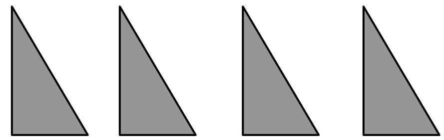
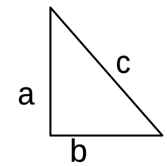
5-5-1 Pythagorean Theorem

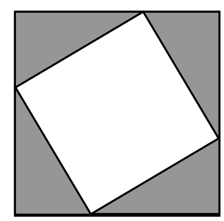
Cut out 4 identical right triangles.



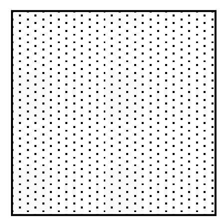
Label the hypotenuse of each triangle "c", the short side "a", and the remaining side "b".



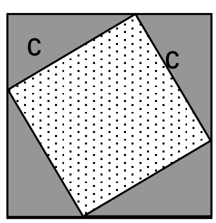
Arrange them in a square the 90E angles as the corners.



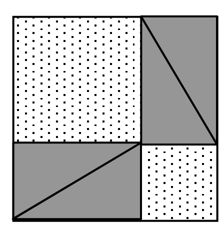
Trace and cut out the large outside resulting square.



Arrange the triangles on top to the square as shown. Notice the area of the square that is not covered by the triangles is c^2.



Now move the triangles to the new position shown.
Notice the area not covered is now a^2+b^2



The areas are the same so $a^2+b^2=c^2$

Some students will cut out long thin right triangles; others might even cut out an isosceles right triangle. This proof will still work.
Now look again at the first arrangement again.
The total area is $(a+b)^2$ remember: A=lw One side of the square is a+b.
Also, total area is the area of triangles plus the area of the inner square.
$4(1/2ab)^2$ is the area of four triangles. c^2 is the area of the square in the first arrangement.
$(a+b)^2=4(1/2ab)+c^2$
$a^2+2ab+b^2=2ab+c^2$
$a^2+b^2=c^2$