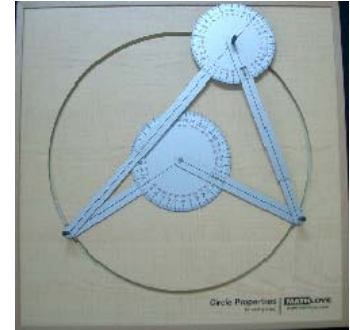


MathLove MathTool Circle Properties

Materials

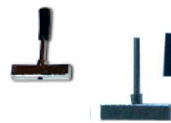
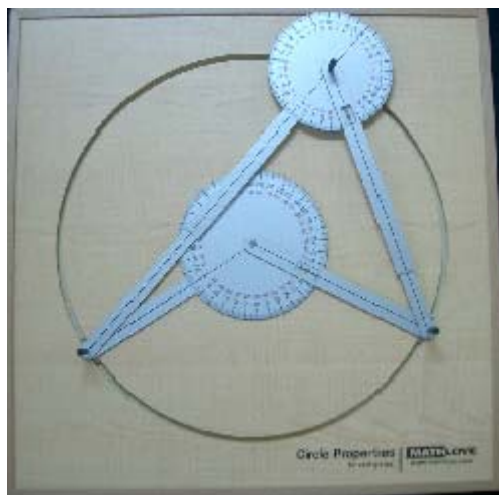
The material must be able to endure bending and humidity. Therefore, MDF was used for the base. To make an impression of a wooden product, maple tree-patterned wood was glued to both sides of the board. Since the parts that measure the angles must be clear, acrylic was utilized instead of plastics.



Components : The inscribed angle tester, 4 accessories

(1) Inscribed angle tester

(2) Accessories



part 1



part 2



part 3



Part 4

Carefulness

Do not give any pressure to the part 2, 3 and 4.

Since they are made of acrylic, they are very breakable.

■ The purpose of developing the product

Until now, teaching inscribed angles was performed by drawing a circle on the blackboard. Presently, the application of computer programs is also common through simulations and experiments. However, simulation with a computer program neglects to show that the angle at the circumference and the central angle do not change even though the lengths of the sides keep changing. After experiencing this tester, many teachers will be impressed with its diversity.

Many teachers and students have already understood and were introduced with the theory of the inscribed angle. However, this tester will solidify their understanding after usage. The inscribed angle tester was developed in order for a hands-on experience of the theory instead of a blackboard demonstration which we have been exposed to.

■ The direction of the product

- (1) The inscribed angle for an arc is fixed and is half of the central angle of the arc.
- (2) The sum of the opposite angles of an inscribed square to a circle is 180 degrees. Also, The external angle of an inscribed square to a circle is the same as the internal angle.
- (3) The angle made by one tangent and chord is the same as the internal angle of the angle at the circumference of the arc.

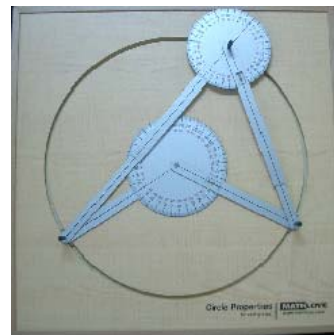
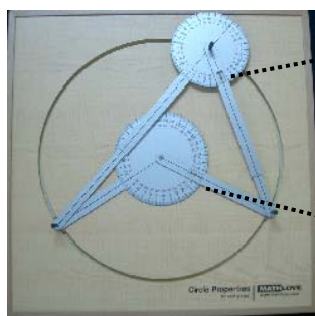
■ The features of the product

Although the position of the protractor keeps changing along the circle, the angle at the circumference or the central angle remains the same. Also, there are some accessories that accompany the package for a better understanding about the inscribed square and the tangent of a hypotenuse.

Explanation and directions

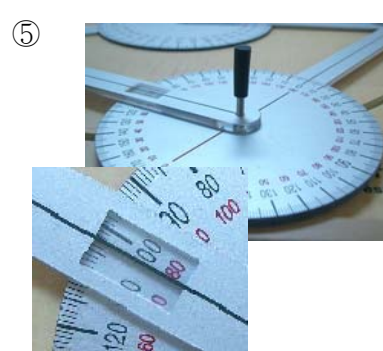
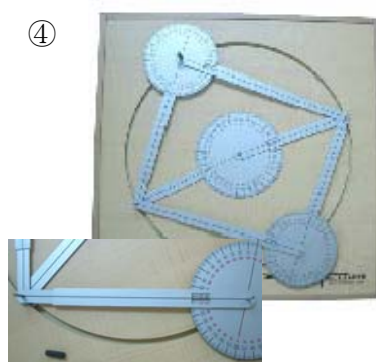
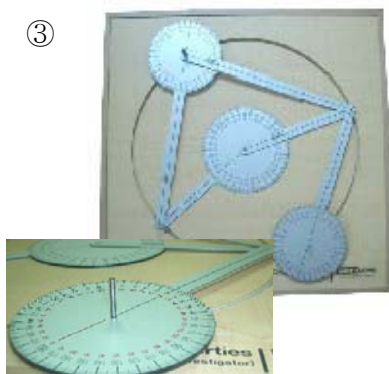
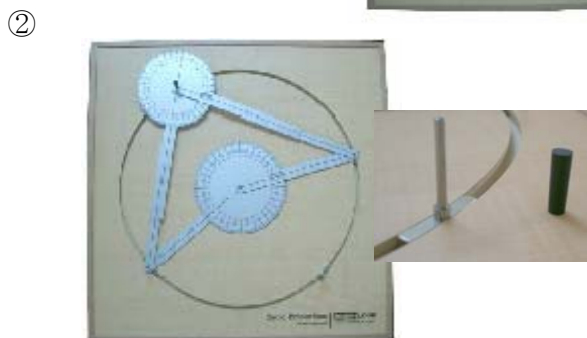
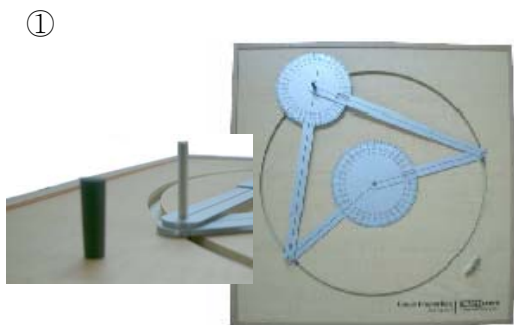
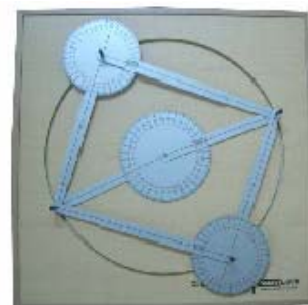
1 The central angle and the angle at the circumference

As you see, use the tester, which is already set up.



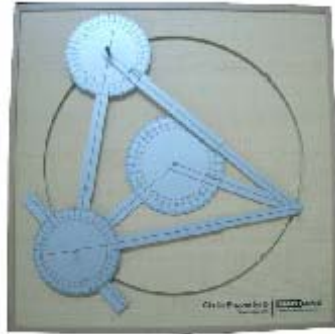
2 The inscribed square

As you see, add 4 accessories (parts 1, 2, 3 and 4) to the tester. When you assemble the accessories together with the tester, remove the rubber grip and put it back when you are done assembling.



3 Chord and the tangent

As you see, assemble the 4 accessories (part 1, 2, 3 and 4) as in the diagram.

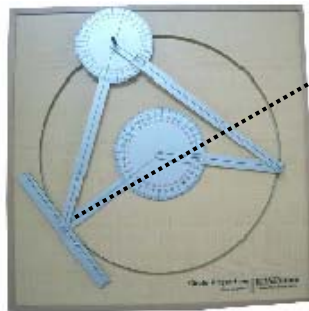


Measure the angle by replacing part 4 to with part 2 after checking the tangent.

①



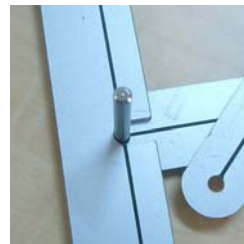
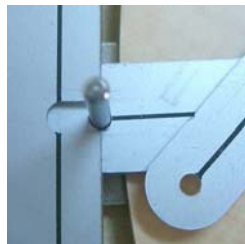
②



Head



Tail



③

