

Name(s): gerald carrell

Lesson Title: 2-5 Graphs of Expenses and Revenue Functions or

*Showing income and expenses with graph paper or a spreadsheet*

Date: April/May

Text: 86 - 90

Lesson Length:

Domain: Qualities: Seeing Structure in Expressions: Creating Equations: Reasoning with Equations and Inequalities: Interpreting Functions	
Big Idea (Cluster): Reason quantitatively and use units to solve problems: Interpret the Structure of Expressions: Write expressions in equivalent forms to solve problems: Create equations that describe numbers or relationships: Solve Equations and Inequalities in one variable: Represent and solve equations and inequalities graphically: Analyze functions using different representations	
Common Core State Standards: NQ1,2,3 Algebra SSE 1 CED 2,3 REI 4b,10 F-IF 7a,8	
Mathematical Practice(s): Quadratic equations	
Content Objectives: Write graph and interpret the expense function, write graph and interpret the revenue function, Identify the points of intersection of the expense and revenue function, Identify break-even points and explain them in the context of the problem.	Language Objectives: Evaluate, explain and interpret data
Vocabulary: Nonlinear function, second-degree equation. quadratic equation, parabola, leading coefficient, maximum values, vertex of a parabola, axes of symmetry.	Connections Prior to Learning 2.1 - 2.4: quadratic equations: revenue (income) expense, profit
Questions to Develop Mathematical Thinking:	Common Misconceptions: Not every point on the parabola would give you a viable business solution.

Assessment (Formative and Summative):

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

Summative: Vocabulary quiz, quantitative assessment

Materials:

graphs, excel (spreadsheets), formulae

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Instruction Plan:

Launch: Guiding question: when would loosing money be an option for a business.
Explore: If you created a product that lost money how would you plan for a break-even point
When I observe students:
Questions to Develop Mathematical Thinking as you observe: Tell me how this is relevant to remaining viable and profitable over the long term (short term)? What shape represents viability, failure? How can you change your parabola? (inversion)
Answers: Ummmmm.....
Summarize: Have a student summarize discussion or restate the guiding question

Career Application(s):

Profit/Loss, Viability, Financial assessment and trends in business practices
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21<sup>st</sup> Century Skills and Interdisciplinary Themes:

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

## WAMC Lesson Plan

WAMC Lesson Form Revised 2/23/13

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