

## **UNIT 3 - PRODUCERS AND CONSUMERS IN A MARKET ECONOMY (11 Days)**

All teaching resources in this document are free for teachers. Here is how to you access them:

1. Many are hyperlinked in the document, so you can get started right away.
2. Lessons that do not have a hyperlink can be found on the lesson plan resource called [Virtual Economics 4.5](#) or 5.0 (VE). All teachers can and should get this resource for free by participating in a VCEE training session. Visit [www.vcee.org](http://www.vcee.org) or email Susan McNamara at [mcnamarasa@vcu.edu](mailto:mcnamarasa@vcu.edu).
3. Lessons from Financial Fitness for Life are on VE. They also have educational technology tools that can be found here:  
<https://www.econedlink.org/resources/collection/fffl-9-12/>

The actions of producers and consumers are a driving force in a market economy. The allocation of scarce resources influences the choices that both groups have to make when interacting with the market. Producers use scarce resources to produce goods and services which consumers use to satisfy their wants and needs. Consumers are the guiding force in a market economy, and the economic choices of consumers in the marketplace drive the behavior of producers.

### **EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*a) describing how consumers, producers, workers, savers, investors and citizens respond to incentives*

**(BUS6120.040)**

Day 1 Understanding Incentives

### **EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*b) explaining how businesses respond to consumer sovereignty*

**(BUS6120.041)**

Day 1 Consumers Rule

### **EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*c) identifying the role of entrepreneurs*

**(BUS6120.042)**

Day 1 Entrepreneurs as visionaries and risk-takers

### **EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*e) describing how costs and revenues affect profit and supply*

**(BUS6120.044)**

Day 1 Cost vs. price

Day 2 Calculating profit

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*g) examining how investment in human capital, capital goods, and technology can improve productivity*

**(BUS6120.046)**

Day 1 Investing in human capital to improve productivity

Day 2 Improving productivity

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*f) describing how increased productivity affects costs of production and standard of living*

**(BUS6120.045)**

Day 1 Measuring productivity using GDP

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

*j) illustrating the circular flow of economic activity*

**(BUS6120.049)**

Day 1 and Day 2 Understanding circular flow

**Evaluation Day**

**EPF. 2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

***a) describing how consumers, producers, workers, savers, investors and citizens respond to incentives***

## **Day 1 - Understanding Incentives**

### **Content Knowledge**

Economic incentives are the additional rewards or penalties people receive from engaging in more or less of a particular activity. Understanding rewards and penalties helps people to make the choices they need to make in order to achieve their goals. Prices, wages, profits, subsidies, and taxes are common economic incentives. Subsidizing an activity usually leads to more of it being provided; taxing or penalizing an activity usually leads to less of it being provided.<sup>2</sup>

We all use incentives (rewards) or disincentives (penalties) to encourage people to make certain choices. All people respond to incentives, but we don't respond to them in the same ways. Understanding this can help students understand their own behavior and the behavior of others when it comes to making decisions.

People frequently have good reasons to influence the behavior of others. For example, businesses try to encourage people to buy more of their products, workers try to persuade employers to hire them and to pay them higher wages, and governments try to induce the production and consumption of some products and discourage the production and consumption of others.<sup>2</sup>

### **Vocabulary**

**Positive incentive** - A reward or other enticement that encourages a behavior (e.g., prize, wages).

**Negative incentive** – A penalty that discourages a behavior (e.g., library fine, parking ticket).

### **Virginia Board of Education Framework**

Consumers, producers, workers, savers, investors, and citizens respond to incentives. For example,

- value and/or a lower price is an incentive for consumers
- profit is an incentive for producers
- pay and benefits are incentives to workers
- interest earned is an incentive for savers
- capital gain is an incentive for investors (e.g., buying at \$10 and selling at \$15 results in a \$5 capital gain)
- citizens have an incentive to vote for politicians who share their views
- interest groups have an incentive to seek to influence politicians to vote in ways that benefit their group.

## Teaching Tips

1) Discuss the incentives that are present in your class that encourage or discourage certain types of behavior. There could be positive incentives, such as grades, or negative incentives, such as staying after school for being late for class.<sup>3</sup> Why does extra credit not work equally well as an incentive for everyone? What about time as an incentive or disincentive? Do offers of “free-time” or “time-outs” work? Under what circumstances? Is there a reason why certain incentives or disincentives don’t work on certain people when they do work on others? Have the students discuss the most effective incentives in the class and explain why they are effective.

2) The teacher may want to show the clip from “The Terminal” and ask why the quarters work as an incentive for Tom Hanks’ character when they clearly aren’t working for others? What is opportunity cost for Hanks’ character vs. others in the terminal? What is Hanks’ motivation for collecting quarters? Video: “*The Terminal*” – DVD – Chapter 10

3) A common error of students is to consider financial incentives as the only important incentives to influence individual choices. While financial incentives can be important and are easy to measure, nonmonetary incentives, such as loyalty, stability, love, altruism and public recognition, also influence individual choices.<sup>3</sup> Compare and contrast the incentives an individual might face in serving as an elected official, the owner of a small business, the president of a large company, and the director of a local United Way office in the aftermath of hurricane devastation.<sup>2</sup>

## Lessons and Resources

Teaching the Ethical Foundations of Economics Lesson 7: Should We Allow a Market For Transplant Organs?

Capstone Unit 1 Lesson 5: Rules Influence Economic Behavior

Choices and Changes in Life, School and Work: Grades 9-10 Lesson 4: What Influences Choices?

EconEdLink Lesson: Fewer Watts and Fatter Wallets

<https://www.econedlink.org/resources/fewer-watts-and-fatter-wallets/>

*News articles*

NPR Planet Money, the Economy Explained - Search “incentives” to see recent news articles applying the concept of incentives

<https://www.npr.org/sections/money/>

*Video*

Lentils as Incentive (2:57)

<https://www.mruniversity.com/courses/development-economics/lentils-incentive>

Perverse Incentives and Bad Policies with Jacob Clifford (5:37)

<https://www.youtube.com/watch?v=FdiQl7urd2w>

*Comics*

<http://dilbert.com/strips/comic/2009-08-02/> (incentives and disincentives)

**EPF. 2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by:**  
*b) explaining how businesses respond to consumer sovereignty*

## Day 1 - Consumers Rule

### Content Knowledge

The role of the consumer in a market economy often gets lost in discussions about businesses, government, unemployment and inflation. As a result, students often see themselves (consumers) as victims of businesses. There often is little understanding of the important role of the consumer in the producers' decisions. Producers are well-served only when consumers are well-served. Producers who do not understand that will not be producers for the long-term; and consumers who do not understand that underestimate their own market power.

Consumers are powerful in a market economy, and the economic choices of consumers in the marketplace drive the behavior of producers. Businesses must respond to the wishes of consumers to succeed. Consumers decide what will be produced by casting their dollar votes. It is important for business owners and their employees to understand this. Customers who receive poor service or inferior products will take their business elsewhere.

### Vocabulary

**Consumer Sovereignty** – The concept that consumers rule and buyers ultimately determine which goods and services remain in production.

### Virginia Board of Education Framework

Consumer sovereignty is the concept that consumers rule. In order to succeed, businesses must produce goods and services that consumers are willing and able to buy.

Consumers tell businesses what they want through their dollar votes—that is, what they buy. Businesses must respond to the wishes of consumers in order to succeed.

### Teaching Tips

1) Discuss this quote by Adam Smith from The Wealth of Nations. It makes it clear that an economic system should be judged on how well it satisfies the desires of consumers: "Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer. The maxim is so perfectly self-evident, that it would be absurd to attempt to prove it. But in the mercantile system, the interest of the consumer is almost constantly sacrificed to that of the producer; and it seems to consider production, and not consumption, as the ultimate end and object of all industry and commerce." Point out that products that consumers don't want (such as Blue Pepsi and New Coke) don't last in the marketplace. In recent years, technology has provided companies with tools to better understand their customers' preferences and avoid such gaffs. For example, Mountain Dew recently allowed their customers to vote for new flavors

online while other firms have used social networking web sites to better understand what their customers like.

## **Lessons and Resources**

Personal Decision Making: Focus on Economics Lesson 12: Advertising: Is Consumer Sovereignty Dead?

Capstone Unit 2 Lesson 11: Do Prices Matter to Consumers?

EconEdLink Lesson: Satisfaction Please!

Part 1: <https://www.econedlink.org/resources/satisfaction-please-part-1/>

Part 2: <https://www.econedlink.org/resources/satisfaction-please-part-2/>

*Video*

“The Seedless Watermelon” (consumer sovereignty) (0:38)

<http://www.yadayadaecon.com/clip/37/>

Products That Didn't Satisfy Customers

<http://www.growthink.com/content/10-famous-product-failures-and-advertisements-did-not-sell-them>

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

***c) identifying the role of entrepreneurs***

## **Day 1 - Entrepreneurs as visionaries and risk-takers**

### **Content Knowledge**

Entrepreneurs take on the calculated risk of starting new businesses to make a profit, either by embarking on new ventures similar to existing ones or by introducing new innovations. Entrepreneurial innovation is an important source of economic growth.<sup>2</sup>

Entrepreneurs create the new businesses in our economy. They take on the challenge of creating or identifying a product, assessing the market for the product, determining a price for the product, creating a strategy for the business, obtaining funding for the new enterprise, hiring and managing employees, and assuming the risk associated with the new venture. Entrepreneurs are often motivated by the potential for financial rewards, as well as an interest in working for themselves. If they are successful, entrepreneurs receive the profit that remains after they pay salaries for employees, taxes to the government, and all other costs associated with the business.<sup>2</sup>

Starting any new business involves some risk. Entrepreneurs must invest their own time and resources before making products available in the market. The vast majority of entrepreneurs create new businesses similar to those around them, such as a new grocery store or a new dry cleaning business. These businesses may create jobs and often provide important products and services for their communities. Other entrepreneurs take on an even greater challenge by innovating or bringing a new invention to the market. In addition to accepting the risks entailed in starting a new businesses, these innovative entrepreneurs must have the vision, originality, and daring to seek out opportunities for a new product or service and introduce it to the public.<sup>2</sup>

Innovative entrepreneurs are responsible for much of the growth in our economy. Bringing us innovations such as the radio, airplane, and personal computer, these individuals change the way people live their lives, often fostering a more productive and efficient economy. Because entrepreneurship plays an important role in economic growth, public policies that affect the profitability of entrepreneurship — from intellectual property rights to taxes to immigration regulations — often have a significant effect on consumers.<sup>2</sup>

### **Vocabulary**

**Entrepreneurs** - People who take calculated risks in order to start new businesses and develop innovative products and processes. A person who draws upon his or her skills and initiative to launch a new business venture with the aim of making a profit. Often a risk-taker, inclined to see opportunity when others do not.

### **Virginia Board of Education Framework**

Entrepreneurs accept the risk of organizing resources to produce goods and services, and they expect to earn profits.

Entrepreneurs earn profits when buyers purchase the products they sell at prices higher than the costs of production. Entrepreneurs incur losses when buyers do not purchase the products they sell at prices high enough to cover the costs of production.

Profit is an important incentive that leads entrepreneurs to accept the risks of business failure. Independence in decision-making is another incentive important to entrepreneurs. Entrepreneurs increase competition by bringing new goods and services to market or delivering products in innovative ways. They often foster technological progress and economic growth.

## Teaching Tips

1) Often students think that inventors are entrepreneurs. Sometimes they are and sometimes they are not. It is important to note that entrepreneurs take the risks required to bring a product to market. An inventor can have a product in his or her basement but will become an entrepreneur only upon moving the product from the basement into the marketplace. Have the students read about inventors who were entrepreneurs (e.g., Jim Henson, Jan Matzlinger, Thomas Edison, Steve Jobs, Mark Zuckerberg).<sup>3</sup>

2) Display the following list somewhere in the classroom where all students can see it:

Role of the Entrepreneur

New product

New process

New market

New source of materials

New ways of doing business

Students will identify and explain the five roles of entrepreneurs. Explain that these are the five roles of an entrepreneur that were described by economist Joseph Schumpeter. Begin by asking students to identify products or services that might fit into each category: examples (new product or service – iPhone, new process – shale oil, new market – cell phones for rural India, new source of materials – deep-water oil and natural gas, new ways of doing business – Redbox and Netflix).

Explain further that Schumpeter said it was not enough merely to develop or design these things, but that an entrepreneur also took a risk in bringing it to the marketplace; for example, the entrepreneur may experience profit or loss by taking on any of these roles because the entrepreneur is responsible for the decision to bring it to the marketplace.

In groups have students brainstorm products or services which would fit in each category. They might conduct research to learn the name of the entrepreneurs behind the innovations. (It's good for students to understand the variety of ways in which an entrepreneur can innovate – and not just memorize the list.)

Students will be able to explain the difference between an entrepreneur, an inventor, and a manager. Have students look at the five roles of the entrepreneur. Ask students why an inventor of a new product or process may not be an entrepreneur. Ask students why a manager may not be an entrepreneur. These are important because students frequently assume that an inventor takes a risk in bringing a new product or process to market, when in fact, inventors frequently sell their ideas to others who create products and/or bring them to market. Likewise a manager may oversee a portion of the process, but their compensation is frequently a salary (sometimes with a bonus).

## Lessons and Resources

Entrepreneurship Economics Lesson 1: Entrepreneurship's Many Beneficiaries

Financial Fitness for Life: Grades 9- 12 Lesson 5: Making Your Own Job

Focus: Understanding Economics in US History Lesson 24: Industrial Entrepreneurs or Robber Barons?

EconEdLink Lesson: The Entrepreneur in You

<http://www.econedlink.org/lessons/index.php?lid=264&type=educator>

Econedlink Lesson: What Makes an Entrepreneur?

<https://www.econedlink.org/resources/what-makes-an-entrepreneur/>

### *Reading*

*"Have Knife, Will Travel: A Slaughterhouse on Wheels"*

<http://online.wsj.com/article/SB122054916174600403.html>

### *Cartoons*

<http://www.gocomics.com/wizardofid/2010/04/27> (role of the entrepreneur)

<http://www.gocomics.com/bc/2010/04/13> (entrepreneurship)

### *Videos*

Entrepreneurs Change the World (2:00)

<https://www.youtube.com/watch?v=T6MhAwQ64c0>

What is Entrepreneurship (2:00 min)

<https://www.youtube.com/watch?v=N95U0nhxg28>

15 Characteristics of Entrepreneurs (6:20)

<https://www.youtube.com/watch?v=sOjeQV5pHh4&spfreload=5>

Ordinary to You, Amazing to Others (1:55)

[https://www.google.com/search?sourceid=navclient&ie=UTF-8&rlz=1T4GGNI\\_enUS522US523&q=ordinary+to+you,+amazing+to+others](https://www.google.com/search?sourceid=navclient&ie=UTF-8&rlz=1T4GGNI_enUS522US523&q=ordinary+to+you,+amazing+to+others)



**EPF .2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**  
*e) describing how costs and revenues affect profit and supply*

## Day 1 - Cost vs. price

### Content Knowledge

From television advertisements to casual conversation, cost and price are used interchangeably. But they are different. A business must consider the costs of producing a product as well as consumer demand for the product before it sets a product's price. The difference between cost and price needs to be brought to the student's attention as they have very different implications for decision-making. Time should be spent explaining that economic costs include opportunity costs (what else could be done with the time involved) as well explicit costs (those that are paid for).

#### Vocabulary

**Costs** – An amount that must be paid or spent to buy or obtain something. The effort, loss or sacrifice necessary to achieve or obtain something. The money spent for the inputs used in producing a good or service<sup>1</sup> (see cost of production).

**Cost of production** – Amounts paid for resources (land, labor, capital and entrepreneurship) used to produce goods and services.

**Price** – The amount consumers pay when they buy a good or service; the amount a producer receives when they sell a good or service.

#### Virginia Board of Education Framework

Rising costs tend to decrease profits and/or lead to higher prices of goods and services. Falling costs tend to increase profits and/or lead to lower prices of goods and services.

A change in the cost of production influences how much of a good or service will be produced (supplied).

When costs of inputs rise, (a) profits will fall and/or (b) the price of the good or service will be increased and sales may decrease. (For example, when the cost of lumber goes up, homebuilder profits will fall or the price of houses will go up.)

When costs decrease through a reduction in the cost of inputs (a) profits can increase or (b) the price of the good or service can be decreased and sales may increase. (For example, when the cost of lumber decreases, homebuilder profits will increase and/or the price of houses will decrease.)

Supply refers to the quantity of a good or service that will be brought to market at every price at a given time. When cost of production rises, supply will decrease; when cost of production decreases, supply will increase.

## Teaching Tip

Cost is what it takes, in terms of dollars or resources, to produce a particular product or service. If you are buying corn from the local Farmer's Market this would include the dollar value of seeds, labor, transportation to the market, equipment like tractors, etc... The price – on the other hand – is the amount that the consumer is willing to pay to be able to have that corn on the table for dinner.

Time needs to be spent on a simple exercise asking students whether something is a price (the exchange value of a good or service between consumer and producer) or a cost (an amount paid for a resource in the production process). Students should then explain what the mathematical relationship between price and cost needs to be for the producer to stay in business ( $\text{cost} < \text{price}$ ).

## Lessons and Resources

Personal Decision Making: Focus on Economics Lesson 7: Business Decision Making; Are They Out To Get You?

Master Curriculum Guide: Economics and Entrepreneurship Lesson 12: Profits and Entrepreneurship

EconEdLink Lesson: The Price of Gasoline - What's Behind It?

<https://www.econedlink.org/resources/the-price-of-gasoline-whats-behind-it/ator>

*Podcast:*

Planet Money: "Work After Covid"

<https://www.npr.org/2020/07/28/896472621/work-after-covid>

## Day 2 - Calculating profit

### Content Knowledge

Profit is income received for entrepreneurial skills or risk taking and is calculated by subtracting a firm's costs of producing a good or service from the revenues received from selling the good or service. Profit is income to business owners.<sup>3</sup>

The desire for profit persuades entrepreneurs to establish new businesses, expand existing ones and change the kinds of goods and services produced. The desire for profit motivates owners and managers to introduce cost-cutting technologies and to compete more vigorously with other businesses for consumer dollars. Similarly, losses or negative profits are a signal to move

resources elsewhere. In a competitive market economy, profits and losses spur efficiency, growth, change and economic progress.<sup>3</sup>

Students often see profit as benefiting only businesses. The important thing about profits and losses is that they direct businesses toward producing the goods and services that consumers value more and away from producing the goods and services that consumers value less. Profits reward firms that produce efficiently and correctly anticipate which goods and services consumers want most. Inefficient businesses and firms that do not adapt to changes in consumer preferences and technology are penalized by incurring losses.<sup>3</sup>

### **Vocabulary**

**Costs** – An amount that must be paid or spent to buy or obtain something. The effort, loss or sacrifice necessary to achieve or obtain something. The money spent for the inputs used in producing a good or service<sup>1</sup> (see cost of production).

**Cost of production** – Amounts paid for resources (land, labor, capital and entrepreneurship) used to produce goods and services.

**Price** – The amount consumers pay when they buy a good or service; the amount a producer receives when they sell a good or service.

**Revenue** - The income generated by the sale of goods and services (price × quantity).

**Profit = Total Revenue – Total Cost**

**Profit** – The amount remaining when all costs are subtracted from all revenues.

### **Teaching Tips**

Students often confuse revenues and profits. Ask your students how much they paid for their backpack or some other item. Next, ask how much profit the store that sold the backpack earned. Most students will tell you that the price they paid is the amount of profit the store earned. Use this example to help them recognize that the price paid for the backpack is revenue for the store, and that from its revenue the store must pay its costs. What is left after the store pays its costs is profit. Have the students identify some of the costs the store must pay, e.g., salary for workers, payment for items sold in the store, rent, electricity and water service.<sup>3</sup> Create some simple math problems as examples to illustrate “Total Revenue – Total Cost = Profit.”

2) Show this video to show the costs of running a business. How much profit is left? Costs of <http://www.youtube.com/watch?v=QQrDZOWU24Y&feature=related>

### **Lessons and Resources**

[Economics in Action: 14 Greatest Hits for Teaching High School Economics](#)

Lesson 9: The Invention Convention

[Capstone Unit 4 Lesson 23: Make a Profit: Do the Math](#)

[Mathematics and Economics: Grades 3-5: Lesson 6: Bookmark Profit](#)

EconEdLink Lesson: Lemonade for Sale

<https://www.econedlink.org/resources/lemonade-for-sale/>

*Reading*

Can Allowing Customers to Pay As They Wish Increase Profits?

<http://www.npr.org/blogs/money/2011/01/20/133056468/can-allowing-customers-to-pay-as-they-wish-increase-profits>

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**

***g) examining how investment in human capital, capital goods, and technology can improve productivity***

## **Day 1 - Investing in Human Capital to Improve Productivity**

### **Content Knowledge**

Human capital refers to the combination of a person's education, knowledge, experience, health, habits, training and talent. A person who has acquired more human capital will be able to produce more. At the individual level, additions to human capital are closely connected to earning higher wages and income. At the level of the national economy, gains in the average level of human capital for the population are a primary source of productivity growth and economic growth.<sup>3</sup>

#### **Vocabulary**

**Productivity** The amount of output (goods and services) produced per unit of input (productive resources) used.

**Human capital** – The health, education, experience, training, skills and values of people.<sup>3</sup>

#### **Virginia Board of Education Framework**

People invest in their human capital through education, training, and experience.

Through investment in human capital, workers learn how to produce more efficiently, thus increasing productivity.

Workers can also improve their productivity by using physical capital (or real capital), such as tools and machinery.

Increases in productivity result from advances in technology and improvements in physical and human capital. Investment in physical and human capital can increase productivity and thus raise future standards of living by increasing economic growth.

### **Teaching Tips**

- 1) In Unit 6 you will look at human capital as it affects one's income. Here you will look at how human capital affects productivity--output per worker.
- 2) Productivity is a measure of the quantity of goods and services produced for a given amount of resources. Have students give examples from their own work experience of times where competition helped improve productivity by forcing all workers to "be the best that they can be."

- 3) Conduct an assembly line activity. After one round, let students decide if they think they can develop a process to be more productive. Conduct a second round. Were they more productive? Were some people better at one job than others? If they were employers could they imagine paying those people more. Have students explain how the process of specialization and division of labor results in increased productivity of labor, output, and overall consumption.
- 4) Have students decide which workers to hire and explain the hiring decisions, given a list of job applicants with different levels of productivity, measured by the amount the worker produces in a certain period of time.
- 5) Discuss productivity in sports. Are players who can produce more home runs paid more? That is productivity.
- 6) Ask why more productive workers are likely to be of greater value to employers and earn higher wages than less productive workers. To emphasize how important productivity is to businesses, how this video on company productivity training:  
<http://www.youtube.com/watch?v=eGwjLnbuM6I&feature=related>

## Lessons and Resources

EconEdLink Lesson: Capital Investments: Human vs. Physical

<http://www.econedlink.org/resources/capital-investments-human-v-physical/>

## Day 2 - Improving productivity

### Content Knowledge

Why should students understand productivity? On a personal level, being more productive means getting things done more quickly. Get chores done faster and have more leisure time. More productive workers generally earn more because businesses want more productive workers--and increasing productivity increases a nation's output and making it wealthier. Productivity is important.

Productivity is the amount of goods and services produced per unit of input or per unit of the productive resources used. Productivity can be increased by producing more goods and services with the same amount of resources or by producing the same amount of goods and services with fewer resources. Productivity can be increased by investing in capital goods such as factories, machines and tools. Individual workers can also increase productivity and enhance their own earning power by investing in their human capital through education and training.<sup>3</sup>

Increased productivity is important because a high income and standard of living are dependent upon higher productivity. Without higher productivity per worker, there cannot be higher wages per worker, which lead to more goods and services for the workers to consume and enjoy.<sup>3</sup> Over

time, increased productivity leads to reduced costs of production and higher standards of living for societies.<sup>1</sup>

Students need to be shown that there is a direct connection between the use of capital, technology and improved human capital, and the standard of living. This applies to individuals and to the nation as a whole. The increased productivity that comes from use of technology, capital and improved human capital relates directly to more goods and services at a lower cost—which means an improved standard of living.

Students should be able to cite examples of changes in productivity throughout history resulting from improvements in processes and procedures.

### **Vocabulary:**

**Productivity** – The amount of output (goods and services) produced per unit of input (productive resources) used.<sup>3</sup>

**Technological changes** - Improvements in a firm's ability to produce due to improved processes, methods and machines.

**Physical capital** - An asset used in production that is made by humans, but is non-human.

**Specialization** - The process of becoming an expert in a subject, skill, or task.

### **Virginia Board of Education Framework**

EPF.2f: Productivity refers to output per worker. Productivity is measured by dividing output (goods and services) by the number of inputs used to produce the output.

An increase in productivity occurs when the same output can be produced with fewer resources. Since fewer resources are used, costs of production are reduced. (For example, when Henry Ford introduced the assembly line, cars could be built with many fewer man-hours, an increase in productivity. Because less was spent on labor, the cost of production went down, the price of cars went down, and more cars were sold.)

EPF.2g: Research and development can lead to increased productivity.

Technological change can lead to increased productivity. Improvements in processes and procedures can increase productivity.

The rate of productivity increase is strongly affected by the incentives that reward successful innovation and investments in research and development and in physical and human capital.

Economic growth varies across countries because of differences in human and physical capital investments, technologies, and institutional arrangements and incentives.

## **Teaching Tips**

- 1) Discuss the advantages and disadvantages of buying a motor scooter to replace a bicycle used to earn income as a delivery person. Make sure that your students understand that investing in

new physical or human capital can increase future productivity and consumption, but such investments require the sacrifice of current consumption and entail economic risks.<sup>2</sup>

- 2) Have students participate in a simulated production process in which they calculate productivity and analyze changes that occur through investment in human capital and capital goods. The productivity lesson in Economics in Action would work well. After several rounds students will observe that the average cost of production falls as they become more productive. And, they will be able to conclude that productivity increased as workers gained experience (human capital), as they rented more pencils (investment in capital) as they specialized and developed processes for working faster (technology).
- 3) Have students give examples from their own work experience of times where competition helped improve productivity by forcing all workers to “be the best that they can be.”
- 4) Have students explain how the process of specialization and division of labor results in increased productivity of labor, output, and overall consumption.

## Lessons and Resources

Financial Fitness for Life: Grades 6-8 Theme 2 Lesson 6: Productivity

Economics in Action: 14 Greatest Hits for Teaching High School Economics  
Lesson 8: Productivity

Capstone Unit 4 Lesson 21: Productivity, Diminishing Marginal Returns, and the Demand for Labor

World History: Focus on Economics Lesson 10: How the Industrial Revolution Raised Living Standards

EconEdLink Lesson: Henry Ford and the Model T: A Case Study in Productivity

Part 1: <https://www.econedlink.org/resources/case-study-on-productivity-1-of-3-henry-ford-and-the-model-t/>

Part 2: <https://www.econedlink.org/resources/henry-ford-and-the-model-t-a-case-study-in-productivity-part-2/>

Part 3: <https://www.econedlink.org/resources/henry-ford-and-the-model-t-a-case-study-in-productivity-part-3/>

*Video*

Kiva Systems <http://www.youtube.com/watch?v=Fr6Rco5A9SM>

Making Sen\$e with Paul Solman: Stress, Burnout Taking Toll on Many U.S. Workers

<https://www.pbs.org/newshour/show/stress-burnout-taking-toll-on-many-still-in-u-s-workforce>

Podcast:

Planet Money: Understanding the Productivity Paradox

<https://www.npr.org/2017/06/02/531173429/understanding-the-productivity-paradox>

*Music*

“It’s in the Way That You Use It” by Eric Clapton (productivity)

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**  
*f) describing how increased productivity affects costs of production and standard of living.*

## Day 1 - Measuring productivity using GDP

### Content Knowledge

The key measurement of economic growth is gross domestic product (GDP). It is comprised of the total market value of final goods and services produced in a country (or economy) in a given time period, usually a single year. An important measurement of the standard of living for an economy is per capita GDP. That is the nation's GDP for a year divided by the nation's population. An economy that is showing continual improvement in per capita GDP is likely experiencing a rising standard of living for its citizens.

Increased productivity is important to a society because it leads to reduced costs of production and higher standards of living for its citizens. Students should be able to explain how reducing costs can increase the standard of living of others. The key to GDP and productivity is to get students to understand that standard of living is not determined by money, but rather by access to goods and services.

An important way to measure whether or not an economy is growing is to measure the economy's output, called gross domestic product or GDP. GDP is the measure of all the final goods and services produced in an economy in a single year. And that number can be used to determine whether or not a nation's standard of living is improving. That is done through a statistic called per capita GDP. That is the average share of GDP per person within an economy. Per capita GDP is calculated simply by using the nation's GDP for a given year and dividing it by the nation's population. A nation with consistently rising per capita GDP is experiencing a rising standard of living. This is because each member of the population, on average, has a larger portion of the total goods and services produced by that nation's economy.

### Vocabulary

**Gross Domestic Product (GDP)** – The market value of all final goods and services produced in a country in a year.

**Gross Domestic Product per Capita (GDP per capita)** – The market value of all final goods and services produced in a country in a year divided by the total population.

**Standard of living** – The level of subsistence of a nation, social class or individual with reference to the adequacy of necessities and comforts of daily life.

### Virginia Board of Education Framework

Gross Domestic Product (GDP) is a basic measure of a nation's economic output and income. It is the total market value, measured in dollars, of all final goods and services produced in the economy in one year.

Economic growth is a sustained rise in a nation's production of goods and services. Economic growth is measured by real Gross Domestic Product (GDP).

Real GDP per capita is the measure most often used to measure standard of living. Real GDP per capita is calculated by dividing a nation's real GDP by its population. It is what each person's share would be if the total output of a country was divided equally among its citizens.

An increase in real GDP over time indicates economic growth, which means the nation is producing more goods and services than the year before. A decrease in real GDP over time indicates economic contraction.

As the productivity of labor improves, an economy grows, real GDP per capita increases, and standard of living rises.

Economic growth has been the vehicle for alleviating poverty and raising the standard of living.

## Teaching Tip

- 1) GDP is the total market value of all final goods and services produced in a country in a given period of time, usually one year. GDP measures an economy's output. Is it also a measure of the well-being of a country? Does it account for the quality of a child's education, the safety of a nation's people, the quality of health care, the quality of the environment, the value of leisure or the distribution of income? GDP is clearly an imperfect measure of well-being.
- 2) Have the students discuss what GDP includes and what it leaves out. Volunteer, unpaid work is not counted. The purchase of a used car is not included...as it was produced in a previous year. The profit made on the sale is included. The purchase of an existing home is not included, because it was built in a previous year, but, the realtor's commission is counted. Unreported income is not counted.
- 3) GDP is a measure of the total output of a country--but when discussing standard of living, the measurement most often used is GDP per capita. The GDP of China may be higher than Switzerland, but, the GDP per capita is what measures a nation's wealth. Have students explain why that would be.
- 4) Have each student research a country to learn the GDP and GDP per capita. Tell students to read about the countries on the [CIA World Factbook](#) and write a paragraph about why they think each country is wealthy or not. Why are the poorer countries not productive? (limited physical capital? poor human capital? war? economic system does not encourage productivity?) Ask, "Which countries would you want to live in and why?"

NOTE: GDP is discussed again in Unit 8 – How Does the health of the Economy Affect You.

## Lessons and Resources

[Trading Around the World](#) Unit 4 Productivity: The Key to Increasing a Country's Income

Focus: Understanding Economics in US History Lesson 3: Why Do Economies Grow?

Focus: Middle School Economics Unit 4 Lesson 12: What Does the Nation Consume?

CIA World Factbook <https://www.cia.gov/library/publications/the-world-factbook/>

*Video*

Gross Domestic Product Economic Lowdown, Ep. 7 (7:51)

<https://www.youtube.com/watch?v=1II5IQHcYP8&t=319s>

**EPF.2 The student will demonstrate knowledge of the role of producers and consumers in a market economy by**  
*j) illustrating the circular flow of economic activity*

## Days 1 and 2 - Understanding Circular Flow

### Content Knowledge

When one person spends money, it becomes someone else's income. This idea is often represented in the "circular flow" diagrams commonly found in high school economics textbooks. This idea also leads to the two major ways in which government accountants compute GDP: by measuring total spending (as in this lesson) or by measuring the combined income of all those within the country.

The circular flow diagram is a way of visualizing and categorizing activity within an economy. Its main strength is that it forces the viewer to recognize that there are two exchanges going on with each transaction. One person's spending is another person's income.<sup>1</sup> Adam Smith was one of the first to show how a wide range of markets for different kinds of goods and services, each seemingly independent, were actually linked together in a market system.

A country's overall levels of income, employment and prices are determined by the interaction of spending and production decisions made by all households, firms, government agencies and others in the economy. When consumers make purchases, goods and services are transferred from businesses to households in exchange for money payments. That money is used in turn by businesses to pay for natural resources, human resources and capital goods and to pay taxes. The circular flow model illustrates this flow of economic activity.<sup>1,2</sup>

Students should be able to analyze current events as they apply to the circular flow model.<sup>1</sup>

#### Vocabulary

**Circular Flow** – The movement of output and income from one sector of the economy to another; often illustrated as a circular flow diagram.<sup>3</sup>

**Product Market** - Consumer goods and services – things consumers buy because the goods or services provide them with satisfaction – are exchanged in product markets.<sup>3</sup>

**Factor Market** - Markets for inputs used in the production process are called factor markets. These markets are where the factors of production (natural resources, labor, capital, and entrepreneurship) are bought and sold.

#### Virginia Board of Education Framework

The circular flow model illustrates the way in which resources, goods and services, and money flow among individuals, businesses, and governments in a market economy.

In a market economy, resources are owned by the households; this includes natural, capital, and human resources and entrepreneurial skills.

Individuals in households may take their resources to market (called the factor market, referring to the factors of production) and sell them; they may choose not to sell their resources (as in people who choose not to work for pay).

Businesses go to the factor market and buy or hire the resources they need to produce goods and services.

Households generally receive income from the sale of resources; they can spend this money or save it. Households may take their income to the goods and services (product) market to buy the things they want.

Firms in the goods and services (product) market take the money from those sales to order more from the businesses. The businesses buy more resources to produce more and the money continues to flow through the economy.

Government can be added to the simple circular flow as it buys goods, services, and resources in order to produce certain goods and services. Tax on income and sales is collected by the government to pay for government-provided goods and services (e.g., interstate highways, postal service).

Financial institutions can be added to the economic model to show how savings find their way back into the economy through borrowing and investment.

## Teaching Tip

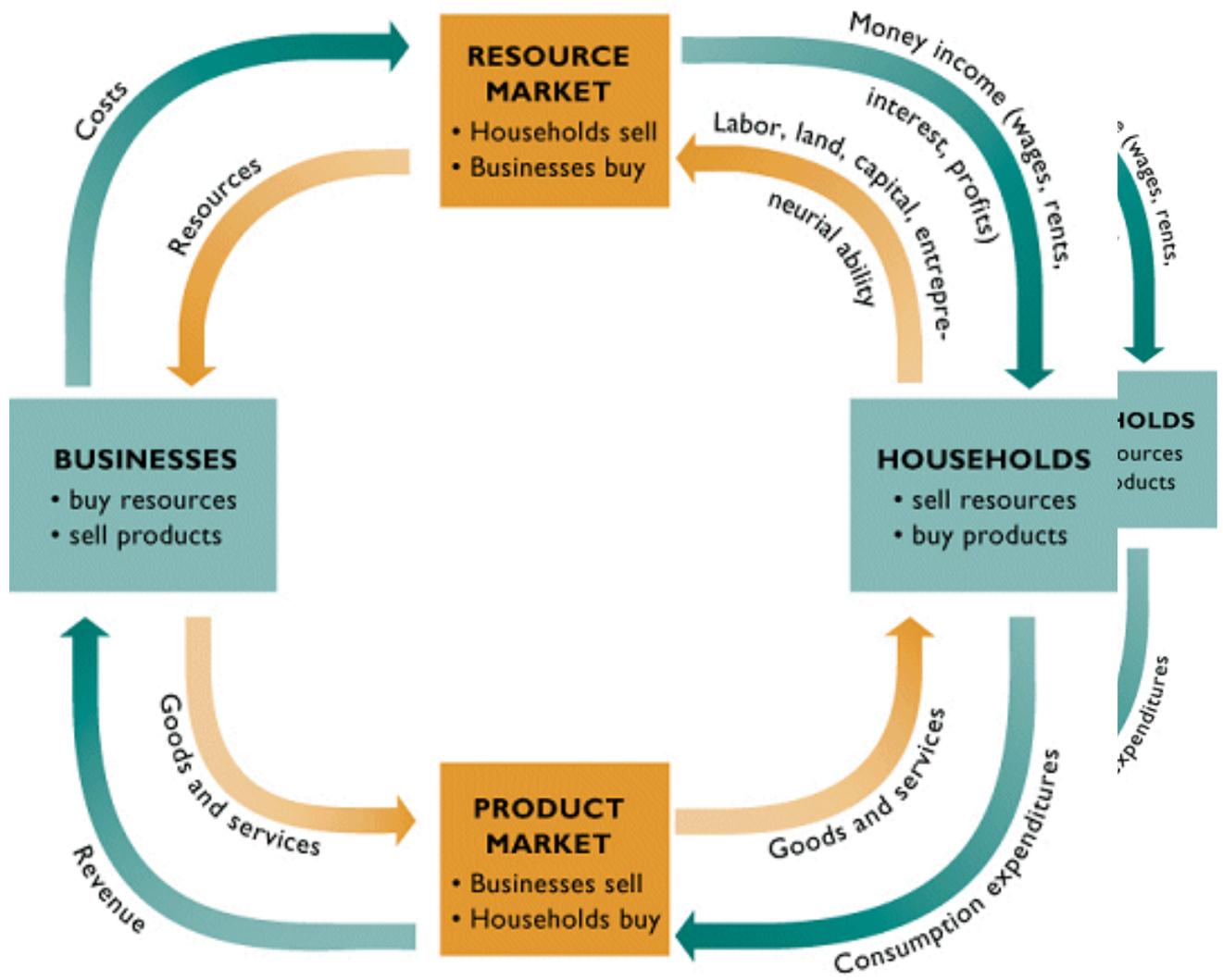
1. Ask students if they know the difference between what the government does and what the economy does? The economy is the system for getting goods and services produced for consumers. Read the following scenario and show on a circular flow chart the effects on the local economy: A visitor comes into a community and spends \$100 on a single purchase at a store. The store's revenues are higher by \$100. It spends some of this money to pay for materials from local suppliers. Have students brainstorm some other ways this money could be circulated throughout the market system.
2. Tell students you are going to draw a simple model to show the basics of how the economy works. Ask students who are the two main players in the economy. (Households and Firms) Write "Households" and "Firms" (Businesses). What do households want? (Goods and services) Where do households get the money to buy goods and services? (Households own the resources--natural, human and capital--households get money by selling resources to businesses in the factor market.) Businesses buy resources and produce goods and services which they sell through retailers in the Goods and Service Market. Households take the money from selling their resources to the goods and services market and buy things they want. That money flows from the Goods and Services Market back to the businesses. So, there is the flow of resources from households to businesses and the flow of goods and services from businesses to households. Then there is the flow of money in the form of income to the households for their resources and the flow of money from the households to the businesses for goods and services. So--two continuous flows--one going clockwise and

the other going counterclockwise. This model is called the simple circular flow. It's called simple because it only includes households and businesses--no government, no banks, and no foreign sector. (It assumes that all income is spent by households and comes back into the economy through business spending.)

3. If you wish to add government, remind students that some money is taken from paychecks before the workers get them. Show that both households and businesses pay taxes (leakage from the circular flow)--money going toward government. Then show money going from the government to the factor market (hiring people) and the goods and service market (buying things from staplers to airplanes).
4. If you wish to add banks--remind students that there are only two things to do with money--spend or save. When households save (leakage from the circular flow), that money only comes back into the circular flow when businesses and households borrow and invest and spend. If banks hold money and don't lend, the economy slows. If banks want to lend and businesses don't want to borrow, the economy slows. Have students explain why this would be the case.
5. Ask students what happens when members of households go to the factor market and do not have skills that anyone wants to pay for. (unemployment) What happens to firms that produce products that consumers don't buy? (They will go out of business or change what they are producing.)

Ask students who decides what will be produced? (Consumers will vote with their dollars and tell businesses what to produce.) Who decides how goods and services will be produced? (Businesses decide on the most profitable method of production. Government may have rules about safety in some cases, e.g. airline travel, food preparation, pharmaceuticals.) Who decides who gets the goods and services that are produced? (Consumers who are willing and able to pay.)

6. Summarize. The circular flow is a circle where money and goods and services flow round and round. One person's spending is another person's income. The circular flow shows that everything is connected.



Source: <http://www.harpercollege.edu/mhealy/eco211/lectures/captism/ch4.htm>

## **Lessons and Resources**

Choices and Changes In Life, School, and Work: Grades 5-6 Lesson 6: What Results When People Can Produce More?

Economics in Action Lesson 10: The Circular Flow of Economic Activity

Demonstration of the circular flow model that goes with this activity:

<http://www.youtube.com/watch?v=lshvr4ug2rY&feature=related>

Master Curriculum Guides in Economics: Teaching Strategies – 5-6 Lesson 3: Dandy Dollars Takes a Trip

Entrepreneurship Economics Lesson 2: Role of the Entrepreneur in the Economy

Lesson: Circular Flows – A Teaching Plan

<http://ecedweb.unomaha.edu/ve/library/CIRF.PDF>

*Video*

Circular Flow demonstration (8:19)

<http://www.youtube.com/watch?v=gaEY-p-21F8>

## **EVALUATION DAY**