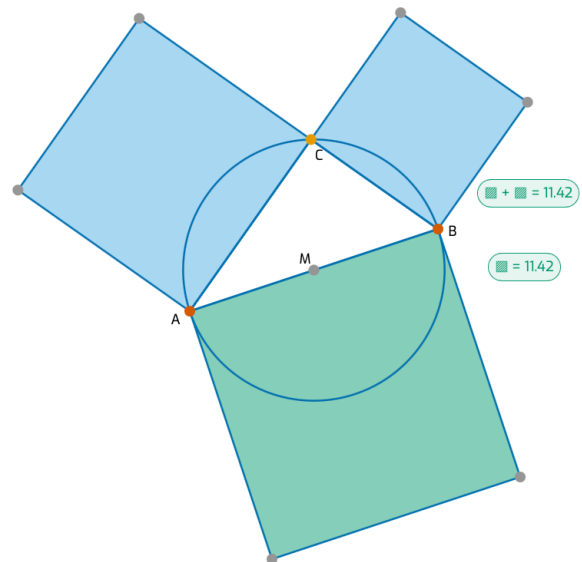


Discovering the Pythagorean Theorem

Construction

- ▶ Given two points A and B . Draw the line segment \overline{AB} .
- ▶ Construct the midpoint of \overline{AB} . Rename C in M .
- ▶ Construct a circle with center M through B .
- ▶ Draw point C on the circle over the diameter \overline{AB} .
- ▶ Connect A and B with C and get the right triangle ABC .
- ▶ Draw squares on the sides of the right triangle. Change the color of the square on the hypotenuse in green.
- ▶ Measure the area of the green square and the sum of the areas of the two blue squares.



Exploration

- ▶ Compare the measurements. Move C on the circle and/or modify the positions of the vertices A and B , too. What do you assume? Take notes.
- ▶ Let a and b stand for the lengths of the legs of the triangle and c for the length of the hypotenuse. Formulate your conjecture with help of these letters. Do not forget the prerequisite concerning the triangle.
- ▶ Detach point C from the circle line and move it inside and outside of the circle. Compare again the sum of the blue areas with the green area. Write down your observations.