Strand: **Algebra** **Name:__*KEY*____**

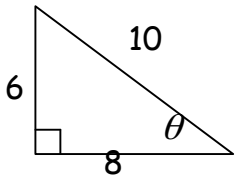
Skill Addressed: Understanding Ratio **Blk: ___**

Activity: *Trigonometric Ratios*

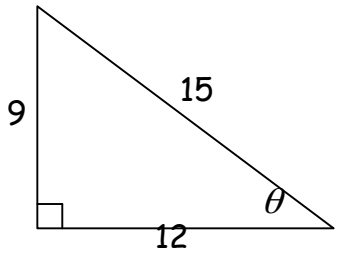
More Ratios:

Sine, Cosine and Tangent [AKA sin, cos, tan] of an angle – usually Theta [θ] are also ratios – they are called Trig Ratios… sin θ, cos θ, tan θ.
It's important for you to know that they are *ratios of **sides** of triangles*.

So, the *lengths of the sides of triangle* are of ultimate importance – they make up the trig ratio!



T1



T2

If the same-shaped triangle is expanded to make a larger one, these triangles are called similar because their angles are the same. Here, the large one is a dilatation of the smaller one.

For Example: If you and your friend have the exact same triangle picture on your iPads and you ***zoom in*** on one of them, they are still the same shape, so they are similar triangles.

Consider the two triangles above:

Triangle T1	Triangle T2
$\sin\theta = \frac{6}{10} = \frac{3}{5}$	$\sin\theta = \frac{9}{15} = \frac{3}{5}$
$\cos\theta = \frac{8}{10} = \frac{4}{5}$	$\cos\theta = \frac{12}{15} = \frac{4}{5}$
$\tan\theta = \frac{6}{8} = \frac{3}{4}$	$\tan\theta = \frac{9}{12} = \frac{3}{4}$

Carefully explain what you notice! ____***The trigonometric ratios of similar triangles are the same because the two triangles are proportional***._____
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