

MATH MCS MYP UNIT PLANNER

Teacher(s)	Brown, Hull, Schumacher, Siiro, Ross, Ragoo, Washington, Cross-Murphy	Subject group and discipline	Geometry		
Unit title	Unit 3 – Right Triangle Trig	MYP year	5	Unit duration (hrs)	10.5

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context
Relationships	Pattern and Model	Scientific and Technical Innovation Exploration: Mathematical puzzles, principles and discoveries
Statement of inquiry		
Establishing relationships helps us to understand and model change.		
Inquiry questions		
<p>Factual—</p> <ul style="list-style-type: none"> What is the process to find a missing side using right triangle trigonometry? What is the process to find a missing angle using right triangle trigonometry? What are special right triangles? What are Pythagorean triples? What is the difference between angle of elevation and angle of depression? <p>Conceptual—</p> <ul style="list-style-type: none"> How would you describe the relationship between the sine and cosine of complementary angles? How is right triangle trigonometry used to solve real world problems? How do I know which trigonometric ratio to use to solve for a missing side/angle? How are Pythagorean triples and special right triangles used to solve problems? <p>Debatable—</p> <ul style="list-style-type: none"> How would measurements taken with a clinometer on a different planet, with a different distance from the sun, differ from clinometer measurements taken on earth? 		
MYP Objectives	Assessments	

MYP Assessment – Rubric A MYP Assessment – Rubric D	<ul style="list-style-type: none"> ● MYP Quiz Rubric A ● MYP Rubric D ● Right Triangle Trigonometry Test ● Right Triangle Trigonometry Project
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Approaches to learning (ATL)

- Give and receive meaningful feedback
- Negotiate ideas and knowledge with peers and teachers
- Use and interpret a range of discipline-specific terms and symbols
- Draw reasonable conclusions and generalizations
- Apply existing knowledge to generate new ideas, products or processes
- Apply skills and knowledge in unfamiliar situations

Action: Teaching and learning through inquiry

Content Standards

Define trigonometric ratios and solve problems involving right triangles

MGSE9-12.G.SRT.6 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

MGSE9-12.G.SRT.7 Explain and use the relationship between the sine and cosine of complementary angles.

MGSE9-12.G.SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

Learning Activities and Experiences

Topic	Resource	Content Covered	Standards Addressed
Right Triangle Trigonometry	8-1 Right Triangles and the Pythagorean Theorem Pearson enVision pg. 345 – 353	<ul style="list-style-type: none"> ● Prove the Pythagorean Theorem using similar right triangles. ● Understand and apply the relationships between side lengths in 45°- 45°- 90° and 30°- 60°- 90° right triangles. 	SRT.8
	Additional Resources:		
	8-2 Trigonometric Ratios Pearson enVision pg. 354 – 360	<ul style="list-style-type: none"> ● Define and calculate sine, cosine, and tangent ratios ● Use trigonometric ratios to solve problems. 	SRT.6 SRT.8
	Additional Resources:		
	Discovering Trigonometric Ratio Relationships (DOE)	<ul style="list-style-type: none"> ● Explain the relationship between the sine and cosine of complementary angles ● Students discover the relationship between the sine and cosine of complementary angles. 	SRT.6 SRT.7

Additional Resources:		
8-5 Problem Solving with Trigonometry Pearson enVision pg. 374-379	<ul style="list-style-type: none"> Distinguish between angles of elevation and depression. Use trigonometric ratios to solve problems. 	SRT.8
Additional Resources:		
Miniature Golf (DOE Career and Technical Education Task)	<ul style="list-style-type: none"> Applications of Right Triangles 	SRT.8
Culminating Task: Hypsometer Activity – Indirect Measurement (DOE)	<ul style="list-style-type: none"> Review of Unit Standards 	SRT.8
Additional Resources: <ul style="list-style-type: none"> 3-Act Task Horizons (DOE Spotlight Task) Pythagorean Triples (DOE Short Cycle Task) Eratosthenes Finds the Circumference of the Earth Learning Task (DOE) Finding Right Triangles in Your Environment Learning Task (DOE) 3-Act Task The Impossible Measurement Pearson enVision pg. 373 Culminating Task: Clyde’s Construction Crew (DOE) 		

Personalized Learning and Differentiation

Teachers differentiate by providing examples (work samples or task-specific clarifications of assessment criteria); structuring support (advance organizers, flexible grouping, peer relationships); establishing flexible deadlines, and adjusting the pace.

- SWD/504- Accommodations provided
- ELL- Five Principle ELL Curriculum Framework and Vocabulary Supports
- Intervention Support- Re-teaching Activities in Small Groups with Progress Monitoring
- Extensions- Enrichment Tasks and Projects

Resources

Unit 3 DOE Frameworks