

CURRICULUM

FOR

AP MICROECONOMICS

GRADES 10-12

This curriculum is part of the Educational Program of Studie

s of the Rahway Public Schools

ACKNOWLEDGMENTS

Dr. Leslie Septor, Program Supervisor of Literacy/Social Studies

Mrs. Stephanie Holobinko, Program Supervisor of ESL/Bilingual/Assessment

The Board acknowledges the following who contributed to the preparation of this curriculum.

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Dr. Tiffany Lynch-Bear, Director of Curriculum and Instruction

Subject/Course Title:
AP Microeconomics
Grades 10-12

Date of Board Adoptions:
New - June 28, 2016
Revised – October 13, 2020

PACING GUIDE

Unit	Title	Pacing
Unit 1	Basic Economic Concepts	5 weeks
Unit 2	Supply and Demand	6 weeks
Unit 3	Production, Cost, and the Perfect Competition Model	6 weeks
Unit 4	Imperfect Competition	7 weeks
Unit 5	Resource Markets	6 weeks
Unit 6	Market Failure and the Role of Government	6 weeks
Unit 7	The Design of the Tax System	4 weeks

ACCOMMODATIONS

<p>504 Accommodations:</p> <ul style="list-style-type: none"> • Provide scaffolded vocabulary and vocabulary lists. • Provide extra visual and verbal cues and prompts. • Provide adapted/alternate/excerpted versions of the text and/or modified supplementary materials. • Provide links to audio files and utilize video clips. • Provide graphic organizers and/or checklists. • Provide modified rubrics. • Provide a copy of teaching notes, especially any key terms, in advance. • Allow additional time to complete assignments and/or assessments. • Provide shorter writing assignments. • Provide sentence starters. • Utilize small group instruction. • Utilize Think-Pair-Share structure. • Check for understanding frequently. • Have student restate information. • Support auditory presentations with visuals. • Weekly home-school communication tools (notebook, daily log, phone calls or email messages). • Provide study sheets and teacher outlines prior to assessments. • Quiet corner or room to calm down and relax when anxious. • Reduction of distractions. • Permit answers to be dictated. • Hands-on activities. • Use of manipulatives. • Assign preferential seating. • No penalty for spelling errors or sloppy handwriting. • Follow a routine/schedule. • Provide student with rest breaks. • Use verbal and visual cues regarding directions and staying on task. • Assist in maintaining agenda book. 	<p>IEP Accommodations:</p> <ul style="list-style-type: none"> • Provide scaffolded vocabulary and vocabulary lists. • Differentiate reading levels of texts (e.g., Newsela). • Provide adapted/alternate/excerpted versions of the text and/or modified supplementary materials. • Provide extra visual and verbal cues and prompts. • Provide links to audio files and utilize video clips. • Provide graphic organizers and/or checklists. • Provide modified rubrics. • Provide a copy of teaching notes, especially any key terms, in advance. • Provide students with additional information to supplement notes. • Modify questioning techniques and provide a reduced number of questions or items on tests. • Allow additional time to complete assignments and/or assessments. • Provide shorter writing assignments. • Provide sentence starters. • Utilize small group instruction. • Utilize Think-Pair-Share structure. • Check for understanding frequently. • Have student restate information. • Support auditory presentations with visuals. • Provide study sheets and teacher outlines prior to assessments. • Use of manipulatives. • Have students work with partners or in groups for reading, presentations, assignments, and analyses. • Assign appropriate roles in collaborative work. • Assign preferential seating. • Follow a routine/schedule.
<p>Gifted and Talented Accommodations:</p> <ul style="list-style-type: none"> • Differentiate reading levels of texts (e.g., Newsela). • Offer students additional texts with higher lexile levels. • Provide more challenging and/or more supplemental readings and/or activities to deepen understanding. • Allow for independent reading, research, and projects. • Accelerate or compact the curriculum. • Offer higher-level thinking questions for deeper analysis. • Offer more rigorous materials/tasks/prompts. • Increase number and complexity of sources. • Assign group research and presentations to teach the class. • Assign/allow for leadership roles during collaborative work and in other learning activities. 	<p>ELL Accommodations:</p> <ul style="list-style-type: none"> • Provide extended time. • Assign preferential seating. • Assign peer buddy who the student can work with. • Check for understanding frequently. • Provide language feedback often (such as grammar errors, tenses, subject-verb agreements, etc...). • Have student repeat directions. • Make vocabulary words available during classwork and exams. • Use study guides/checklists to organize information. • Repeat directions. • Increase one-on-one conferencing. • Allow student to listen to an audio version of the text. • Give directions in small, distinct steps. • Allow copying from paper/book. • Give student a copy of the class notes. • Provide written and oral instructions. • Differentiate reading levels of texts (e.g., Newsela). • Shorten assignments. • Read directions aloud to student. • Give oral clues or prompts.

- Record or type assignments.
- Adapt worksheets/packets.
- Create alternate assignments.
- Have student enter written assignments in criterion, where they can use the planning maps to help get them started and receive feedback after it is submitted.
- Allow student to resubmit assignments.
- Use small group instruction.
- Simplify language.
- Provide scaffolded vocabulary and vocabulary lists.
- Demonstrate concepts possibly through the use of visuals.
- Use manipulatives.
- Emphasize critical information by highlighting it for the student.
- Use graphic organizers.
- Pre-teach or pre-view vocabulary.
- Provide student with a list of prompts or sentence starters that they can use when completing a written assignment.
- Provide audio versions of the textbooks.
- Highlight textbooks/study guides.
- Use supplementary materials.
- Give assistance in note taking
- Use adapted/modified textbooks.
- Allow use of computer/word processor.
- Allow student to answer orally, give extended time (time-and-a-half).
- Allow tests to be given in a separate location (with the ESL teacher).
- Allow additional time to complete assignments and/or assessments.
- Read question to student to clarify.
- Provide a definition or synonym for words on a test that do not impact the validity of the exam.
- Modify the format of assessments.
- Shorten test length or require only selected test items.
- Create alternative assessments.
- On an exam other than a spelling test, don't take points off for spelling errors.

RAHWAY PUBLIC SCHOOLS CURRICULUM

UNIT OVERVIEW

Content Area: AP Microeconomics

Unit Title: Unit 1 Basic Economic Concepts

Target Course/Grade Level: Grades 11-12

Unit Summary: The foundational economic ideas addressed in this unit form the basis for the more advanced analysis of consumer and producer behavior that will be developed throughout the course. Students will learn how economists approach problems and how individuals and countries gain from trade. Students will study the theory of comparative advantage and learn how it explains the benefits of economic interdependence. Students will learn how rational economic decisions require the evaluation of costs and benefits and apply that understanding to determine the optimal level at which to pursue an activity based on marginal analysis.

Approximate Length of Unit: 5 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconEM.2.c: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconET.3. a: Relate the wealth of natural resources to the economic development of the United States and to the quality of life of individuals.

6.1.12. EconGE.3. a: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconNE.3. a: Evaluate the impact of education in improving economic opportunities and in the development of responsible citizens.

6.1.12. EconET.8. a: Relate social, cultural, and technological changes in the interwar period to the rise of a consumer economy and the changing role and status of women. Advancements in technology and investments in capital goods and human capital increase economic growth and standards of living.

6.1.12. EconET.11.a: Evaluate the shift in economic resources from the production of domestic to military goods during World War II in terms of opportunity costs and trade-offs and analyze the impact of the post-war shift back to domestic production.

6.1.12. EconNM.11. a: Analyze how scientific advancements, including advancements in agricultural technology, impacted the national and global economies and daily life.

6.1.12. EconNE.12. a: Assess the impact of agricultural innovation on the world economy.

6.1.12. EconEM.12. a: Assess the role of the public and private sectors in promoting economic growth and ensuring economic stability.

6.1.12. EconNE.13. a: Relate American economic expansion after World War II to increased consumer demand. Since most choices involve a little more of one thing and a little less of something else, economic decision making includes weighing the additional benefit of the action against the additional cost.

6.1.12. EconEM.14. a: Relate the changing manufacturing, service, science, and technology industries and educational opportunities to the economy and social dynamics in New Jersey.

6.1.12. EconNE.16. b: Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations.

6.2.12. EconET.3. a: Determine how, and the extent to which, scientific and technological changes, transportation, and new forms of energy brought about social, economic, and cultural changes in the world.

6.2.12. EconET.3. b: Compare the characteristics of capitalism, socialism, and communism to determine why each system emerged and its success in leading to economic growth and stability.

6.2.12. EconET.5. a: Compare and contrast free market capitalism and Western European democratic socialism with Soviet communism.

Career Readiness, Life Literacies, and Key Skills:

9.1.12.CFR.4: Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures. **9.1.12.EG.5:** Relate a country's economic system of production and consumption to building personal wealth, the mindset of social comparison, and achieving societal responsibilities.

9.1.2.CAP.3: Define entrepreneurship and social entrepreneurship.

9.4.12.DC.1: Explain the beneficial and harmful effects that intellectual property laws can have on the creation and sharing of content (e.g., 6.1.12.CivicsPR.16.a).

Interdisciplinary Connections and Standards:

MA.N-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

MA.N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

MA.A-REI.D.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

MA.F-IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.

MA.F-IF.C.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

MA.F-LE.A.1b - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

MA.F-LE.A.1c - Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3. Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

RH.11-12.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, qualitatively, as well as in words) in order to address a question or solve a problem.

RH.11-12.9. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

Unit Understandings:

Students will understand that...

- Most resources are scarce, and in most cases the use of resources involves constraints and trade-offs.
- Resource allocation is significantly influenced by the economic system adopted by society, such as command economy, market economy, or mixed economy.
- The consequences of scarcity can be mitigated through specialization in production and by exchange.
- Rational economic decisions require the evaluation of costs and benefits.
- To determine the optimal level at which to pursue an activity whose total benefits exceed total cost, rational decision makers compare marginal benefits and marginal costs.
- Marginal analysis involves comparing the additional benefit of increasing a given activity with the additional cost.
- The optimal quantity is achieved when the marginal benefit is equal to the marginal cost or where total benefit is maximized.

Unit Essential Questions:

- How do individuals and economies confront the problem of scarcity?
- Why do people and countries trade with one another?
- Why do all decisions have costs?
- Why do people consider the additional costs and benefits of possible actions rather than just the total costs and benefits when making decisions?
- How do rational consumers make decisions using marginal benefits and marginal costs?

Knowledge and Skills:

Students will know....

- Economic trade-offs arise from the lack of sufficient resources to meet society's wants and needs. □ Resource allocation is significantly influenced by the economic system adopted by society.
- The Production Possibilities Curve is a model to show the trade-offs associated with allocating resources.
- Absolute and comparative advantage are key concepts that allow an individual, business, or country to determine relative productivity and determine the terms of trade for mutually beneficial trade.

- Total net benefits are maximized at the optimal choice.
- Consumers allocate their limited income to purchase the combination of goods that maximizes their utility by comparing the marginal utility of the last dollar spent on each good.
- Comparing marginal benefit with marginal cost helps individuals and firms decide whether to increase, decrease or maintain their consumption and production levels.

Students will be able to ...

- Define resources and the causes of their scarcity.
- Explain how resource allocation is influenced by the economics system adopted by society.
- Define and explain using graphs how the production possibilities curve illustrates opportunity costs, tradeoffs, inefficiency, efficiency, and economic growth or contractions.
- Calculate opportunity cost.
- Draw and explain an accurately labeled production possibilities curve.
- Determine, using data from production possibilities curves and tables, absolute and comparative advantage, and mutually beneficial terms of trade.

<i>EVIDENCE OF LEARNING</i>

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)

AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.

Student Progress Checks on College Board AP Classroom.

Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.

Students will draw, interpret, label, and analyze graphs and analyze data in order to describe and demonstrate concepts.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Graph and switch- Pair students and read a scenario. Instruct students to draw a graph to represent the situation. Have students share their graphs with their partner and provide feedback to each other.

Authentic tasks- assign students to investigate the total costs and benefits of the decision to pursue a college degree. Have students evaluate whether that decision makes sense by comparing total benefits and total costs.

Simulation and debriefing- Students consume an additional unit of a good such as water and record the utility of consuming each additional unit on a scale of 1-10. Debrief the activity as a class to connect the experience to the concepts of marginal decision making and diminishing marginal utility.

Simulation and debriefing- Give students different items and have students value their item on a scale of 1-10. Students are given the opportunity to trade items and revalue the items after trade. Debrief and have students explain how trade increases value.

RESOURCES

Teacher Resources:

Textbook-Mankiw, Principles of Microeconomics, 7th ed.

Supplemental materials:

Advanced Placement Economics (National Council on Economic Education)

Krugman, Economics for AP, 2nd ed.

Planet Money Podcast (NPR)

Instructional videos (College Board, Khan Academy, ACDC Econ)

AP Classroom Microeconomics <https://apcentral.collegeboard.org/>

Equipment Needed:

Chromebooks

Laptop

LCD Projector

Document Camera

RAHWAY PUBLIC SCHOOLS CURRICULUM TEMPLATE

UNIT OVERVIEW TEMPLATE

Content Area: AP Microeconomics

Unit Title: Unit 2 Supply and Demand

Target Course/Grade Level: Grades 11-12

Unit Summary: This unit introduces the supply and demand model that provides the foundation for understanding how markets work. Students will learn how the market forces of supply and demand make the economy function by coordinating interdependent economic factors that influence consumer behavior, and understand how those factors determine market prices and result in the most efficient allocation of scarce resources. In addition, students will explore the effects of government policy on market outcomes.

Approximate Length of Unit: 6 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconET.3. a: Relate the wealth of natural resources to the economic development of the United States and to the quality of life of individuals.

6.1.12. EconGE.3. a: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconEM.5. a: Assess the impact of governmental efforts to regulate industrial and financial systems in order to provide economic stability.

6.1.12. EconEM.6. a: Determine how supply and demand influenced price and output during the Industrial Revolution. Governments and financial institutions influence monetary and fiscal policies.

6.1.12. EconNM.11. a: Analyze how scientific advancements, including advancements in agricultural technology, impacted the national and global economies and daily life.

6.1.12. EconNE.12. a: Assess the impact of agricultural innovation on the world economy.

6.1.12. EconEM.12. a: Assess the role of the public and private sectors in promoting economic growth and ensuring economic stability.

6.1.12. EconGE.16. a: Use quantitative data and other sources to assess the impact of international trade, global business organizations, and overseas competition on the United States economy and workforce.

6.1.12. EconNE.16. b: Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations.

- 6.2.12. EconET.3. a: Determine how, and the extent to which, scientific and technological changes, transportation, and new forms of energy brought about social, economic, and cultural changes in the world.
- 6.2.12. EconET.5. a: Compare and contrast free market capitalism and Western European democratic socialism with Soviet communism.
- 6.2.12. EconGE.6. a: Evaluate efforts of governmental, non-governmental, and international organizations to address economic imbalances, social inequalities, climate change, health and/or illiteracy.

Career Readiness, Life Literacies, and Key Skills:

- 9.1.12.CFR.4:** Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.
- 9.1.12.EG.3:** Explain how individuals and businesses influence government policies.
- 9.1.12.EG.4:** Explain the relationship between your personal financial situation and the broader economic and governmental policies.
- 9.1.12.EG.5:** Relate a country's economic system of production and consumption to building personal wealth, the mindset of social comparison, and achieving societal responsibilities.

Interdisciplinary Connections and Standards:

- MA.N-Q.A.1** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- MA.N-Q.A.2** Define appropriate quantities for the purpose of descriptive modeling.
- MA.A-REI.A** Understand solving equations as a process of reasoning and explain the reasoning
- MA.A-REI.D.10** Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
- MA.F-IF.B.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
- MA.F-IF.C.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
- MA.F-LE.A.1a** - Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
- MA.F-LE.A.1b** - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
- MA.F-LE.A.1c** Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
- MA.F-IF.B.6** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
- MA.F-BF.B.4b** Verify by composition that one function is the inverse of another.
- MA.8.EE.B.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways
- MA.F-LE.A.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3- Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.9. Draw evidence from informational texts to support analysis, reflection, and research.

Unit Understandings:

Students will understand that...

- Individuals and firms respond to incentives and face constraints.
- Supply and demand together set the price of a good and the quantity supplied.
- Prices play a key role in allocating resources in a market economy.
- Although equilibria are stable, an economy can move from one equilibrium to another if market conditions change.
- Elasticity measures the responsiveness of buyer and sellers to variables such as prices and income.
- The concept of elasticity allows us to make quantitative observations about the impact of changes in supply and demand on equilibrium prices and quantities.
- Government policies influence consumer and producer behavior and therefore affect market outcomes.

Unit Essential Questions:

- What determines the market price for a good or service?
- What causes market prices to change?
- How do supply and demand determine the price of a good and the quantity sold?
- What is elasticity?
- How is price elasticity of demand related to revenue and expenditure?
- How does government policy affect market outcomes?

Knowledge and Skills:

Students will know.....

- The law of demand.
- The law of supply.
- Key terms and factors related to consumer and producer decision making.
- Measures of elasticities.
- How to define consumer surplus, producer surplus and market equilibrium.
- How equilibrium price, quantity, consumer surplus and producer surplus for a good or service are determined.
- How to define and measure a surplus and a shortage.

- How changes in underlying conditions and shocks to a competitive market can alter price, quantity, consumer surplus, and producer surplus.
- Forms of government price and quantity intervention.
- How government policies alter consumer and producer behaviors and how this changes market outcomes.
- How markets are impacted by tariffs and quotas.

Students will be able to ...

- Explain the relationship between price and quantity demanded.
- Draw an accurately labeled graph to demonstrate how markets function.
- Explain buyers' responses to changes in incentives and constraints.
- Explain producers' responses to changes in incentives and technology.
- Explain measures of elasticity and the impact of a given price change on total revenue or total expenditure. Calculate measures of elasticity.
- Calculate areas of consumer surplus and producer surplus at equilibrium and in response to changes in market conditions and disequilibrium.
- Calculate changes in market outcomes resulting from government policies.
- Explain, using an accurately labeled graph, how government policies change market outcomes.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)
- AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.
- Student Progress Checks on College Board AP Classroom.
- Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.
- Students will draw, interpret, label, and analyze graphs and analyze data in order to describe and demonstrate concepts.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Think-Share Pair- Student pairs will choose a good or service in the market. Students will be given three index cards and, on each card, will write a different scenario that will change the market for that goods. Cards will be randomly selected and read to the class. Students will draw and label supply-demand graph in order to show the impact on equilibrium price and quantity. Student partners check their graphs. One student pair will be called on to share their graph. Repeat.

Simulation and debriefing- Pearl Exchange Market. Students buy and sell pearls in a market to determine how prices are set and how forces in different markets can influence supply and demand. Debrief the activity as a

class to connect the experience to the concepts of supply, demand, equilibrium, consumer and producer surplus, factors that shift the supply and demand curves.

Simulation and debriefing- Auction an item of value in class to introduce students to the relationship between price and quantity demanded. Create a demand graph from data from the auction. Change one determinant of demand.

Students practice determining the difference between a change in quantity demanded and a change in demand. Debrief and review concepts of supply, demand, and equilibrium.

RESOURCES

Teacher Resources:

Textbook-Mankiw, Principles of Microeconomics, 7th ed.

Supplemental materials:

Advanced Placement Economics (National Council on Economic Education)

Krugman, Economics for AP, 2nd ed.

Planet Money Podcast (NPR)

Instructional videos (College Board, Khan Academy, ACDC Econ)

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Equipment Needed:

Chromebooks

Laptop

LCD Projector

Document Camera

RAHWAY PUBLIC SCHOOLS CURRICULUM TEMPLATE

UNIT OVERVIEW

Content Area: AP Microeconomics

Unit Title: Unit 3 Production, Cost, and the Perfect Competition Model

Target Course/Grade Level: Grades 11-12

Unit Summary: This unit is the introduction to the perfect competition model that serves as the market model upon which the models for other markets are based. This unit uses the concepts of supply and demand and additional factors that drive the decisions made by firms in the market. Students will explain how the production function, costs of production and profit maximization determine the decisions made by firms in this market. Students learn how the decisions that firms make are based on cost-benefit analysis and marginal analysis.

Approximate Length of Unit: 6 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconEM.5. a: Analyze the economic practices of corporations and monopolies regarding the production and marketing of goods and determine the positive or negative impact of these practices on individuals and the nation and the need for government regulations.

6.1.12. EconEM.6. a: Determine how supply and demand influenced price and output during the Industrial Revolution. Governments and financial institutions influence monetary and fiscal policies.

6.1.12. EconNE.9.c: Explain how government can adjust taxes, interest rates, and spending and use other policies to restore the country's economic health.

6.1.12. EconNM.11. a: Analyze how scientific advancements, including advancements in agricultural technology, impacted the national and global economies and daily life.

6.1.12. EconEM.12. a: Assess the role of the public and private sectors in promoting economic growth and ensuring economic stability.

6.1.12. EconNE.13. a: Relate American economic expansion after World War II to increased consumer demand. Since most choices involve a little more of one thing and a little less of something else, economic decision making includes weighing the additional benefit of the action against the additional cost.

6.1.12. EconNE.16. b: Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations.

Career Readiness, Life Literacies, and Key Skills:

9.1.12.CFR.4: Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.

9.1.12.EG.4: Explain the relationship between your personal financial situation and the broader economic and governmental policies.

9.1.12.EG.5: Relate a country's economic system of production and consumption to building personal wealth, the mindset of social comparison, and achieving societal responsibilities.

Interdisciplinary Connections and Standards:

MA.N-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

MA.N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

MA.A-REI.A Understand solving equations as a process of reasoning and explain the reasoning

MA.A-REI.D.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

MA.F-IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.

MA.F-IF.C.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

MA.F-LE.A.1b - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

MA.F-LE.A.1c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

MA.F-BF.B.4b Verify by composition that one function is the inverse of another.

MA.8.EE.B.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways

MA.F-LE.A.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3- Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

Unit Understandings:

Students will understand that...

- Firms' production output and costs at different input and output levels impact short and long run operating decisions.
- In order to determine optimal output and maximize profit, firms compare marginal revenue and marginal costs and produce where marginal revenue equals marginal costs.
- Firms' short run decisions to produce output, and long run decisions to enter or exit a market, are based on profitability.
- Competitive markets decide how much they should produce and have freedom to enter or exit a market.
 - Market structure constrains and influences prices, output and efficiency.

Unit Essential Questions:

- What is the production function?
- What is a perfectly competitive market?
- How do businesses use marginal analysis to make decisions?
- What drives producers' decision making?

Knowledge and Skills:

Students will know.....

- The production function explains the relationship between inputs and outputs.
- Change in input results to a change in marginal product and average product, leading to a change in total product.
- The law of diminishing marginal returns.
- Fixed costs and variable costs determine total cost.
- As output changes, marginal, total, and variable costs change, but total fixed costs remain fixed at all output levels.
- The scale of production determines the relationship between long run inputs and outputs.
- The definition of different types of profits.
- Firm response to profit opportunities.
- The profit maximizing rule.
- How a firm makes short run and long run decisions.
- Characteristics of a perfectly competitive market.
- How firms make decisions in a perfectly competitive market and how prices in that market lead to an efficient outcome.

Students will be able to ...

- Calculate measures of productivity and short run and long run costs.
- Calculate a firm's profit or loss.
- Explain using a graph the profit maximizing level of production.
- Draw an accurately labeled graph to represent a perfectly a competitive firm and market and show how changes in the market as well as changes in firm costs and profits impact decisions made by the firm.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)
- AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.
- Student Progress Checks on College Board AP Classroom.
- Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.
- Students will draw, interpret, label, and analyze graphs and analyze data in order to describe and demonstrate concepts.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Think-Share Pair. Students are given short run production costs formulas used to determine the cost curves for a firm. Some of the formulas are incorrect. Students have to decide which are correct and which are wrong and with a partner come up with an accurate list.

Simulation and debriefing. Widget Factory. This is a factory simulation where a student is given fixed resources and must produce widgets in one minute. For the next round another student (unit of labor) is added. For each additional round another student is added to the factory. Production is recorded and the simulation continues until the law of diminishing marginal returns causes marginal productivity to decline. Debrief on the concepts of marginal product, average product, and diminishing marginal returns.

Real world examples- Provide students with salary and costs associated with a job and have the students determine whether the person taking that job is making an accounting profit or economic profit, or both.

RESOURCES

Teacher Resources:

Textbook-Mankiw, Principles of Microeconomics, 7th ed.

Supplemental materials:

Advanced Placement Economics (National Council on Economic Education)

Krugman, Economics for AP, 2nd ed.

Planet Money Podcast (NPR)

Instructional videos (College Board, Khan Academy, ACDC Econ)
AP Classroom Microeconomics <https://apcentral.collegeboard.org/>

Equipment Needed:

Chromebooks

Laptop

LCD Projector

Document Camera

RAHWAY PUBLIC SCHOOLS CURRICULUM TEMPLATE

UNIT OVERVIEW

Content Area: AP Microeconomics

Unit Title: Unit 4 Imperfect Competition

Target Course/Grade Level: Grades 11-12

Unit Summary: In the previous unit students learned the firm behavior of a perfectly competitive firm and the application of the cost curves that govern firm behavior. In this unit students use those cost curves to show how firms in imperfectly competitive markets, i.e., monopolistic firms, oligopolistic firms, and monopolistically competitive firms, choose the quantity to produce and the price to charge. Students will build on their understanding of what it means for a market to be efficient or inefficient. Students will be introduced to the concept of game theory and strategic decision making.

Approximate Length of Unit: 7 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconEM.2.c: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconET.3. a: Relate the wealth of natural resources to the economic development of the United States and to the quality of life of individuals.

6.1.12. EconGE.3. a: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconEM.5. a: Assess the impact of governmental efforts to regulate industrial and financial systems in order to provide economic stability.

6.1.12. EconEM.5. a: Analyze the economic practices of corporations and monopolies regarding the production and marketing of goods and determine the positive or negative impact of these practices on individuals and the nation and the need for government regulations.

6.1.12. EconEM.6. a: Determine how supply and demand influenced price and output during the Industrial Revolution. Governments and financial institutions influence monetary and fiscal policies.

6.1.12. EconEM.12. a: Assess the role of the public and private sectors in promoting economic growth and ensuring economic stability.

6.1.12. EconNE.13. a: Relate American economic expansion after World War II to increased consumer demand. Since most choices involve a little more of one thing and a little less of something else, economic decision making includes weighing the additional benefit of the action against the additional cost.

6.1.12. EconNE.16. b: Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations.

6.2.12. EconET.3. a: Determine how, and the extent to which, scientific and technological changes, transportation, and new forms of energy brought about social, economic, and cultural changes in the world.

6.2.12. EconGE.6. a: Evaluate efforts of governmental, non-governmental, and international organizations to address economic imbalances, social inequalities, climate change, health and/or illiteracy.

Career Readiness, Life Literacies, and Key Skills:

9.1.12.CFR.4: Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.

9.1.12.EG.3: Explain how individuals and businesses influence government policies.

9.1.12.EG.4: Explain the relationship between your personal financial situation and the broader economic and governmental policies.

9.1.12.EG.5: Relate a country's economic system of production and consumption to building personal wealth, the mindset of social comparison, and achieving societal responsibilities.

9.1.2.CAP.4: List the potential rewards and risks to starting a business.

Interdisciplinary Connections and Standards:

MA.N-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

MA.N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

MA.A-REI.A Understand solving equations as a process of reasoning and explain the reasoning

MA.A-REI.D.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

MA.F-IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.

MA.F-IF.C.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

MA.F-LE.A.1a - Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

MA.F-LE.A.1b - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

MA.F-LE.A.1c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

MA.F-IF.B.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.

MA.8.EE.B.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways

MA.F-LE.A.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3- Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

Unit Understandings:

Students will understand that...

- Market structure and the goal of firms to maximize profits determine prices, outputs, and efficiency.
- Monopolies have only one seller and make decisions about what to charge different customers.
- Public policies aimed at solving the problem of monopolies can improve efficiency.
- Monopolistic competition provides product differentiation but fails to provide economic efficiency.
- Oligopolistic firms are interdependent, and whether decisions are made individually or collectively affects the market structure, quantity, and price levels.

Unit Essential Questions:

- What constitutes an imperfect market?
- Why are imperfect markets inefficient?
- Why do monopolies try to charge different prices to different customers?
- What actions can the government take to correct the inefficiencies of imperfect markets?
- How does monopolistic competition affect society's welfare?
- How do the decisions of one firm in an oligopolistic market affect pricing and production decisions of other firms in the market?

Knowledge and Skills:

Students will know....

- Imperfectly competitive markets include monopoly, oligopoly, and monopolistic competition.
- In imperfectly competitive markets, consumers and producers respond to prices that are above the marginal costs of production.
- In a monopoly, profit is maximized where the marginal revenue equals the marginal cost.
- Monopolies charge a price that is greater than marginal cost and produce an output that is inefficient.
- Government can attempt to make monopolies more efficient through regulation or by turning some monopolies into public enterprises.
- Barriers to entry protect monopolies.
- Monopolies can engage in price discrimination to increase profits.

- In monopolistic competition, many firms produce differentiated products.
- In monopolistic competition output is not allocatively or productively efficient.
- In an oligopolistic market there are high barriers to entry and few competitors.
- An oligopolistic firm makes decisions based on individual choice in connection with the choices of others, preventing it from achieving the same outcome as a monopoly, but creating an inefficient outcome.

Students will be able to ...

- Explain using graphs equilibrium, consumer surplus, producer surplus, profit, and deadweight loss in imperfectly competitive markets.
- Draw an accurately labeled graph to represent a monopoly and show how changes in firm costs and profits impact decisions made by the firm.
- Calculate areas of consumer surplus, producer surplus, profit and deadweight loss in imperfectly competitive markets.
- Explain using tables the strategies and equilibria in simple games and the connections to oligopolistic firm behavior in markets, and the connections to behaviors by individuals and countries in non-market settings.
- Calculate the incentive needed to change a player's dominant strategy.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)
- AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.
- Student Progress Checks on College Board AP Classroom.
- Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.
- Students will draw, interpret, label, and analyze graphs and analyze data in order to describe and demonstrate concepts.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Simulation and debriefing- Four Market Structures. Divide students into four market structures with one student as a monopolist, three as oligopolists, three or four as monopolistically competitive firms, and the rest as perfectly competitive firms. Distribute four types of candy (or other good used as an example): monopolist gets a large candy bar, oligopolists each get a Jolly Rancher, monopolistically competitive firms each get a mini candy part, and perfect competition firms get a skittle. Announce that teacher will buy one item from each market from 5 cents to 25 cents. Oligopolists can talk to each other, but monopolistic competitors cannot. Each student writes down at what price they are will to sell. Complete market structures graphic organizer and debrief on the concepts of control over price, types of goods, barriers, and number of firms.

Simulation and debriefing.

Have two volunteers simulate prisoners with a prisoners' dilemma scenario. If both parties remain silent or collude, both will continue to profit from this situation and their tacit collusion. However, if one party chooses to blame the other, this action could precipitate a downward spiral, in which all parties end up with a much less favorable result. Debrief- The conclusion is the same: when comparing the options of collusion and competition, all parties will obtain a more favorable result if they do not compete with each other.

RESOURCES

Teacher Resources:

Textbook-Mankiw, Principles of Microeconomics, 7th ed.

Supplemental materials:

Advanced Placement Economics (National Council on Economic Education)

Krugman, Economics for AP, 2nd ed.

Planet Money Podcast (NPR)

Instructional videos (College Board, Khan Academy, ACDC Econ)

AP Classroom Microeconomics <https://apcentral.collegeboard.org/>

Equipment Needed:

Chromebooks

Laptop

LCD Projector

Document Camera

RAHWAY PUBLIC SCHOOLS CURRICULUM TEMPLATE

UNIT OVERVIEW TEMPLATE

Content Area: AP Microeconomics

Unit Title: Unit 5 Resource Markets

Target Course/Grade Level: Grades 11-12

Unit Summary: This unit provides the basic theory for the analysis of resource or factor markets- the markets for labor, land and capital. Students will learn that the wages earned by the factors of production depend on the supply and demand for the resource. The demand for a resource is a derived demand, i.e., a firm's demand for a resource is determined by the decision to supply a good in another market. The laws of supply and demand apply to the resource market with firms hiring additional factors where the marginal revenue product is equal to the marginal resource cost.

Approximate Length of Unit: 6 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconEM.2.c: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconET.3. a: Relate the wealth of natural resources to the economic development of the United States and to the quality of life of individuals.

6.1.12. EconGE.3. a: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconNE.3. a: Evaluate the impact of education in improving economic opportunities and in the development of responsible citizens.

6.1.12. EconEM.5. a: Analyze the economic practices of corporations and monopolies regarding the production and marketing of goods and determine the positive or negative impact of these practices on individuals and the nation and the need for government regulations.

6.1.12. EconEM.6. a: Determine how supply and demand influenced price and output during the Industrial Revolution. Governments and financial institutions influence monetary and fiscal policies.

6.1.12. EconET.8. a: Relate social, cultural, and technological changes in the interwar period to the rise of a consumer economy and the changing role and status of women. Advancements in technology and investments in capital goods and human capital increase economic growth and standards of living.

- 6.1.12. EconNE.13. a:** Relate American economic expansion after World War II to increased consumer demand. Since most choices involve a little more of one thing and a little less of something else, economic decision making includes weighing the additional benefit of the action against the additional cost.
- 6.1.12. EconET.14. b:** Analyze economic trends, income distribution, labor participation (i.e., employment, the composition of the workforce), and government and consumer debt and their impact on society.
- 6.1.12. EconEM.14. a:** Relate the changing manufacturing, service, science, and technology industries and educational opportunities to the economy and social dynamics in New Jersey.
- 6.1.12. EconNE.16. b:** Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations.
- 6.2.12. EconET.3. a:** Determine how, and the extent to which, scientific and technological changes, transportation, and new forms of energy brought about social, economic, and cultural changes in the world.

Career Readiness, Life Literacies, and Key Skills:

- 9.1.12.CFR.4:** Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.
- 9.1.12.EG.3:** Explain how individuals and businesses influence government policies.
- 9.1.12.EG.4:** Explain the relationship between your personal financial situation and the broader economic and governmental policies.
- 9.1.12.EG.5:** Relate a country's economic system of production and consumption to building personal wealth, the mindset of social comparison, and achieving societal responsibilities. 9.1.2.CAP.2: Explain why employers are willing to pay individuals to work.
- 9.2.12.CAP.13:** Analyze how the economic, social, and political conditions of a time period can affect the labor market.

Interdisciplinary Connections and Standards:

- MA.N-Q.A.1** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- MA.N-Q.A.2** Define appropriate quantities for the purpose of descriptive modeling.
- MA.A-REI.A** Understand solving equations as a process of reasoning and explain the reasoning
- MA.A-REI.D.10** Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
- MA.F-IF.B.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
- MA.F-IF.C.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
- MA.F-LE.A.1a** - Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
- MA.F-LE.A.1b** - Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
- MA.F-LE.A.1c** Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
- MA.F-IF.B.6** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
- MA.8.EE.B.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways

MA.F-LE.A.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

MA.A-APR.D.7 Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3- Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

Unit Understandings:

Students will understand that...

- Demand for a resource is derived from the demand for the product for which the resource is an input.
- Competitive, profit-maximizing firms hire each resource or factor up to the point at which the marginal revenue product equals the marginal resource cost.
- The demand for a factor of production is determined by the marginal revenue product for that factor.
- The payment for each factor of production is determined by that factor's marginal contribution to the production of goods and services.
- Firms adjust their combination of resources until the marginal product per dollar is equal for all resources.

Unit Essential Questions:

- How are prices for resources determined?
- Why are equilibrium wages determined by the marginal revenue product?
- How are the other factors of production, land and capital, compensated?
- How does a change in the supply of one factor of production alter the earnings of all of the factors?
- How does a competitive firm select its optimal combination of resources?

Knowledge and Skills:

Students will know....

- The characteristics of perfectly competitive resource markets.

- Resources respond to the resource prices, and the firms' decision to hire is based on the productivity of the factors, price of the product, and the cost of the resource.
- The labor demand curve shifts based on output price and worker productivity.
- In a perfectly competitive labor market firms hire where marginal resource cost equals the marginal revenue product of labor.
- The marginal revenue product of a resource is equal to the marginal product multiplied by the marginal revenue.
- In a labor market with only one employer, firms hire additional labor if marginal revenue product is greater than marginal resource cost.

Students will be able to ...

- Explain the relationship between factors of production, firms and factor prices.
- Calculate marginal revenue product and marginal resource cost.
- Explain using graphs the profit maximizing determination of firms hiring labor in a perfectly competitive market.
- Calculate the optimal determination for hiring labor by a profit maximizing firm using data from a table or graph.
- Calculate the optimal combination of resources for a competitive firm using the least cost rule.
- Explain using graphs the profit maximizing determination of firms hiring labor in a market with only one employer.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)
- AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.
- Student Progress Checks on College Board AP Classroom.
- Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.
- Students will draw, interpret, label, and analyze graphs and analyze data in order to describe and demonstrate concepts.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Graph and Switch: Students are given scenarios based on the labor market. The students are required to graph the market and are then given factors that shift the supply or demand for labor. After the students draw their graphs, they switch with a partner to review each other's work.

Simulation and debriefing- Tennis Ball Factory. This is a factory simulation that is similar to the one from Unit 3, but with a significant difference. Students work as a team to move tennis balls from one basket to another. For the next round another student is added. For each additional round another student is added to the factory. Production is recorded and the simulation continues until the law of diminishing marginal returns causes marginal productivity to decline. However, in this factory simulation, the price of the output is included in order for students to calculate the value of the marginal product. $\text{Marginal Product} \times \text{Price} = \text{Marginal Revenue Product}$. Also, each worker is “paid” a wage. Debrief on the concepts of marginal product and marginal revenue product. When should the factory stop adding workers? $\text{Marginal Revenue Product} = \text{Marginal Resource Cost}$.

RESOURCES

Teacher Resources:

Textbook-Mankiw, Principles of Microeconomics, 7th ed.

Supplemental materials:

Advanced Placement Economics (National Council on Economic Education)

Krugman, Economics for AP, 2nd ed.

Planet Money Podcast (NPR)

Instructional videos (College Board, Khan Academy, ACDC Econ)

AP Classroom Microeconomics <https://apcentral.collegeboard.org/>

Equipment Needed:

Chromebooks

Laptop

LCD Projector

Document Camera

RAHWAY PUBLIC SCHOOLS CURRICULUM TEMPLATE

UNIT OVERVIEW TEMPLATE

Content Area: AP Microeconomics

Unit Title: Unit 6 Market Failure and the Role of Government

Target Course/Grade Level: Grades 11-12

Unit Summary: Students will examine the conditions under which markets fail and how government policies can address these market failures. This unit builds on the concept of efficiency that was studied in earlier units. Students will learn how to determine the socially optimal quantity, when the government should undertake policies to remedy market failures, and which policies best address those failures. Students also learn the reasons for income and wealth inequality and how to measure inequality.

Approximate Length of Unit: 6 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconEM.2.c: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.

6.1.12. EconET.3. a: Relate the wealth of natural resources to the economic development of the United States and to the quality of life of individuals.

6.1.12. EconEM.5. a: Assess the impact of governmental efforts to regulate industrial and financial systems in order to provide economic stability.

6.1.12. EconEM.5. a: Analyze the economic practices of corporations and monopolies regarding the production and marketing of goods and determine the positive or negative impact of these practices on individuals and the nation and the need for government regulations.

6.1.12. EconEM.6. a: Determine how supply and demand influenced price and output during the Industrial Revolution. Governments and financial institutions influence monetary and fiscal policies.

6.1.12. EconNE.9.c: Explain how government can adjust taxes, interest rates, and spending and use other policies to restore the country's economic health.

6.1.12. EconNM.11. a: Analyze how scientific advancements, including advancements in agricultural technology, impacted the national and global economies and daily life.

6.2.12. EconET.3. a: Determine how, and the extent to which, scientific and technological changes, transportation, and new forms of energy brought about social, economic, and cultural changes in the world.

6.2.12. EconGE.6. a: Evaluate efforts of governmental, non-governmental, and international organizations to address economic imbalances, social inequalities, climate change, health and/or illiteracy.

Career Readiness, Life Literacies, and Key Skills:

9.1.12.CFR.4: Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.

9.1.12.EG.3: Explain how individuals and businesses influence government policies.

9.1.12.EG.4: Explain the relationship between your personal financial situation and the broader economic and governmental policies.

9.1.12.EG.5: Relate a country's economic system of production and consumption to building personal wealth, the mindset of social comparison, and achieving societal responsibilities.

9.4.12.GCA.1: Collaborate with individuals to analyze a variety of potential solutions to climate change effects and determine why some solutions (e.g., political, economic, cultural) may work better than others (e.g., SL.11-12.1., HS-ETS1-1, HS-ETS1-2, HS-ETS1-4, 6.3.12.GeoGI.1, 7.1.IH.IPERS.6, 7.1.IL.IPERS.7, 8.2.12.ETW.3).

Interdisciplinary Connections and Standards:

MA.N-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

MA.N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

MA.A-REI.A Understand solving equations as a process of reasoning and explain the reasoning

MA.A-REI.D.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

MA.F-IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.

MA.F-IF.C.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

MA.8.EE.B.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways

MA.F-LE.A.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.1- Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of primary and secondary sources, connecting insights gained from specific details to develop an understanding of the text as a whole.

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3- Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

RH.11-12.9. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

WHST.11-12.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

WHST.11-12.9. Draw evidence from informational texts to support analysis, reflection, and research.

Unit Understandings:

Students will understand that...

- Perfectly competitive markets allocate resources efficiently, but imperfect competition often results in market inefficiencies.
- Free market forces can fail to account for all socially relevant considerations.
- In imperfect markets, appropriate government policies can mitigate inefficiencies.
- Income levels and poverty rates vary greatly across and within groups and countries.
- Inefficient market outcomes can be caused by income inequality.

Unit Essential Questions:

- What are the implications for society of the production and pricing decisions made by firms in markets engaged in imperfect competition?
- In what ways can government policies respond to the inefficiencies created by imperfect markets?
- When a market generates a cost (or benefit) to a party external to the market, what actions can be taken to improve market outcomes?
- Why do private markets fail to produce public goods?
- How can the government potentially remedy the market failure caused by public goods and improve economic well-being?
- What are the sources of income and wealth inequality?
- What is the extent of income inequality in our society and how is distribution of income measured?

Knowledge and Skills:

Students will know.....

- Social efficiency occurs when the marginal benefit of consuming the last unit equals the marginal cost of producing the last unit.
- Market equilibrium does not result in the socially optimal quantity when all of the social benefits and costs are not internalized.
- Market inefficiencies can be ameliorated when marginal social benefit equals marginal social cost.
- Markets engaged in imperfect competition do not produce socially optimal quantities, causing deadweight loss.
- Government policy can increase efficiency in imperfect markets if the policy addresses the correct incentives.
- Government entities produce public goods since private firms lack sufficient incentives to engage in production of public goods.
- The Lorenz Curve and Gini Coefficient are measures that represent inequalities in income distribution.

- Sources of income and wealth inequality include differences in tax structures, human capital, social capital, inheritance, effects of discrimination, access to financial markets, mobility and bargaining power within economic and social units.

Students will be able to ...

- Explain equilibrium allocations in imperfect markets relative to efficient allocations.
- Calculate the deadweight loss resulting from the production of an inefficient quantity.
- Explain using graphs how externalities are not taken into account in a private market and how public policies can be used to address positive and negative externalities.
- Explain how the nature of rival and/or excludable goods influences the behavior of individuals and groups.
- Calculate using graphs how government policies in imperfectly competitive markets can change outcomes.

EVIDENCE OF LEARNING

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)
- AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.
- Student Progress Checks on College Board AP Classroom.
- Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.
- Students will draw, interpret, label, and analyze graphs and analyze data in order to describe and demonstrate concepts.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Response Groups: Students are divided into groups. Each group is given a different scenario that describes either a positive or negative externality. The students in each group will determine the type of externality, graph the externality showing the deadweight loss, and then graph the correct solution to correct the externality. Each group will present its solution and graph to the class.

Graph and Switch: Demonstrate to the class how to show the effect of a government intervention on a graph for an imperfect market structure. Pair students. Change the scenario so that there is a different market structure or a different government intervention. Students then graph the market and the intervention. After the students draw their graphs, they switch with a partner to review each other’s work. Repeat with new scenario.

RESOURCES

Teacher Resources:

Textbook-Mankiw, Principles of Microeconomics, 7th ed.

Supplemental materials:

Advanced Placement Economics (National Council on Economic Education)

Krugman, Economics for AP, 2nd ed.

Planet Money Podcast (NPR)

Instructional videos (College Board, Khan Academy, ACDC Econ)

AP Classroom Microeconomics <https://apcentral.collegeboard.org/>

Equipment Needed:

Chromebooks

Laptop

LCD Projector

Document Camera

RAHWAY PUBLIC SCHOOLS CURRICULUM TEMPLATE

UNIT OVERVIEW TEMPLATE

Content Area: AP Microeconomics

Unit Title: Unit 7 The Design of the Tax System

Target Course/Grade Level: Grades 11-12

Unit Summary: In the previous units, students learned how taxes reduce the quantity of goods sold in a market, how the distribution of the burden of a tax depends on the relative elasticities of supply and demand, and how taxes cause deadweight loss. This chapter address how the U.S. government raises and spends revenue and the problems encountered in attempting to make the tax system both efficient and equitable. The material in this unit is within the purview Microeconomics, however, it is not tested on the AP Exam.

Approximate Length of Unit: 4 weeks

LEARNING TARGETS

NJ Student Learning Standards:

Social Studies

6.1.12. EconET.3. a: Relate the wealth of natural resources to the economic development of the United States and to the quality of life of individuals.

6.1.12. EconET.8. a: Relate social, cultural, and technological changes in the interwar period to the rise of a consumer economy and the changing role and status of women. Advancements in technology and investments in capital goods and human capital increase economic growth and standards of living.

6.1.12. EconNE.9.c: Explain how government can adjust taxes, interest rates, and spending and use other policies to restore the country's economic health.

6.1.12. EconET.14. b: Analyze economic trends, income distribution, labor participation (i.e., employment, the composition of the workforce), and government and consumer debt and their impact on society.

6.2.12. EconGE.6. a: Evaluate efforts of governmental, non-governmental, and international organizations to address economic imbalances, social inequalities, climate change, health and/or illiteracy.

Career Readiness, Life Literacies, and Key Skills:

9.1.12.CFR.4: Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures.

9.1.12.EG.1: Review the tax rates on different sources of income and on different types of products and services purchased.

9.1.12.EG.2: Explain why various forms of income are taxed differently.

9.1.12.EG.3: Explain how individuals and businesses influence government policies.

9.1.12.EG.4: Explain the relationship between your personal financial situation and the broader economic and governmental policies.

Interdisciplinary Connections and Standards:

MA.A-REI.A Understand solving equations as a process of reasoning and explain the reasoning

MA.A-APR.D.7 Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

NJ SLS Companion Standards: Reading and Writing Standards for History, Social Studies, Science, and Technical Subjects:

RH.11-12.1- Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of primary and secondary sources, connecting insights gained from specific details to develop an understanding of the text as a whole.

RH.11-12.2. Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or the author's perspective(s) develop over the course of the text.

RH.11-12.3- Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

RH.11-12.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, qualitatively, as well as in words) in order to address a question or solve a problem.

WHST.11-12.1. Write arguments focused on discipline-specific content.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

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WHST.11-12.9. Draw evidence from informational texts to support analysis, reflection, and research.

Unit Understandings:

Students will understand that...

- The governmental entities in the United States raise revenue through various forms of taxation.
- The efficiency of a tax system refers to the costs it imposes on taxpayers, viz. deadweight loss and administrative burden.
- The equity of a tax system concerns whether the tax burden is distributed fairly among the population.
- When considering changes in the tax laws, policymakers face trade-offs between efficiency and equity.

Unit Essential Questions:

- How does the United States government and other governmental entities raise and spend money?

- What are the efficiency costs of the tax system?
- How is the equity of a tax system evaluated?
- What are the trade-offs between efficiency and equity in the design of a tax system?

Knowledge and Skills:

Students will know....

- The most important taxes for the federal government are individual income taxes and payroll taxes for social insurance programs.
- The most important taxes for state and local governments are sales taxes and property taxes.
- Well- designed tax policies minimize the deadweight losses that occur when taxes distort incentives.
- Well-designed tax policies minimize the administrative burdens that taxpayers face when complying with tax laws.
- The debate over tax policy is over the relative preference given to efficiency and equity.

Students will be able to ...

- Explain the benefit principle.
- Explain the ability to pay principle.
- Explain the difference between horizontal equity and vertical equity.
- Explain what is measured by average tax rate and marginal tax rate and why each measurement is important.
- Explain that the burden of a tax is often borne by individuals other than those who actually pay the tax, causing inequity in the tax system.

<i>EVIDENCE OF LEARNING</i>

Assessment:

What evidence will be collected and deemed acceptable to show that students truly “understand”?

- End of Unit Tests: multiple choice/objective AP-style free response questions, both long and short and Free Response Questions (FRQs)
- AP Practice questions, both Multiple Choice and Free Response, from College Board AP Classroom.
- Deconstruct multiple choice and objective free response questions to assess student understanding and guide further instruction.

Learning Activities:

What differentiated learning experiences and instruction will enable all students to achieve the desired results?

Group Think: Tax Alternatives. This exercise helps students think about the different effects of taxes on different goods. Taxes that may be appealing because they minimize deadweight loss may be undesirable for equity reasons. Tell the class that the state has decided to increase funding for public education. They are considering four alternative taxes to finance these expenditures. All four taxes would raise the same amount of revenue. The options: a. sales tax on food b. tax on families with school-age children c. property tax on vacation homes d. sales tax on jewelry. In groups, students answer the following questions for each of the taxes.

1. Analyze these taxes using the benefit principle
2. Analyze these taxes using the principle of horizontal equity.
3. Classify each tax as progressive, proportional or regressive.
4. Which tax would you choose to finance education? Explain.

Each group answers the questions and presents its choice to the class. The class votes on which solution is “best.” Note: none of the options satisfies all of the equity concerns.

RESOURCES

Teacher Resources:

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