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Lesson Title: 2-7 The Profit Equation or using graphs to show how you made/ are making a profit.

Date: April/May

Text: FA 2014 pg 97-102

Lesson 2-7 Length:

Domain: Number Quantities; Algebra Creating equations, Reasoning with equations and Inequalities; Functions Interpreting Functions	
Big Idea (Cluster): Reason quantitatively and use units to solve problems. Create equations that describe numbers or relationships. Solve Systems of equations. Represent and solve equations and inequalities graphically. Analyze functions using different representations	
Common Core State Standards: NQ1,2,3 Algebra CED 1,2,3 REI 7,10,11 F-IF 7a,8	
Mathematical Practice(s): All	
Content Objectives: Determine a profit equation given the expense and revenue equations. Determine the maximum profit and the price at which that maximum is attained.	Language Objectives: Interpreting data through the use a visual representations using mathematics and quadratic equations
Vocabulary: Profit, Maximum Profit	Connections Prior to Learning 2.1 - 2.4: quadratic equations: revenue (income) expense, profit
Questions to Develop Mathematical Thinking: How would you prove to someone in banking that your product is viable within the marketplace? How could you access math to prove that your company is profitable?	Common Misconceptions: Just because you have a product to sell does not mean you will make a profit. All products do not continue to make money consistently over time.

Assessment (Formative and Summative):

Formative: Question/answer (choral and individual response) exit slips, practice

Summative: Vocabulary quiz, quantitative assessment lessons 2.5-8

Materials:

graphs, excel (spreadsheets), formulae, data

Instruction Plan:

Launch: Price comparison (HD televisions from 2005 - 2013) What do you notice? What could be the cause of that finding? What are ways you could predict this?

<https://wa-appliedmath.org/>

Explore: Look at the examples on page 97. Without reading the text what inferences can you make about these graphs? Read the text and compare your inference with what the text tells you these graphs show.

When I observe students: They will be studying text and visual representations of profit/loss graphs and asking questions/making inferences about how to formulate an equation to predict profit margins and maximum profit based on the data.

Questions to Develop Mathematical Thinking as you observe: Why do you need to be concerned with profitability? How does the profitability of a company affect you or those around you (ei boeing, starbucks, mcdonalds etc...)

Answers: Ummmmm.....

Summarize: Students will perform a partner talk describing/comparing their answers to the exercise and how the exercises met/did not meet the goals for the day.

Career Application(s):

Profit/Loss, Viability, Financial assessment and trends in business practices

21st Century Skills and Interdisciplinary Themes:

<u>21st Century Interdisciplinary themes</u> (Check those that apply to the above activity.)			
Global Awareness	Financial/Economic/Business/Entrepreneurial Literacy		Civic Literacy
Health/Safety Literacy	Environmental Literacy		
LEARNING AND INNOVATION	INFORMATION, MEDIA & TECHNOLOGY SKILLS	LIFE & CAREER SKILLS	Productivity and Accountability
<u>Creativity and Innovation</u>	<u>Information Literacy</u>	<u>Flexibility and Adaptability</u>	<u>Produce Results</u>
Think Creatively	Access and Evaluate	Adapt to Change	<u>Leadership and</u>
Work Creatively with	Information	Be Flexible	<u>Responsibility</u>
Others	Use and manage	<u>Initiative and Self-Direction</u>	Guide and Lead Others
Implement Innovations	Information	Manage Goals and Time	Be Responsible to
<u>Critical Thinking and</u>	<u>Information,</u>	Work Independently	others
<u>Problem Solving,</u>	<u>Communications and</u>	Be Self-Directed	
Reason Effectively	<u>Technology (ICT Literacy)</u>	Learners	
Use Systems Thinking	Apply Technology	<u>Social and Cross-Cultural</u>	
Make Judgments and	Effectively	Interact Effectively with	
Decisions		Others	
Solve Problems		Work Effectively in	
<u>Communication and</u>		Diverse Teams	
<u>Collaboration</u>			
Communicate Clearly			
Collaborate with Others			

WAMC Lesson Plan

