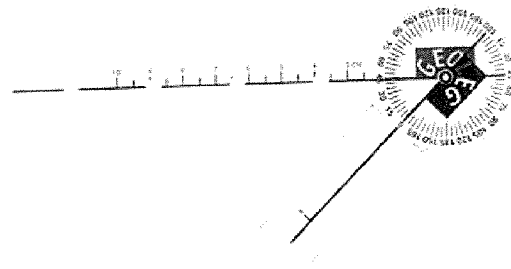


Geo Legs



Students enjoy exploring numerous geometric principles with GEO-LEGS, the all-in-one geometry tool. This manipulative functions as an easy-to-use protractor, a safe compass, and a polygon-building tool.

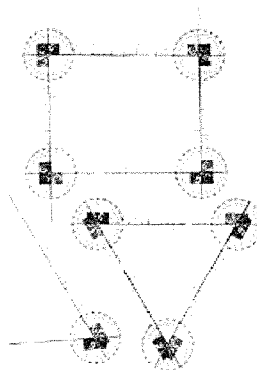
Hands-on explorations, easily tailored to suit a wide range of ability levels, will provide invaluable insights by enabling students to visualize abstract geometry concepts. Complex theorems become simple and relationships between polygon angles and sides become clear.

Measure and draw:

- angles
- arcs
- circles
- bisectors

Increase understanding of:

- proportionality
- congruence
- similarity
- numerous relationships and theorems involving polygon sides and angles



Construct:

- 4 types of triangles
- parallelograms
- trapezoids
- pentagons
- hexagons
- medians
- parallels and transversals
- diagonals
- altitudes

Angles and Sides

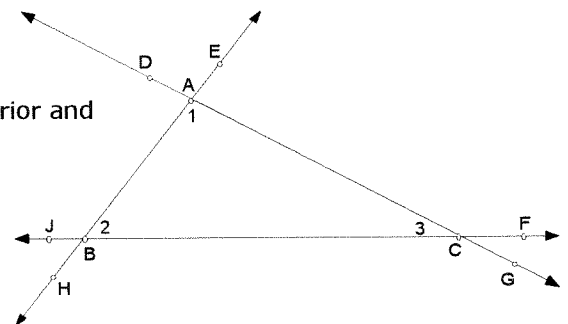
1. What is the measure between two marks when measuring angles on a geo leg?
 - a) 45°
 - b) 60°
 - c) 90°
 - d) 115°
2. What is different between using a protractor to measure an angle and a geo leg to make/measure an angle?
3. Using two geo legs, explore lengths of sides.
 - a) What is the length between two marks on the lengths of the sides?
 - b) What is the smallest length that you can make with two geo legs?
 - c) Make a side with length 12 cm. How do you know it is 12 cm?
 - d) What is the largest length that you can make with two geo legs?

Triangles

4. Mark the angles that are congruent in this picture. Name one interior and one exterior angle at each vertex of triangle ABC.

$\angle 1$ and \angle _____ $\angle 2$ and \angle _____ $\angle 3$ and \angle _____

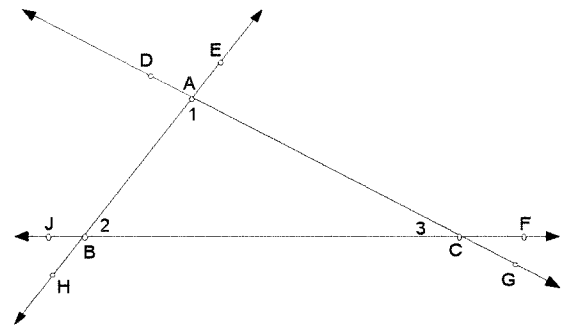
What is true of an interior angle and one exterior angle at any vertex of a triangle?



Triangles

Define: congruent triangles

Create the following triangles with the properties given below and orient the completed triangle so that $\angle A$ is at the top like the drawing shows.



Type of Δ	$m\angle A$	AC	$m\angle C$	CB	$m\angle B$	BA	\cong to other Δ ? If so, name a proposed theorem or postulate
		16 cm		13 cm		14 cm	
	50°	12 cm				12 cm	
	55°		45°		80°	12 cm	
		15 cm		15 cm		15 cm	
	60°	17 cm				17 cm	
	40°			11 cm	100°		
Right	50°	Hypotenuse				11 cm leg	
	60°		60°		60°		
	60°		90°		30°		
Right		12 cm leg				10 cm leg	
	80°			16 cm	60°		
Right				12 cm	45°	Hypotenuse	
Right		14.5 cm leg		18.5 cm hypotenuse			
Right				17cm hypotenuse		10 cm leg	
		15 cm		9 cm		12 cm	

5. What is the difference between AAS and ASA?

What is the difference between SAS and AAS?

6. From your data above, which are ways that seem to produce congruent triangles?

SSS SSA ASA AAS AAA If right Δ s? HL LL LA HA
(leg - acute angle) (hypotenuse - acute angle)

7. What do you know about the acute angles in a right triangle?
How does this help us prove that right triangles are congruent?