

Discovering the Pythagorean Theorem


Prerequisites and Objectives

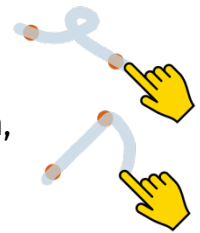
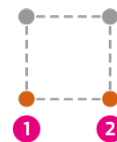
- ▶ Students know that if one side of a triangle is a diameter of the circumcircle, then we have a right triangle.
- ▶ They know that in a right triangle the side opposite the right angle is called the hypotenuse, the other two sides are called legs.
- ▶ They construct the Pythagorean configuration (i.e. squares on the sides of a right triangle).
- ▶ By measuring they find out that in a right triangle the sum of the squares of the lengths of the legs equals the square of the length of the hypotenuse.

sketchometry


The students should know,


- ▶ how to get the midpoint of a line segment,
- ▶ how to draw a circle if center and one point on the circle-line are given,
- ▶ how to draw a square over a line segment,

Geometry > Regular Polygons >  Square > tap two points



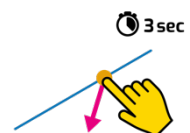
- ▶ how to measure areas and the sum of two areas,

Measure >  Measure > tap an area and place the measurement

Measure > Calculations >  Sum > tap areas or measurements > tap the board at a free spot

- ▶ how to detach a point on a path (glider) from a circle line,

tap the glider and hold it for a moment > move glider to a free spot.



Further Exploration

- ▶ Detach point C from the circumcircle. Then triangle ABC becomes acute or obtuse. How does the relation between the areas of the squares change?
- ▶ Look up historical references to Pythagoras and his mathematical society.