

## Duration

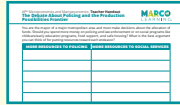
One class session of approximately 40 minutes each

## Resources

### 1. Student Handout



### 2. Teacher Answer Key



## Objectives of Lesson

- To introduce students to the concepts of scarcity and opportunity cost
- To explain the production possibilities frontier model through a current debate topic
- To practice drawing and manipulating the PPF based on scenarios

## College Board Objectives from the 2019–20 CED

### AP<sup>®</sup> Economics Skill 1. Principles and Models

- **1a.** Describe economic concepts, principles, or models.
- **1b.** Identify an economic concept, principle, or model illustrated by an example.

### AP<sup>®</sup> Economics Skill 2. Interpretation

- **2a.** Using economic concepts, principles, or models, explain how a specific economic outcome occurs or what action should be taken in order to achieve a specific economic outcome.

### AP<sup>®</sup> Economics Skill 3. Manipulation

- **3a.** Determine the outcome of an economic situation using economic concepts, principles, or models.

### AP<sup>®</sup> Economics Skill 4. Graphing and Visuals

- **4a.** Draw an accurately labeled graph or visual to represent an economic model or market.
- **4b.** Demonstrate your understanding of a specific economic situation on an accurately labeled graph or visual.
- **4c.** Demonstrate the effect of a change in an economic situation on an accurately labeled graph or visual.

### AP<sup>®</sup> Economics Learning Objectives

- **Topic 1.1: Scarcity**
  - Define resources and the cause(s) of their scarcity.

## NOTES

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- **Topic 1.3: Production Possibility Curve**
  - Define (using graphs as appropriate) the production possibilities curve (PPC) and related terms.
  - Explain (using graphs as appropriate) how the production possibilities curve (PPC) illustrates opportunity costs, trade-offs, inefficiency, efficiency, and economic growth or contraction under various conditions.
- **Topic 1.4: Opportunity Costs**
  - Define opportunity cost.
  - Explain the opportunity costs associated with choices.

## How to Use This Lesson Plan

Vital to both micro- and macroeconomics is the understanding that we operate in a world of **scarcity**. Whether we are thinking as an individual, a firm, or an institution, our choices also incorporate **opportunity costs**—*What else could we have chosen?*—and this determines how we make the best use of our scarce resources. This lesson introduces students to scarcity and opportunity costs as the **production possibilities frontier (PPF)**.

Economists often refer to the tradeoff between “guns and butter” to demonstrate policy choices between spending national resources on defense or social programs. Obviously both program choices have clear benefits to the American people, but budgets require tough choices! Very similarly there is a growing movement to reform policing in the United States, potentially moving funding from traditional law enforcement and surveillance (“guns”) to programs that promote greater equity and opportunity (“butter”).

It is important to reiterate that the lesson’s goal is to illustrate tradeoffs and practice the production possibility frontier model through real life situations, not to promote a policy or a viewpoint. If students can understand that making such decisions is difficult, then they get the point of the lesson!

Begin the lesson by posting or asking the hook question: *You are the mayor of a major metropolitan area and must make decisions about the allocation of funds. Should you spend more money on policing and law enforcement or on social programs like childcare/early education programs, food support, and safe housing? What is the best argument you can think of for putting resources toward each endeavor?*

Divide the class into two halves, with each coming up with arguments for their assigned viewpoint. Use this introductory debate to guide a discussion of tradeoffs and opportunity costs. Asking “why is this such a difficult decision?” usually elicits this concept from students.

## NOTES

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With the students warmed up, introduce the production possibilities frontier to explain that the activities sit on each axis, and we as a society make choices about how to allocate land, labor, and capital, determining where we fall on the graph. Moreover, devoting more resources to one good/service comes at the expense of the other good/service.

Have students consider the practice questions/scenarios with a peer *before* teaching them the other aspects—shifts, movements, points inside/outside—of the graph. After thinking critically about the scenarios, students may present to the class with a justification for their choices. Only after students have discussed a scenario should you then explain (if necessary) the best possible response(s).

Extension activities could include students providing a personal example; research into another current event that demonstrates these concepts; or a deeper dive into the topic of today's lesson.

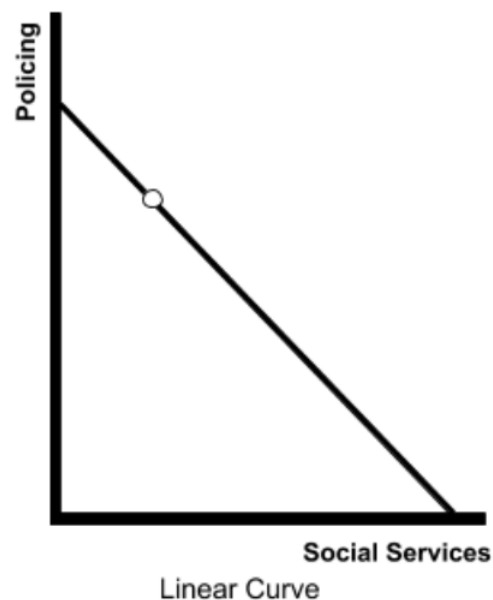
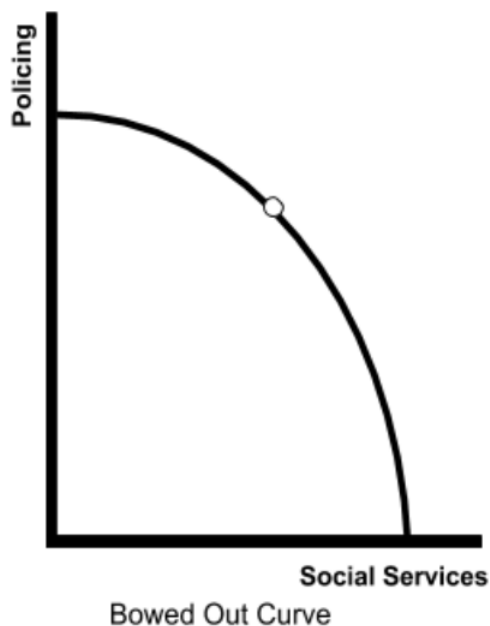
## NOTES

*Write or type in this area.*

You are the mayor of a major metropolitan area and must make decisions about the allocation of funds. Should you spend more money on policing and law enforcement or on social programs like childcare/early education programs, food support, and safe housing? What is the best argument you can think of for putting resources toward each endeavor?

MORE RESOURCES TO POLICING	MORE RESOURCES TO SOCIAL SERVICES
<i>Why is this such a difficult decision?</i>	

### Examples of Production Possibility Frontiers



Should the PPF for this scenario be a bowed-out line? What would each version of the PPF represent about the trade off?

*Write or type your response in this area.*

How can it be argued that this is a microeconomics topic? A macroeconomics topic?

*Write or type your response in this area.*

Consider each scenario with a partner. Draw a PPF graph (always start with the original PPF) and then show how you would represent the scenario given. Write a one-sentence explanation of your drawing.

1. The mayor has decided to move funds from one service directly to the other service.



### Explanation

*Write or type your response in this area.*

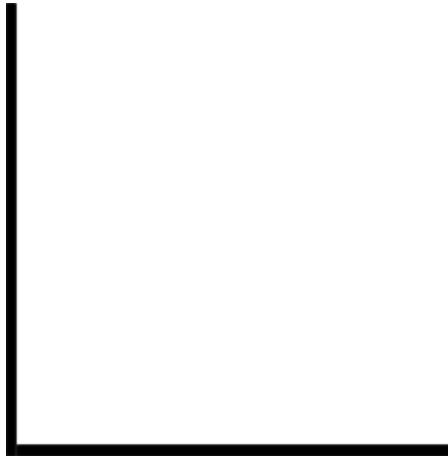
2. The federal government grants all states funding for both activities.



### Explanation:

*Write or type your response in this area.*

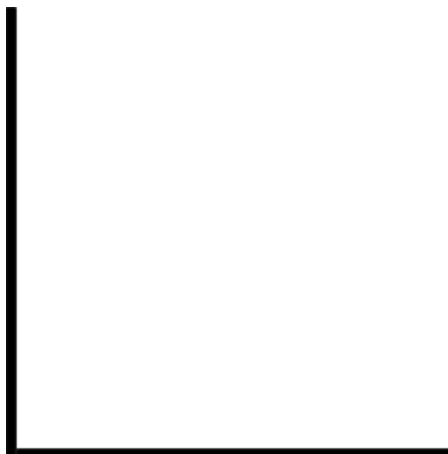
3. A major labor strike disrupts the transportation of workers to service jobs.



**Explanation:**

*Write or type your response in this area.*

4. Technological innovations make police surveillance operations more efficient.



**Explanation:**

*Write or type your response in this area.*

5. A recession leads to loss of tax revenue and cuts across all sectors of public spending.



**Explanation:**

*Write or type your response in this area.*

6. A food bank that provided support to local social services has closed.



**Explanation:**

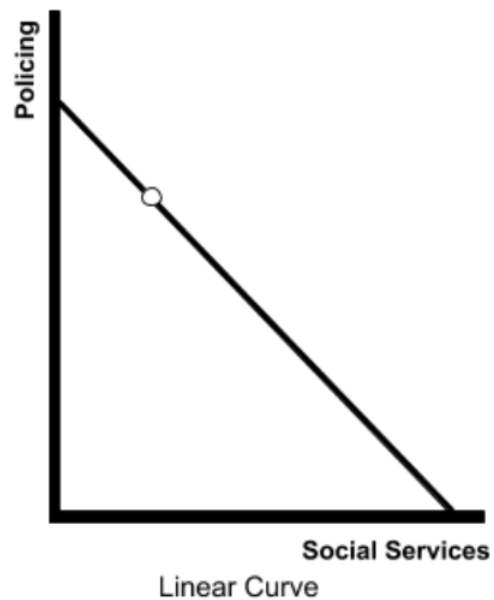
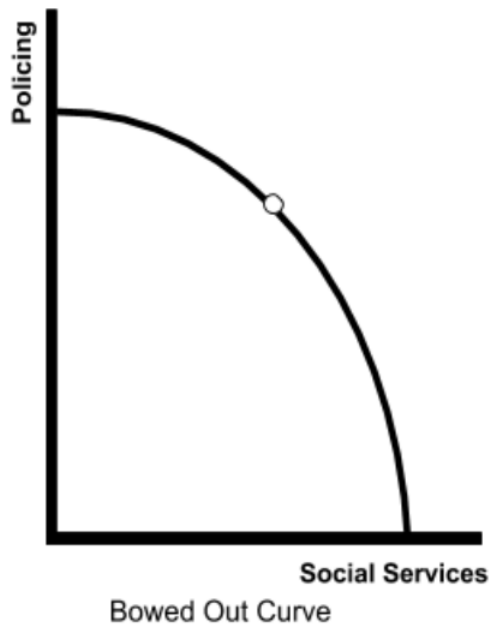
*Write or type your response in this area.*



You are the mayor of a major metropolitan area and must make decisions about the allocation of funds. Should you spend more money on policing and law enforcement or on social programs like childcare/early education programs, food support, and safe housing? What is the best argument you can think of for putting resources toward each endeavor?

MORE RESOURCES TO POLICING	MORE RESOURCES TO SOCIAL SERVICES
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### Examples of Production Possibility Frontiers



Should the PPF for this scenario be a bowed-out line? What would each version of the PPF represent about the trade off?

How can it be argued that this is a microeconomics topic? A macroeconomics topic?

## Answer Key

The tradeoff described is better represented by a curved PPF. This is because all resources used for one activity are not fully adaptable to the other activity. People who work as police may not be able to switch directly over to social services, nor are social service workers able to perform the functions of the police. Likewise, capital and buildings used for one set of activities are also not fully transferable to the other sector.

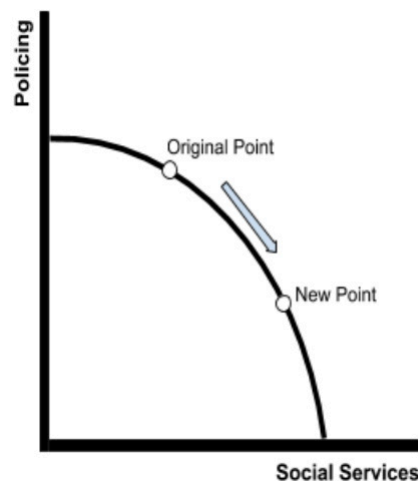
How can it be argued that this is a microeconomics topic? A macroeconomics topic?

**Micro:** Scarcity, deciding the most efficient use of these scarce resources.

**Macro:** Connections to larger long run economic forces. Better policing upholds the rule of law that makes markets work. Better social services may lead to better training and education that makes societies more productive.

Consider each scenario with a partner. Draw a PPF graph (always start with the original PPF) and then show how you would represent the scenario given. Write a one sentence explanation of your drawing.

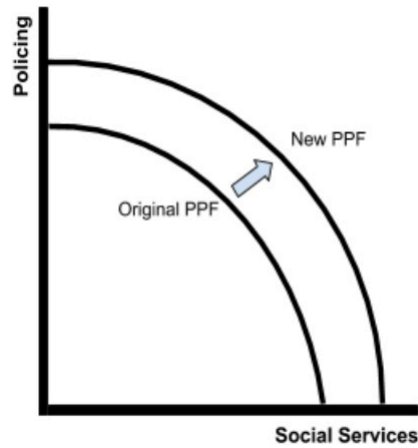
1. The mayor has decided to move funds from one service directly to the other service.



## Explanation

This is a movement along the PPF as resources are reallocated. Given the prompt, students easily could also draw the opposite movement, with more funds going to policing.

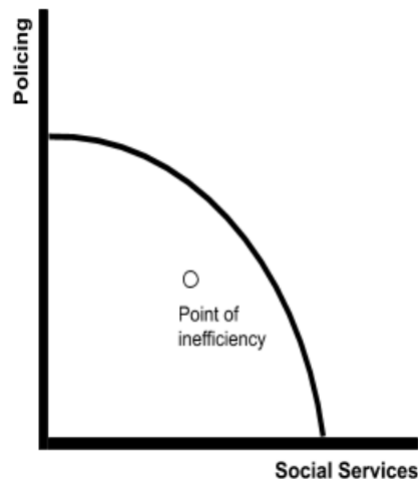
2. The federal government grants all states funding for both activities.



## Explanation

As more resources are allocated to both services, the entire PPF shifts outward.

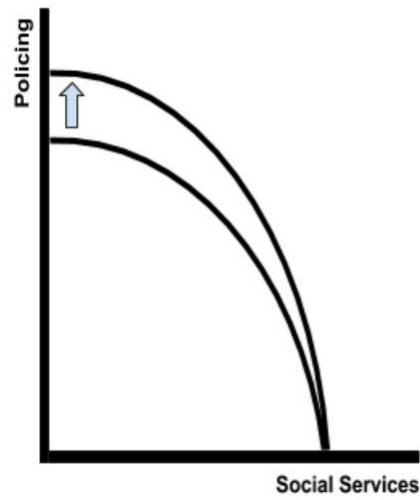
3. A major labor strike disrupts the transportation of workers to service jobs.



## Explanation

With workers from potentially both fields unable to get to work, the economy of these services moves to a point within the PPF. Note that this is a short-term issue and the real capacity to deliver services in the long run is unchanged.

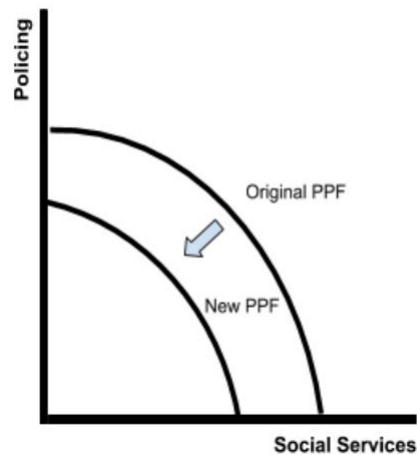
4. Technological innovations make police surveillance operations more efficient.



### Explanation

Only one service is made more efficient by the change in technology so the PPF shifts outward in only one direction.

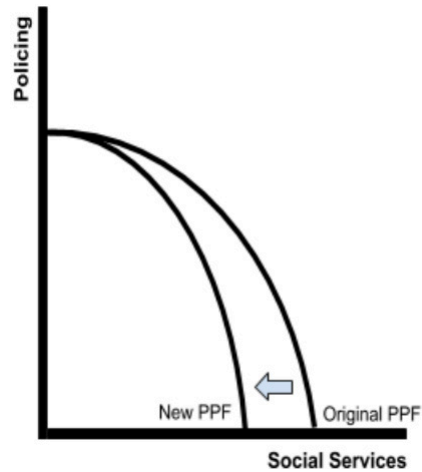
5. A recession leads to loss of tax revenue and cuts across all sectors of public spending.



### Explanation

As fewer resources are allocated to both services, the entire PPF shifts inward.

6. A food bank that provided support to local social services has closed.



## Explanation

The closure of the food bank affects one service, shifting the PPF inward in one direction.