W E S T S H O R E S C H O O L D I S T R I C T

Learning Module

Title of Module	Parallel and Perpendicular Lines	**Grade Level**	9-12
Curriculum Area	Mathematics – Geometry Essentials	**Time Frame**	15 days

Desired Results

Best Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure (Deductive Reasoning)
8. Look for and express regularity in repeated reasoning.

Transfer Goals

Students will be able to independently use their learning to...

- Connect old problem solving techniques to new curriculum.
- Connect new material to real world applications.
- Create viable mathematical arguments and use them to critique the arguments of fellow classmates.

Key Learnings/Big Ideas

Students will learn to:

1) Use properties of parallel and perpendicular lines

2)Prove relationships using angle measures

3) Make connections to lines in algebra

Content and Reading and Writing Standards

Core Standards:

CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.
CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically
CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.

Essential Questions	**Vocabulary (Best Practices)** Utilize concepts & competencies to add to vocabulary

Unit EQ: How can you use the relationship created by angles formed from parallel lines and a transversal? **LEQ:** 1) What angle pairs are formed by transversals? 2) How are corresponding angles and alternate interior angles related for two parallel lines and a transversal? 3) How do you prove lines parallel? 4) How do you find the slope of a line given the coordinates of two points on the line? 5) How do you write an equation of a line?	Parallel lines Skew Lines Parallel Planes Transversal Corresponding Angles Alternate Interior Angles Alternate Exterior Angles Consecutive Interior Angles Slope Slope-Intercept Form Point-Slope Form Standard Form
Concepts Students will know…	**Skills/Competencies (I Can…) Based on LEQs** Students will be able to…
1) the angle relationships formed from two parallel lines and a transversal. 2) how to prove that two lines are parallel. 3) how to determine if two lines are parallel, perpendicular or neither. 4) how to write the equation of a line. 5) how to find slope.	1) find the value of a variable based on the relationship formed between two angles created by parallel lines and a transversal. 2) prove lines are parallel using an angle relationship to write and solve an algebraic equation. 3) use the slope formula to determine if two lines are parallel, perpendicular or neither. 4) write the equation of a line in slope-intercept form and point-slope form when given two points on the line. 5) use the slope formula to find the slope of a line.

Assessment Evidence

Formative Assessment
Questioning, Think Pair Share, Graphic Organizers, Visual Representations, Bell Ringers, Exit Slips, Web Based Surveys
Summative Assessment
Common Assessments
Best Instructional Practices

Subject Specific Best Practices (example: Science Processes)
DO NOT DO- Dr. Whye will fill this in...
Extended Thinking
Summarizing
Vocabulary in Context
Advance Organizers
Non-verbal Representation

Integration of Webb's Depth (examples)

Integration of 21st Century Skills (examples)

Reading and writing across disciplines (examples)

Differentiated options (examples)

Resources

Student	Teacher

Adapted from Wiggins, Grant and J. Mc Tighe. (1998). Understanding by Design, Association for Supervision and Curriculum Development, ISBN # 0-87120-313-8 (ppk)