

## Integrated II Unit 12: Right Triangle Trigonometry

**Universal Essential Question: Why is resilience crucial for success? How does investigation lead to discovery? (7<sup>th</sup>)**

**Content Essential Question: How do mathematical relationships help us make sense of the world?**

Learning Objectives	Self-Rating, what you understand/don't yet understand and (last column only) how you learned it		
At the completion of this unit, I should ...	0 – I have no idea. 1 – I cannot solve problems yet but I am beginning to understand the strategies 2 – I can solve problems but do not yet know why the math works. 3 – I understand why the math works and can solve most problems but still make mistakes. 4 – I understand why the math works and can consistently and accurately solve problems.		
<b>Know</b> – Vocabulary of right triangle trigonometry  – The names of the ratios of sides in right triangles  – Law of Sines and Cosines			
<b>Be able to</b> – Identify and use relationships between the sides of special right triangles.  – Identify and compute sine, cosine, and tangent of right triangles.  – Solve right triangles using trigonometry.  – Find missing sides of non-right triangles using the Law of Sines (and Law of Cosines.)  – Prove the Law of Sines and Law of Cosines.  – Find the area of triangles using trigonometry. ( $A=1/2ab \sin C$ )			
<b>Understand</b> – The relationship between the trig ratios and similarity of right triangles  – Why the Law of Sines (and Cosines) work  – The derivation of the area formula ( $A=1/2ab \sin C$ )			

## Vocabulary of Trigonometry

Sine  
Cosine  
Tangent  
Ratio  
Geometric Mean  
Special right triangles  
Special angles

## Reflection page

1. Make a top 10 list about Trigonometry. Generally top 10 lists count down from least important to most important. Each entry can create a broader, more vivid picture of the math concepts you're addressing. You can mix silly and serious information together but it all has to relate to Trig. Pick an enticing title to get us to read your list. Your top 10 list will be stronger if you mix serious information with silly information – your serious information is the straight man to your comedic silly information.

Example:

*Top 10 Reasons to be the number 10* (from *Wacky We-Search Reports*, Barry Lane)

10. Zero would be my friend and always save a place for me.
9. I'd help people count on their fingers.
8. I'd be the base of the decimal system.
7. I'd be a whole number.
6. I'd divide millions.
5. I wouldn't have to get even.
4. The Romans would rate me X.
3. The Babylonians would ignore me.
2. The Greeks would fear me.

**And the number one reason why I want to be the number 10 is  
THE WHOLE WORLD COUNTS ON ME**

2. Describe two real-world examples that illustrate how trigonometry helps you make sense of the world. Be sure to connect each example to the mathematics in this unit.