

In Activity One, students will recall what they have previously learned about triangle similarity. Specifically, students will need to demonstrate their understanding of angle-angle similarity and the proportionality of corresponding sides of similar triangles. Students will discover that the ratio of a leg to the hypotenuse does not change based on the size of a right triangle, only based on the size of the angle, and will prove this fact based on equivalent ratios of corresponding sides of similar triangles. Students will be reminded of what defines a hypotenuse and introduced to the notion of opposite and adjacent sides based on one of two non-right angles,  $x$ , in a right triangle. The terminology sine and cosine will be defined based on ratios involving the relative position terminology for sides in a right triangle. Students will investigate the relationship between the cosine and sine of both non-right angles in a right triangle and explain why such a relationship exists.