create a square and use the Pythagorean Theorem to test to see if it is square.

Materials You Will Need

- Pencil
- Paper
- Ruler

What is Square?

Square means that a corner is exactly 90 degrees. Carpenters and builders primarily use the Pythagorean Theorem ($a^2+b^2=C^2$) to ensure structural accuracy, primarily by creating perfect 90-degree right angles (squaring) and calculating diagonal lengths. This mathematical principle is used to establish that if the legs of a triangle are squared and added, they equal the square of the hypotenuse.

Important Terms

- **Pythagorean Theorem** – A fundamental geometric rule stating that for any right triangle, the square of the hypotenuse equals the sum of the squares of the legs. Used to calculate unknown side lengths. It applies only to right-angled triangles.
- **Hypotenuse** – The longest side of a right-angled triangle.
- **Squared Number** – When a number is multiplied by itself ($3^2=9$).

Carpenters use the 3-4-5 triangle:

- If one side = 3 units
- Other side = 4 units
- Diagonal = 5 units

Then the corner is square. Because: $3^2 + 4^2 = 5^2$

How to Do It

1. Draw a large rectangle on a sheet of paper.
2. In one corner, measure 4 inches along the bottom and make a mark.
3. In the same corner, measure vertically 3 inches and make a mark.
4. Use the ruler to draw a line that connects your marks.
5. Measure that line. If it equals 5 inches, your corner is square.