Marietta City Schools

2024–2025 District Unit Planner

Grade 8 Honors Mathematics

Unit title	Unit 3: Investigating Data and Statistical Reasoning	**MYP year**	3	**Unit duration (hrs)**	*MMS- (4.5 hours per week)*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): ***What will students learn?***

Georgia K-12 Standards

Standards

8.FGR.6: Solve practical, linear problems involving situations using bivariate quantitative data.

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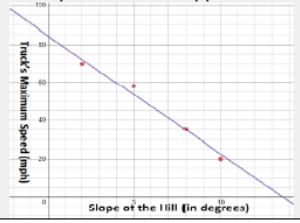
Expectations		**Evidence of Student Learning** (not all inclusive; see Grade Level Overview for more details)		
8.FGR.6.1	Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit.	***Strategies and Methods*** • Students should discover the line of best fit as the one that comes closest to most of the data points.	***Terminology*** • The line of best fit shows the linear relationship between two variables in a data set.	***Example*** • Given a set of data points, a student creates a scatter plot (see below), approximates a line of best fit, and writes the equation for the approximated line. 

8.FGR.6.2	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts.	***Strategies and Methods*** • Students should solve practical, linear problems involving situations using bivariate quantitative data.	***Terminology*** • A linear model shows the relationship between two variables in a data set, such as lines of best fit.
8.FGR.6.3	Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data.	***Terminology*** • It is important to indicate 'predicted' to indicate this is a *probabilistic* interpretation in context, and not *deterministic*.	***Example*** • In a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.
8.FGR.6.4	Use appropriate graphical displays from data distributions involving lines of best fit to draw informal inferences and answer the statistical investigative question posed in an unbiased statistical study.	***Fundamentals*** • Students should be given opportunities to analyze the data distribution displayed graphically to answer the statistical investigative question generated from a realistic situation.	

8.MP: Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals.

Concepts/Skills to support mastery of standards

- 8.FGR.6.1- Construct a Scatter Plot
- 8.FGR.6.1- Visually fit a straight line with the closeness of data points (line of best fit)
- 8.FGR.6.2- Use an equation of a linear model
- 8.FGR.6.2- Interpret a slope and intercept
- 8.FGR.6.3- Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term)
- 8.FGR.6.4- Use the Line of Best Fit to draw inferences

MCS Gifted Standard:
MCS.Gifted.S1C. Gather, organize, analyze, evaluate, and synthesize data from multiple sources for research applications.

Vocabulary

K12 Mathematics Glossary

Line Best Fit	Bivariate Data	Linear Model	Slope Intercept	Y-Intercept/Constant Term	Scatter plot
Data Points	Slope/Rate of Change	Measure of center & variability	Inference	Random Sampling	Sample population
Patterns	Predicted Population				

Notation

Key concept	Related concept(s)	Global context
Logic	Generalization and Model	Identities and Relationships

Statement of inquiry

The choices we make affect our health and well-being.

Inquiry questions

Factual— What is the line of best fit? What is a scatter-plot?

Conceptual— How can you identify the best line of fit for a graph? How can you apply the line of best fit in the real world?

Debatable- Can there only be one line of best fit?

MYP Objectives	**Assessment Tasks**	
*What specific MYP **objectives** will be addressed during this unit?*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*
Criteria A (Knowing and Understanding) Criteria D (Applying Math to real-world context)	Students will demonstrate how modeling relationships can help us make logical decisions.	**Formative Assessment(s):** Unit 3 CFA **Summative Assessment(s):** Unit 3 Summative Assessment: Investigating Data and Statistical Reasoning Unit 3 Retest Unit 3 MYP Assessment: Savvas Topic 4 Performance Task, Form B, page 1 Only

Approaches to learning (ATL)
Need: Give and receive meaningful feedback **Category:** Research Skills **Cluster:** Information literacy **Skill Indicator:** Finding, interpreting, judging and creating information

Learning Experiences

Add additional rows below as needed.

Objective or Content	Learning Experiences	Personalized Learning and Differentiation
8.FGR.6: Solve practical, linear problems involving situations using bivariate quantitative data. **8.FGR.6.1** Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit. **8.FGR.6.2** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts. **8.FGR.6.3** Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data.	The Slope of a Fitted Line Learning Goals: ● I can describe and interpret the relationship between two variables using a line fit to data on a scatter plot. ● I can interpret the slope of a line fit to data in context. ● I can create an equation based on a given line fit to data in context. https://lor2.gadoe.org/gadoe/file/36615fbb-b966-4b4c-8fdd-1fb010752013/1/The-Slope-of-a-Fitted-Line-Learning-Plan-Grade-8-U3.pdf (teacher's guide) https://lor2.gadoe.org/gadoe/file/36615fbb-b966-4b4c-8fdd-1fb010752013/1/The-Slope-of-a-Fitted-Line-Student-8U3.pdf (student document)	In this learning plan, students will interpret the slope of scatter plots to identify positive and negative associations of the data points.

Content Resources
SAVVAS Math 8 Correlation Document.pdf (see page 8-12) SAVVAS Lessons ● Lesson 4-1 (Construct and Interpret Scatterplots) ● Lesson 4-2 (Analyze Linear Relationships) ● Lesson 4-3 (Use Linear Models to Make Predictions)