Performance Based Learning and Assessment Task

Tuition Cost Activity

I. ASSESSSMENT TASK OVERVIEW & PURPOSE:

This performance based learning and assessment task challenges students to estimate the cost of college tuition in 2025 by investigating the relationship between school year and tuition cost. It is an activity planned to give students an opportunity to design research methodology, collect and analyze data, and calculate an equation for the line or curve of best fit in order to make predictions in a real-world context. Additionally, students will have an opportunity to interpret results and discuss mathematical model limitations.

II. UNIT AUTHOR:

Emily O'Rourke, Northside High School, Roanoke County Public Schools

III. COURSE:

Algebra 1

IV. CONTENT STRAND:

Data Analysis

V. OBJECTIVES:

The learner will be able to:

- Design research methodology
- Collect and analyze data
- Determine the equation for the line or curve of best fit
- Interpret a line or curve of best fit
- Make predictions and solve real-world problems using a mathematical model
- Discuss limitations of mathematical models
- Present, organize, and communicate results

VI. REFERENCE/RESOURCE MATERIALS:

Students will need access to a computer with Internet access, class notes, a writing utensil, a "Tuition Cost Activity" packet, and a graphing calculator.

VII. PRIMARY ASSESSMENT STRATEGIES:

The task includes an assessment component that performs two functions: (1) for the student it will be a checklist and provide a self-assessment and (2) for the teacher it will be used as a rubric. Students will be assessed on their methodology, data collection, and calculation of a mathematical model that best fits their data. Furthermore, the students will be evaluated on their graphical display, 2025 tuition cost prediction, preparation of their presentation, and how effectively they communicate their conclusions and mathematical model limitations. In final, the students will be assessed on their participation and self-evaluation.

VIII. EVALUATION CRITERIA:

A self-assessment and a teacher assessment are attached below. A benchmark is also included at the end of the document in order to demonstrate the level of quality that is expected from each group of students.

IX. INSTRUCTIONAL TIME:

The performance task should take no longer than three ninety-minute blocks. The first block should be used to brainstorm research methodology, collect data, and create a scatterplot. The second block should be used to calculate, graph, and interpret a model for the data, and discuss mathematical model limitations. Student groups should also prepare to present results. The third block should be used for student groups to present conclusions and model limitations to the class.

Tuition Cost Activity

Strand
Data Analysis

Mathematical Objective(s)
The mathematical objectives for this activity are to give students the opportunity to collect and analyze data, determine an equation for the line or curve of best fit in order to make predictions in a real-world context, and interpret mathematical models and discuss their limitations.

Related SOL
A.11 The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear functions and quadratic functions.

A.7def The student will investigate and analyze function families and their characteristics both algebraically and graphically, including y-intercepts, finding the value of a function for an element in its domain, and making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic.

AFDA.3 The student will collect data and generate an equation for the curve of best fit to model real-world problems or applications. Students will use the best-fit equation to interpolate function values, make decisions, and justify conclusions with algebraic and/or graphical models.

AFDA.4 The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words. Students will select and use appropriate representations for analysis, interpretation, and prediction.

NCTM Standards
- Apply and adapt a variety of appropriate strategies to solve problems
- Model and solve contextualized problems using various representations, such as graphs, tables, and equations
- For bivariate measurement data, be able to display a scatterplot and determine regression equations using technological tools
- Make conjectures about possible relationships between two characteristics of a sample on the basis of scatterplots of the data and approximate lines of fit
- Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope
- Develop and evaluate inferences and predictions based on data
- Communicate mathematical thinking coherently and clearly to peers, teachers, and others

Materials/Resources
Students will need access to the Internet in order to research and design an analysis of school year and tuition cost. Students will also need the Internet to collect data and research mathematical model

limitations. Additionally, student groups will be asked to create a final PowerPoint presentation. Students will need class notes to clarify how to compare bivariate data, how to graph bivariate data, and how to determine an equation for the line or curve of best fit in order to make future predictions. Additionally, class notes may need to be consulted in order to interpret the coefficient(s) and constant of mathematical models in a real-world context. Students will use a graphing calculator or Excel to graph the bivariate data and fit a model to the data. Finally, students will use a writing utensil to complete a data sheet from the "Tuition Cost Activity" packet each day to ensure all objectives are met according to the three-block timeline.

Assumption of Prior Knowledge

- Students should understand what bivariate data is, how to collect it, and how to analyze it. Students should have a basic understanding of how to visually represent bivariate data using a scatterplot. Additionally, students should have an idea of how to calculate an equation that best fits their data and how to use it in order to make predictions and solve real-world problems. Students will also need to be able to interpret the coefficient(s) and constant of a mathematical model in a real-world context.
- The real-world context of this activity centers on college tuition and students should be operating on the Synthesis & Evaluation level on the Van Hiele scale with respect to making predictions and evaluating results. Students may have difficultly interpreting the mathematical model. The teacher may need to provide support to encourage students to think more critically about the interpretation of the coefficient(s) and the constant in a real-world context. Furthermore, teachers may need to provide additional guidance when students are attempting to discuss mathematical model limitations.

Introduction: Setting Up the Mathematical Task

In this activity, you will estimate the cost of college tuition in 2025. The Tuition Cost Activity should take no longer than three ninety-minute blocks.

At this point, the teacher should ask the students, "How many students remember what bivariate data is?" After allowing the students time to think and respond, the teacher should provide an example of a bivariate dataset. For example, the teacher could display a table of college GPAs versus SAT scores. This would also be an ideal time to review interpreting the constant and the coefficient(s) of a mathematical model if necessary. Students should then be placed in groups of two or three by the teacher in order to produce workable, productive groups. Next, the teacher should pose the following questions in order to facilitate a discussion:

- What other way(s) can you think of to display bivariate data?
  Possible Answer: A Scatterplot
- What relationship would you intend to see between the data?
  Possible Answer: A moderately strong, positive relationship
- How could you predict a student's GPA given their SAT score (do not actually work out the problem)?
  Possible Answer: Calculate a Line of Best Fit using a graphing calculator
- Challenge Question (time permitting): When could rounding impact our predictions?
  Possible Answer: If the coefficients and/or constant are large

Allow the groups time to collaborate in between each question. The teacher at this time should be assessing the overall effectiveness of each group. Teachers should rearrange the groups as necessary. If a group finishes discussing a question early, the teacher should challenge the group with the next question or have the group begin brainstorming their research methodology for the Tuition Cost Activity. For the Tuition Cost Activity, students will be collecting data in order to estimate the tuition cost in 2025.

If you would like to increase the rigor of this activity, challenge your students to introduce a third categorical variable (i.e. In-state versus Out-Of-State, Undergraduate versus Graduate, etc.). Therefore, students would need to create two datasets and calculate, interpret, and compare two mathematical models. If time permits, students could also be challenged to explore the fit of other polynomial functions and/or the exponential function to their data.

Lastly, the groups will obtain a detailed timeline of what is expected. The students will have five minutes to read through the instructions and discuss them amongst themselves. After five minutes, the teacher should hold a five-minute question and answer session prior to allowing the groups to get started with designing their study and collecting their data. The detailed timeline of what is required is included below:

Block 1:

- **Teacher Introduction (30 minutes)**
- **Design the study (15 minutes)**
  - Your group should create a title for your research.
  - Describe what independent and dependent variables you will use. This is also the point that groups should discuss if they will consider a third categorical variable.
  - Your group must construct 3-5 sentences on your data sheet discussing your research design and how you plan to predict the tuition cost in 2025. Your group should also hypothesize what relationships you intend to see.

    Prior to collecting data, verify your research design with your teacher.
- **Collect your data (30 minutes)**
  - Use your computer to gather the data. You must cite your source(s).
  - You must include at least eight data points in your dataset.
  - Each group must place their data into the table provided and label the variables.
- **Graph your data (15 minutes)**
  - Each group must appropriately display their data and include a descriptive title and appropriate axes labels. The only tools you are permitted to use are a graphing calculator or Excel.

    Each group must turn in their data sheet #1 by the end of the block.

Block 2:

- **Calculate and justify a mathematical model (15 minutes)**
  - Each group must calculate and justify an appropriate model for their data. Again, the only tools you are permitted to use are a graphing calculator or Excel.
  - Your group should record the equation. Round your numbers to the nearest hundredth.
  - Each group must represent their model on their graphical display.
- **Interpret the mathematical model (25 minutes)**
  - Each group must use the data sheet to interpret the independent variable, dependent variable, constant, and coefficient(s) of their model.
- **Estimate the tuition cost in 2025 (10 minutes)**
  - Each group must estimate, interpret, and record the tuition cost in 2025.
- **Discuss the limitations of the mathematical model (20 minutes)**
  - Each group must list at least 5 limitations of their model on their data sheet. A computer may be used to research limitations as long as resources are cited.
- **Prepare the presentation (20 minutes)**
  - Each presentation must be eight to ten minutes long.
  - Using complete sentences, each group should present their conclusion to the research question and discuss how it compared to their hypothesis.
  - Using complete sentences, each group should present their mathematical model, analysis of their model, and model limitations.
  - Using complete sentences, each group should also present one thing they learned, one thing that proved to be difficult, and one thing they considered fun while conducting the study.

    Each group must turn in their data sheet #2 by the end of the block.

Block 3:

- **Presentation (8-10 minutes each)**
  - Each group will present their mathematical model, their model analysis and limitations, and their prediction of the cost of college tuition in 2025.

    Each group member must complete a self-assessment by the end of the block.

Student Exploration

Student/Teacher Actions:
Students will be collaborating in groups of two to three as determined by the teacher. The first day, the teacher will invite students to draw upon their prior knowledge by facilitating a discussion of how to compare bivariate data, graph bivariate data, and calculate and use a line or curve of best fit in order to predict values that may not be given. The teacher will explicitly state the expectations for each day and provide constructive feedback along the way. The teacher will also act as a mentor and coach as students collect data, create a table and a scatterplot, and calculate a mathematical model. Teachers will encourage students to draw on the group's knowledge first, prior to seeking out prompting from the teacher, class notes, and/or the Internet.

The teacher will also be available as students analyze their mathematical model, brainstorm model limitations, and collaborate to design a professional presentation. Students will communicate their mathematical knowledge by accurately interpreting the tuition cost in 2025 based on their mathematical model and by using appropriate vocabulary when presenting. The teacher should require each group to integrate technology when presenting to make the presentations more dynamic and unique.

Monitoring Student Responses

- Students are to communicate their thinking and their new knowledge by actively participating in each group presentation including their own. Individual group members are expected to explain at least two presentation slides.
- Students are to communicate with each other actively, respectfully, and supportively.
- Teachers are to highlight and clarify frequently asked questions to the class as they emerge and provide problem-solving strategies to groups in order to resolve difficult situations.
- Teachers should encourage all students to be engaged within their group and therefore, discourage students from moving forward without their group members. If an entire group is ready to move on, encourage the group to get a head start on the next task at hand.

Feedback of the activity is encouraged at the end of each group presentation. In order to summarize the Tuition Cost Activity, the teacher should plan to recap on the strengths and feedback from the group presentations. The teacher should also focus on how groups overcame difficult tasks and which problem-solving techniques to carry forward. Lastly, the teacher should reflect on the content knowledge that was reviewed and applied.

Assessment List and Benchmarks

Groups will complete one data sheet from the "Tuition Cost Activity" packet each day to ensure all objectives set forth are met on time. Unlike that of the group data sheets, students will individually complete a self-assessment at the end of the three-day Tuition Cost Activity. The teacher will use the same rubric to assess each student and will give extra credit for creativity and exemplary participation and effort.

Tuition Cost Activity

A.11 Data Analysis

Block 1

Names: _____

Date: _____Block: _____

Study Design

Research Title	
Independent Variable	
Dependent Variable	
Research Methodology Description	
Hypothesis	

Teacher sign-off**:** _____

Data Collection

Title:

Sources

Tuition Cost Activity

A.11 Data Analysis

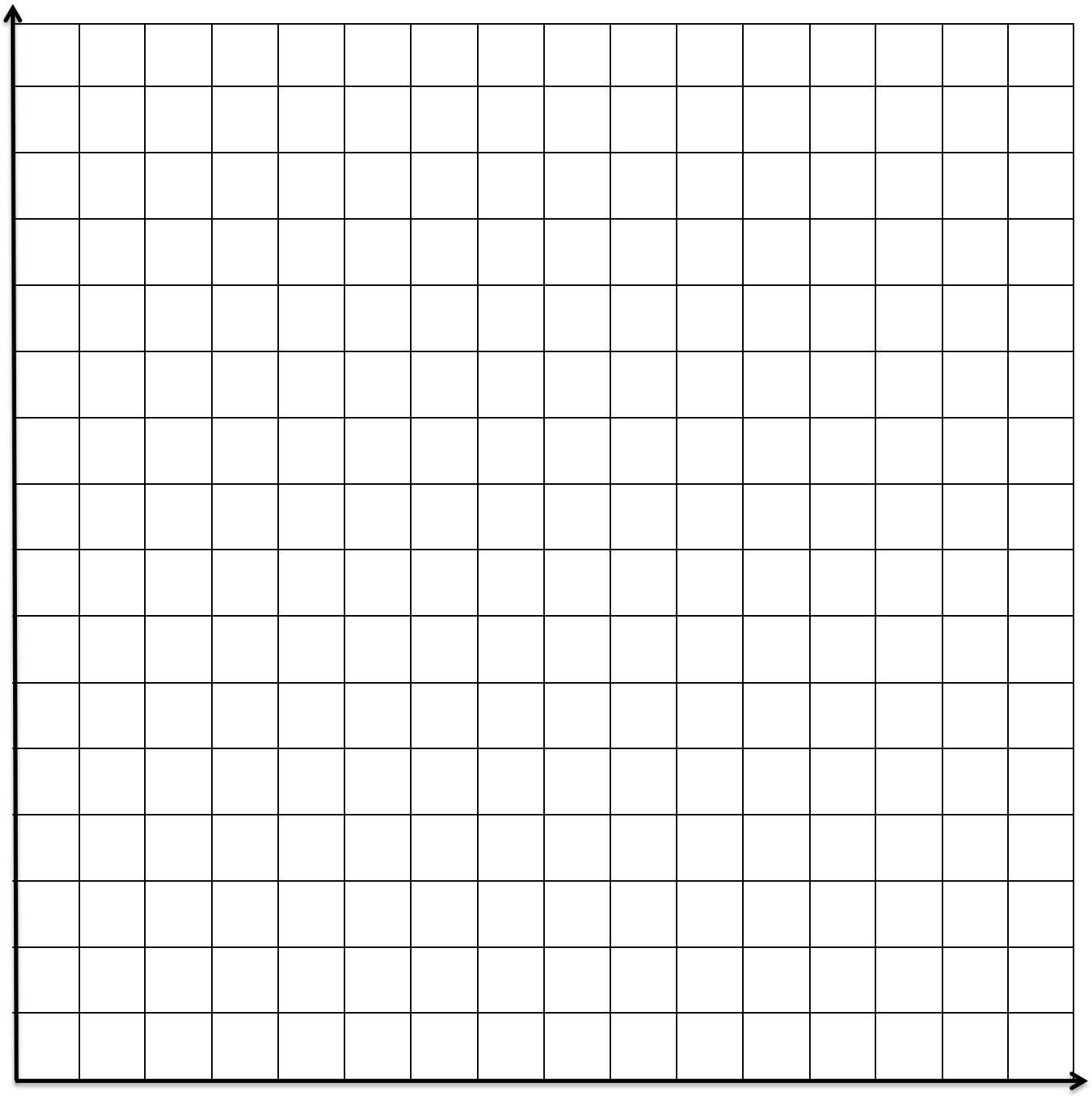
Block 1

Names: _____

Date: _____Block: _____

Graphical Display

Title:



Tuition Cost Activity

A.11 Data Analysis
Block 2

Names: _____
Date: _____Block: _____

Model Calculation:

Model Equation:

Justification:

Model Interpretation:

1. What does the independent variable represent in the equation?

2. What does the dependent variable represent in the equation?

3. Interpret the meaning of the coefficient(s) in the equation.

4. Interpret the meaning of the constant in the equation.

Tuition Cost Estimation:

5. Predict and interpret the cost of college tuition in 2025.

Model Limitations:

1.

2.

3.

4.

5.

Sources

Tuition Cost Activity

Names: _____

A.11 Data Analysis

Date: _____Block: _____

Self-Assessment

			Earned Assessment	
Num	**Element**	**Point Value**	**Self**	**Teacher**
1	The study, table, and graphical display have titles.	2		
2	The independent and dependent variables are described.	2		
3	The research method and hypothesis are stated.	2		
4	The teacher, prior to collecting data, confirmed the research design.	2		
5	The table has at least eight data values included.	2		
6	The website resources used to collect data are cited.	2		
7	An appropriate graphical display of the data is provided.	2		
8	The axes are labeled appropriately.	2		
9	Data sheet #1 is completed on time.	2		
10	The model equation is calculated, rounded, and recorded.	2		
11	The model chosen is justified.	2		
12	The model is represented on the graphical display.	2		
13	The independent variable is interpreted.	2		
14	The dependent variable is interpreted.	2		
15	The constant is interpreted.	2		
16	The coefficient(s) is interpreted.	2		
17	The tuition cost in 2025 is estimated.	2		
18	The prediction is interpreted in a real-world context.	2		
19	Five limitations are listed for the mathematical model.	2		
20	The websites used to research model limitations are cited.	2		
21	Data sheet #2 is completed on time.	2		
22	PowerPoint presentation is eight to ten minutes.	2		
23	Presentation includes the mathematical model.	2		
24	Presentation includes analysis of the mathematical model.	2		
25	Presentation includes a prediction of the tuition cost in 2025.	2		
26	Presentation includes at least five model limitations.	2		
27	The conclusion to the research hypothesis is presented.	2		
28	Presentation lists one thing learned while conducting the study.	2		
29	Presentation includes one thing that proved to be difficult while conducting the study.	2		
30	Presentation includes one fun aspect of the research project.	2		
31	Student listens during other group presentations.	2		
32	Student explains at least two presentation slides during their group presentation.	2		
33	The presentation includes complete sentences.	2		
34	The assignment materials are well organized and neat.	2		
35	Self-assessment is completed on time.	2		
	Total	70		

Tuition Cost Activity

A.11 Data Analysis

Teacher Assessment

Names: _____

Date: _____Block: _____

			Earned Assessment	
Num	**Element**	**Point Value**	**Self**	**Teacher**
1	The study, table, and graphical display have titles.	2		
2	The independent and dependent variables are described.	2		
3	The research method and hypothesis are stated.	2		
4	The teacher, prior to collecting data, confirmed the research design.	2		
5	The table has at least eight data values included.	2		
6	The website resources used to collect data are cited.	2		
7	An appropriate graphical display of the data is provided.	2		
8	The axes are labeled appropriately.	2		
9	Data sheet #1 is completed on time.	2		
10	The model equation is calculated, rounded, and recorded.	2		
11	The model chosen is justified.	2		
12	The model is represented on the graphical display.	2		
13	The independent variable is interpreted.	2		
14	The dependent variable is interpreted.	2		
15	The constant is interpreted.	2		
16	The coefficient(s) is interpreted.	2		
17	The tuition cost in 2025 is estimated.	2		
18	The prediction is interpreted in a real-world context.	2		
19	Five limitations are listed for the mathematical model.	2		
20	The websites used to research model limitations are cited.	2		
21	Data sheet #2 is completed on time.	2		
22	PowerPoint presentation is eight to ten minutes.	2		
23	Presentation includes the mathematical model.	2		
24	Presentation includes analysis of the mathematical model.	2		
25	Presentation includes a prediction of the tuition cost in 2025.	2		
26	Presentation includes at least five model limitations.	2		
27	The conclusion to the research hypothesis is presented.	2		
28	Presentation lists one thing learned while conducting the study.	2		
29	Presentation includes one thing that proved to be difficult while conducting the study.	2		
30	Presentation includes one fun aspect of the research project.	2		
31	Student listens during other group presentations.	2		
32	Student explains at least two presentation slides during their group presentation.	2		
33	The presentation includes complete sentences.	2		
34	The assignment materials are well organized and neat.	2		
35	Self-assessment is completed on time.	2		
	Total	70		

Tuition Cost Activity

Names: _____

A.11 Data Analysis

Date: _____Block: _____

Category Descriptions

#	Element	0	1	2
1	The study, table, and graphical display have titles.	No titles	Titles are incomplete	Descriptive titles provided
2	The independent and dependent variables are described.	No description	Descriptions are incomplete	Descriptions provided
3	The research method and hypothesis are stated.	No research method or hypothesis	Research method and/or hypothesis are incomplete	Research method and hypothesis provided
4	The teacher, prior to collecting data, confirmed the research design.	Did not confirm research design	Changes requested to research design.	Confirmed research design
5	The table has at least eight data values included.	No responses	Responses are incomplete	Eight responses included
6	The website resources used to collect data are cited.	No citations	Incomplete citations	Citations provided
7	An appropriate graphical display of the data is provided.	No data displayed	Data inaccurately displayed	Data accurately displayed
8	The axes are labeled appropriately.	No axes labels	Inappropriate axes labels	Axes are appropriately labeled
9	Data sheet #1 is completed on time.	No data sheet #1	Data sheet #1 is incomplete or not provided on time	Data sheet #1 completed on time
10	The model equation is calculated, rounded, and recorded.	No calculation is provided	Calculation and/or rounding is inaccurate	Calculation is rounded and accurate
11	The model chosen is justified.	No model justification	Incomplete or inaccurate model justification	Accurate model justification
12	The model is represented on the graphical display.	No model representation	Inaccurate model representation	Accurate model representation
13	The independent variable is interpreted.	No interpretation	Incomplete or inaccurate interpretation	Interpretation accurately provided
14	The dependent variable is interpreted.	No interpretation	Incomplete or inaccurate interpretation	Interpretation accurately provided
15	The constant is interpreted.	No interpretation	Incomplete or inaccurate interpretation	Interpretation accurately provided

16	The coefficient(s) is interpreted.	No interpretation	Incomplete or inaccurate interpretation	Interpretation accurately provided
17	The tuition cost in 2025 is estimated.	No estimation	Inaccurate estimation	Estimation accurately provided
18	The prediction is interpreted in a real-world context.	No interpretation	Incomplete or inaccurate interpretation	Interpretation accurately provided
19	Five limitations are listed for the mathematical model.	No limitations are listed	Limitations are incomplete or inaccurate	At least five limitations are accurately provided
20	The websites used to research model limitations are cited.	No citations	Incomplete citations	Citations provided or stated unnecessary
21	Data sheet #2 is completed on time.	No data sheet #2	Data sheet #2 is incomplete or not provided on time	Data sheet #2 completed on time
22	PowerPoint presentation is eight to ten minutes.	No presentation	Presentation is under time or over time	Presentation is between eight to ten minutes
23	Presentation includes the mathematical model.	No mathematical model	Mathematical model is incomplete	Mathematical model included
24	Presentation includes analysis of the mathematical model.	No analysis	Incomplete analysis	Analysis provided
25	Presentation includes a prediction of the tuition cost in 2025.	No prediction	Incomplete prediction	Prediction provided
26	Presentation includes at least five model limitations.	No limitations are listed	Less than five limitations are listed	At least five limitations are listed
27	The conclusion to the research hypothesis is presented.	No conclusion	Conclusion is incomplete	Conclusion provided
28	Presentation lists one thing learned while conducting the study.	Lacks something learned	Something learned is incomplete	Something learned is provided
29	Presentation includes one thing that proved to be difficult while conducting the study.	Lacks something difficult	Something difficult is incomplete	Something difficult is provided
30	Presentation includes one fun aspect of the research project.	Lacks something fun	Something fun is incomplete	Something fun is provided
31	Student listens during other group presentations.	Disrespectful	Partially disrespectful	Respectful

32	Student explains at least two presentation slides during their group presentation.	No participation	Presents less than two slides	Presents at least two slides
33	The presentation includes complete sentences.	No complete sentences	Lacks complete sentences	Includes complete sentences
34	The assignment materials are well organized and neat.	No evidence of organization or neatness	Not fully organized or neat	Well organized and neat
35	Self-assessment is completed on time.	No self-assessment	Self-assessment is incomplete or not provided on time	Self-assessment provided on time

Tuition Cost Activity

A.11 Data Analysis

Benchmark

Tuition Cost Activity
A.11 Data Analysis
Block 1

Names: Benchmark
Date: 5/26/15 Block: _____

Study Design

Research Title	Will I Be Able to Afford College?
Independent Variable	School Year
Dependent Variable	Tuition and Mandatory Fees Cost
Research Methodology Description	Our study will analyze yearly in-state college tuition. We will compare school year with the cost of college tuition for 12-credit hours. We intend to predict Virginia Tech's tuition cost in 2025 by calculating a line of best fit.
Hypothesis	We expect that the undergraduate in-state tuition cost for 12-credits at Virginia Tech will increase by 2025.

Teacher sign-off: EO'Rourke

Data Collection

Title: Undergraduate In-state Tuition Cost Per Year at Virginia Tech (12 credit hours)

School Year	Tuition & Fees
2006-2007	3,486.50
2007-2008	3,698.50
2008-2009	4,099.00
2009-2010	4,302.50
2010-2011	4,729.50
2011-2012	5254.50
2012-2013	5,461.50
2013-2014	5,727.50
2014-2015	6,242.50

Sources

http://www.bursar.vt.edu/tuition/tuition_fees_prior.php

www.bursar.vt.edu/tuition/

8

Tuition Cost Activity

A.11 Data Analysis

Benchmark

Tuition Cost Activity

A.11 Data Analysis

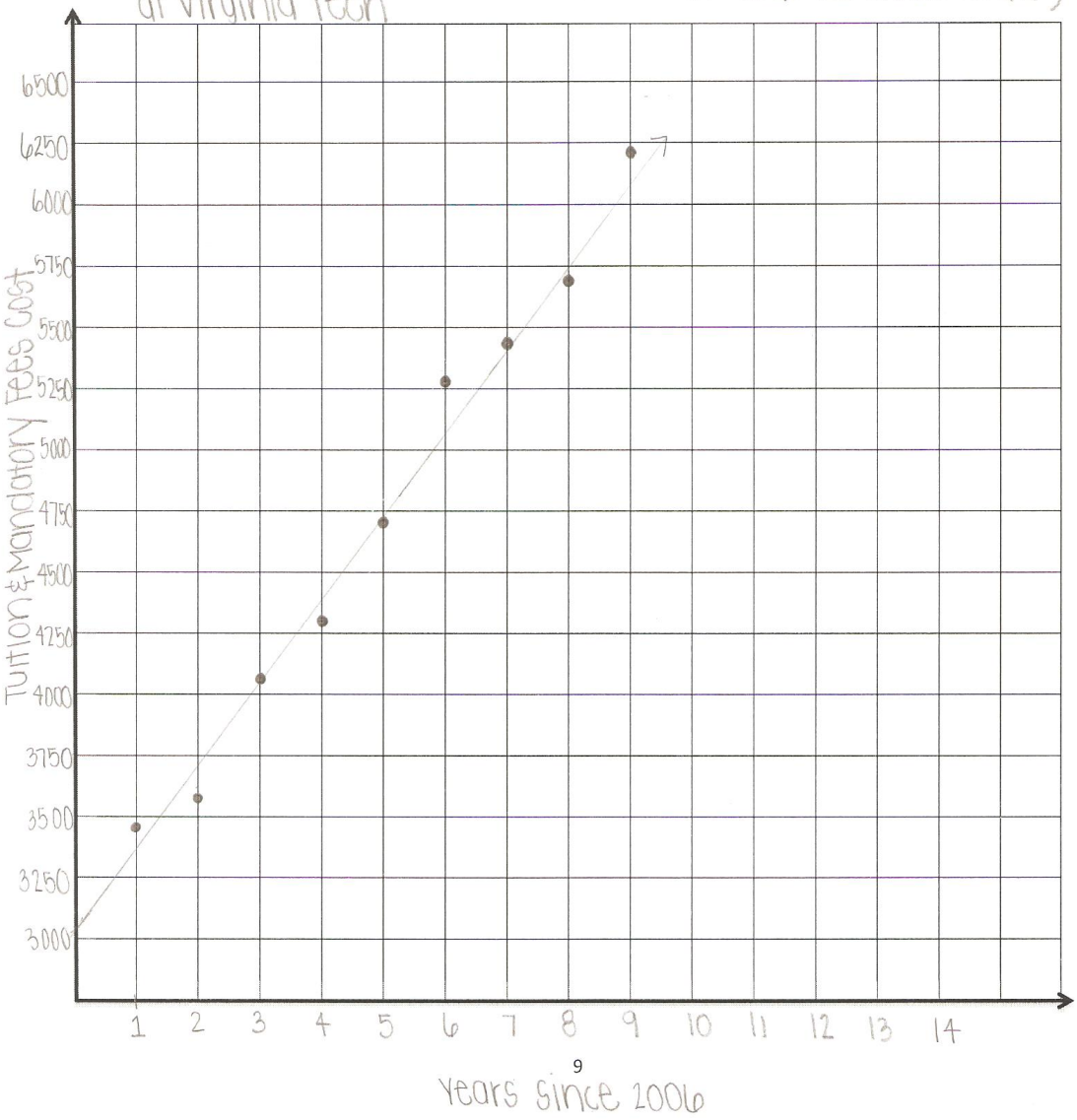
Block 1

Names: Benchmark

Date: 5/26/15 Block: _____

Graph Data

Title: Undergraduate In-State Tuition Cost Per Year (12 credit hours) at Virginia Tech



Tuition Cost Activity

A.11 Data Analysis

Benchmark

Tuition Cost Activity
A.11 Data Analysis
Block 2

Names: Benchmark
Date: 5/26/15 Block: _____

Model Calculation:

Model Equation: $y = 346.47x + 3045.67$

Justification: With an $R^2 = 0.992$, the linear model strongly fits our data.

Model Interpretation:

1. What does the independent variable represent in the equation?
   Our independent variable, x, is the school years since 2006.
2. What does the dependent variable represent in the equation?
   Our dependent variable, y, is the tuition and mandatory fees cost.
3. Interpret the meaning of the coefficient(s) in the equation.
   Our coefficient, 346.47, is our slope meaning that for every one year increase, the tuition and mandatory fees cost increases $346.47.
4. Interpret the meaning of the constant in the equation.
   Our constant, 3045.67, is our y-intercept meaning that in 2006, we would estimate the tuition and mandatory fees cost to be 3,045.67.

Tuition Cost Estimation:

5. Predict and interpret the cost of college tuition in 2025. $y = 346.47(6) + 3045.67 = \$9,628.60$
   In 2025, the cost of undergraduate tuition at Virginia Tech for 12-credits is estimated to be $9,628.60.

Model Limitations:

1. Our linear model applies to the cost of undergraduate tuition, not necessarily graduate tuition.
2. Our linear model applies to 12-credit hours and not necessarily more or less.
3. Our linear model applies to public institutions, not necessarily private.
4. Our linear model applies to in-state tuition and not necessarily out-of-state.
5. Our linear model applies to Virginia, not necessarily any other state.

Sources
No additional resources were needed.

10

Tuition Cost Activity

A.11 Data Analysis

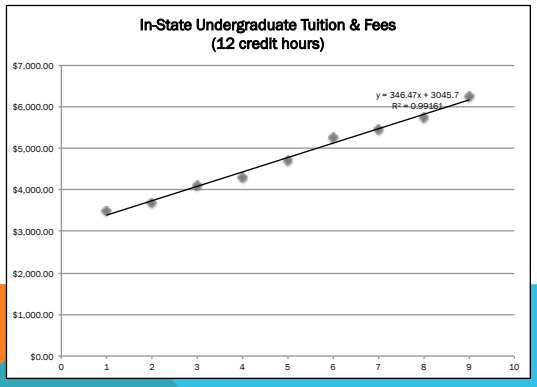
Benchmark

LINE OF BEST FIT ANALYSIS

Line of Best Fit: y = 346.47x + 3045.67

- The independent variable, x, is the number of school years since 2006.
- The dependent variable, y, is the cost of tuition & mandatory fees.
- The slope means that for every one year increase, the cost of tuition and mandatory fees increases $346.47.
- The y-intercept means that in 2006, we would estimate the cost of tuition and mandatory fees to be 3,045.67

SCATTERPLOT



PREDICTION

f(19) = 346.47(19) + 3045.67 = 9,628.60

In 2025, we expect the cost of undergraduate tuition at Virginia Tech for 12-credit hours to rise to $9,628.60.

MODEL LIMITATIONS

1. Our linear model applies to the cost of undergraduate tuition, not necessarily graduate tuition.
2. Our linear model applies to 12-credit hours, not necessarily more or less.
3. Our linear model applies to public institutions, not necessarily private.
4. Our linear model applies to in-state tuition, not necessarily out-of-state tuition.
5. Our linear model applies to Virginia, not necessarily any other state.

CONCLUSION

Our hypothesis was correct. The undergraduate in-state tuition cost for 12-credits at Virginia Tech is predicted to increase $3,386.1 from 2015 to 2025.

REFLECTION

- We learned how to use a line of best fit in order to solve a real-world problem.
- We were challenged by this activity to interpret the slope of a linear equation in a real-world context.
- We enjoyed working in a group and having the independence to collect data from any college of our choice.