



FEDERAL RESERVE BANK *of* ST. LOUIS
CENTRAL TO AMERICA'S ECONOMY®

MACRO

ECONOMICS

ENTRANCE /
EXIT TICKETS

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Introduction

One of the steepest challenges in AP Macroeconomics is that many students have not been exposed to economic concepts before in their previous coursework. This leads to students being fearful of new material or not truly mastering the ideas completely.

The best way to meet this challenge are to use both familiar materials to present new concepts and frequent familiar material they can relate to and constant informal assessments in low stress ways to check for real understanding. These entrance/exit tickets provide easy strategies for teachers that align directly with the AP curriculum and, subsequently, what they will need to demonstrate on the AP exam.

Entrance tickets should take students no more than two minutes of work to complete. A quick discussion led by the instructor serves as a good introduction to a new economic concept.

Exit tickets should also take less than five minutes at the end of class to reinforce big ideas presented throughout the class period. Emphasize to students that the questions on exit tickets are not formal assessments and are merely intended to give the instructor immediate feedback on that day's lesson. Many teachers encourage students to try their best by only counting the responses as participation or attendance grades.

It is imperative for instructors to use each exit ticket to encourage honest and open feedback from students on where they struggle with that day's lesson. Each exit ticket asks students to write one question about the curriculum content or a statement describing what they are still unsure about. The thermometer at the bottom of every slip is an easy way for teachers to gauge how confident students are with this material. Promote early and often that honestly providing feedback to an instructor during the unit will help avoid confusion as the content builds before the end of a section or course when it's too late. This information allows instructors as soon as the next class period to review/reteach any items that students have lingering struggles with before moving on. Teachers may track student and class confidence in the material with the data tracker spreadsheet at the end of this document.

Some of the activities require students to analyze macroeconomic data from a FRED Dashboard. Either the instructor or students may view this online:

<https://fredaccount.stlouisfed.org/public/dashboard/107318>.

Acknowledgments

Special thanks to the following people who offered support and feedback to this project:

Eva Johnston, Senior Economic Education Specialist
Federal Reserve Bank of St. Louis

Elizabeth Healy, Director AP Curriculum, Instruction & Assessment
The College Board

Diego Mendez-Carbajo, Senior Economic Education Specialist
Federal Reserve Bank of St. Louis

Best of luck this semester to you and your students.

Mike Kaiman, Senior Economic Education Specialist
Federal Reserve Bank of St. Louis

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STUDENT

MACRO ECONOMICS

ENTRANCE /
EXIT TICKETS

Topic 1.1 Scarcity

Name _____

Entrance Ticket

1. Write a definition of what you think economists study.

2. List three things that you use in your life that are scarce.

Name _____

Topic 1.1 Scarcity

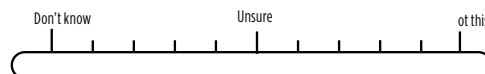
Exit Ticket

1. What are the four major factors of production?

2. When a business purchases a machine to make a product, that is considered what type of production factor?

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what we learned today.



Topic 1.2 Production Possibilities Curve

Name _____

Entrance Ticket

1. Why do we as individuals (and the larger economy as well) have to make decisions over what we will consume/produce?

2. With scarce resources, the United States during World War II endured a “guns vs. butter” debate over economic production. What do you think this means?

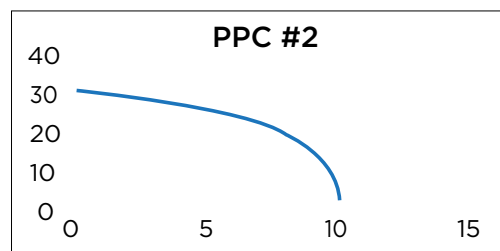
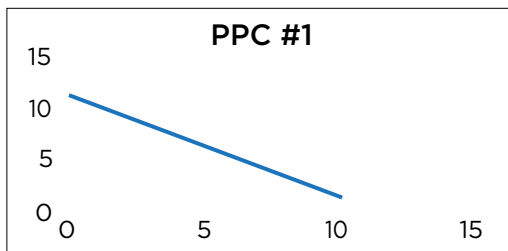
Topic 1.2 Production Possibilities Curve

Name _____

Exit Ticket

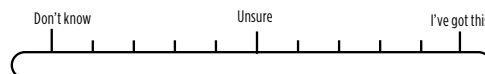
1. What is the definition of opportunity cost?

2. What is the explanation for the difference in shape between the two PPC curves below?



3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 1.3 Comparative Advantage and Trade

Name _____

Entrance Ticket

1. If Kristen has a lower opportunity cost in producing boomerangs over Megan, and Megan can produce harmonicas at a lower opportunity cost, how could both Kristen and Megan benefit if both want boomerangs and harmonicas?

2. Write what you believe the term “mutually beneficial” means to you.

Topic 1.3 Comparative Advantage and Trade

Name _____

Exit Ticket

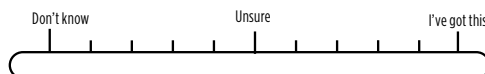
1. Consider the following situation showing opportunity cost. Identify which party (if any) has a comparative advantage.

	Boomerangs	Harmonicas
Kristen	1	4
Megan	2	3

2. Should Megan and Kristen trade with each other? Explain why or why not.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 1.4 Demand

Name _____

Entrance Ticket

1. Say an Xbox originally costs \$400. Microsoft changes the price to \$500. What do you think will happen to the number of Xboxes sold?

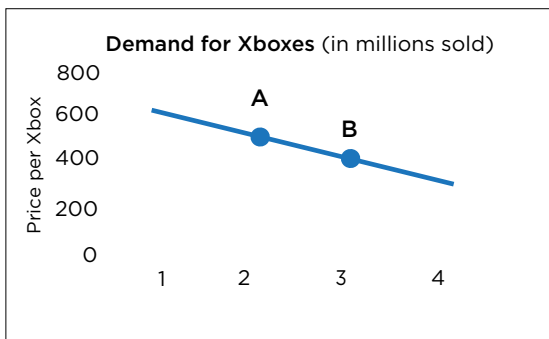
2. Now say Sony releases a new PlayStation that has dramatically better games, graphics, and features. What do you think will happen to the number of Xboxes sold?

Topic 1.4 Demand

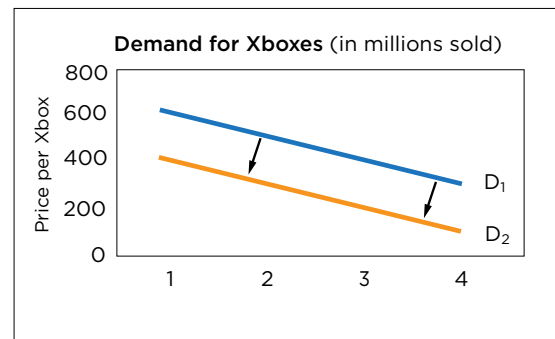
Name _____

Exit Ticket

1. Explain what is happening in this demand curve graph as we move from points A to B in graph 1. Why is there a shift in demand curve for graph 2?



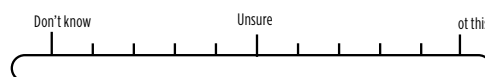
Graph 1



Graph 2

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



**Topic 1.5 Supply
Entrance Ticket**

Name _____

1. Imagine running a lemonade stand and charging \$1.00 per glass. Several customers say after buying a drink that they would've paid \$5.00. With that feedback, circle what changes you would make (if any) to your business.

Price Charged for Lemonade

Amount of Lemonade Made

Decrease No Change Increase

Decrease No Change Increase

**Topic 1.5 Supply
Exit Ticket**

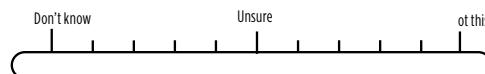
Name _____

1. Explain one reason why a supply curve would SHIFT either to the left or right.

2. How does a change in price of that good or service affect the supply curve?

3. Are you still puzzled about anything we covered? Add one question/comment

4. Fill in your level of confidence in understanding what you learned today.



Topic 1.6 Market Equilibrium & Disequilibrium

Name _____

Entrance Ticket

1. Describe what type of economic condition is going on in each of these photos below.



Costco Meat Section
March 2020



Costco Paper Goods
August 2020

Topic 1.6 Market Equilibrium & Disequilibrium

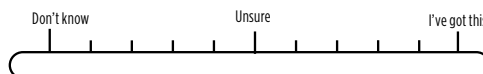
Name _____

Exit Ticket

1. Refer to your entrance ticket. Draw a graph showing what caused the shortage in the Costco meat section. Draw a separate graph showing what caused the surplus in toilet paper at Costco. Be sure to label all parts of your graph.

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.

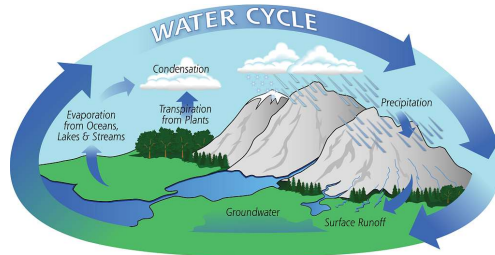


Topic 2.1 Circular Flow and GDP

Name _____

Entrance Ticket

1. Describe what is going on in the illustration below:



Source: [nasa.gov](https://www.nasa.gov)

2. In this circular pattern is any water lost (or gained)?

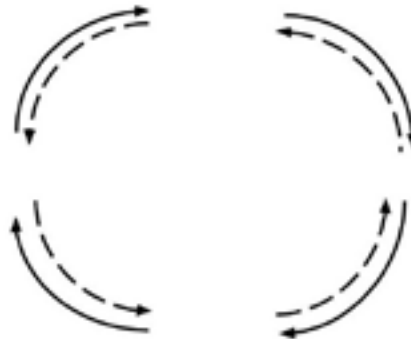
Topic 2.1 Circular Flow and GDP

Name _____

Exit Ticket

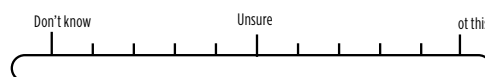
1. List the three possible ways to measure GDP.

2. In the illustration below, identify the major participants and market types that are found in the circular flow diagram.



3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 2.2 Limitations of GDP

Name _____

Entrance Ticket

1. Think about a visit to a doctor's office. What "vital signs" are usually taken?

2. What is the benefit of determining these vital signs? What types of medical issues go unchecked if further examination isn't conducted?

Topic 2.2 Limitations of GDP

Name _____

Exit Ticket

1. Circle all the possible transactions that would NOT be calculated in GDP.

A \$10 birthday check from Grandma

School purchases a popcorn machine for its students at lunch

Purchasing 1 share of Tesla stock

Apple buying screens for its next iPhone

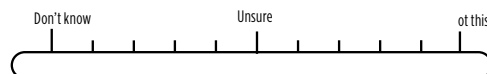
Your midnight fast food bill of \$4.53

A kid selling lemonade for \$1 in their driveway

Buying a \$5000 used car from a friend

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 2.3 Unemployment

Name _____

Entrance Ticket

1. What types of people do you think are part of the labor force in this country?

2. Is there a difference between being out of work and not having enough work?

Topic 2.3 Unemployment

Name _____

Exit Ticket

1. Consider the unemployment graph below. The lower line (U3) is what the government reports as the unemployment rate. The upper line (U6) includes part time, marginal and discouraged workers. Describe how which measure would give a different understanding of the work force in the United States.

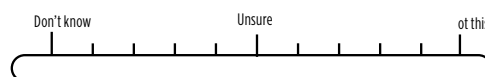


Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 1: Topic 2.3

2. The sum of which two types of unemployment make up the natural rate of unemployment?

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 2.4 Price Indices & Inflation

Name _____

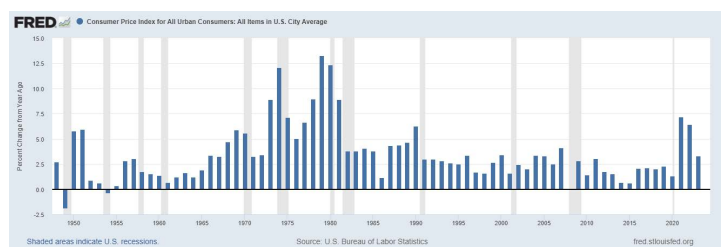
Entrance Ticket

1. When shopping for food at the grocery store, what type of items do you or your family purchase?

Topic 2.4 Price Indices & Inflation

Name _____

Exit Ticket



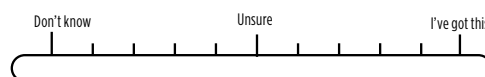
Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graphs 2 & 3: Topic 2.4

1. Consider the graph on the left showing the consumer price index (CPI) from the US Bureau of Labor statistics. In February 2022, CPI was reported as 284.610. One year later it was reported at 301.648. Calculate the annual inflation rate between those two dates as the year-to-year percent growth rate of CPI.

2. Consider the annual CPI inflation rate data from the US Bureau of Labor Statistics on the right. Between 1948 and 2023, when was inflation the highest? When was there deflation or negative inflation rates?

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 2.5 Costs of Inflation

Name _____

Entrance Ticket

1. If you are planning to attend college would you rather pay a student loan that charges 2% interest or 10%? Why?

2. Say that student loan is charging 2% interest. Unexpectedly inflation increases from 2% to 5%. Are you better off, worse off, or the same with inflation being higher than your interest rate?

Topic 2.5 Costs of Inflation

Name _____

Exit Ticket

1. Circle all the groups that are HURT by unexpected inflation.

Savers

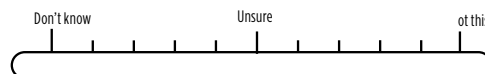
People on Fixed Incomes

Borrowers

2. Explain why those group(s) you circled are hurt by unexpected inflation.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 2.6 Real v. Nominal GDP

Name _____

Entrance Ticket

- Consider the picture showing tuition for St. Louis area private schools in 1969 and the table showing costs in 2022. Using the formula $[1969 \text{ tuition}] \times (271.0/36.7)$ calculate how much that tuition would cost in 2022 adjusted for inflation.

High School Tuitions

Listed in alphabetic order are the archdiocesan, parochial and private Catholic high schools in this archdiocese, along with the basic tuition rates for the academic year beginning September, 1970. Rates are those provided by the schools and listed in the current issue of the school office "Red Book," but are subject to change between now and school opening next year.

ARCHDIOCESAN HIGH SCHOOLS

Bishop DuBourg	} \$250* \$270 for seniors
Corpus Christi	
DeAndreia	
John F. Kennedy	
LaSalle	
McBride	
Mercy	
Rosati-Kain	
Rosary	
St. Mary	
St. Pius X (Festus)	
St. Thomas Aquinas	

PRIVATE HIGH SCHOOLS

Augustinian Academy	\$450†
Chaminade Prep	\$550†
Christian Brothers College	\$525
Cor Jesu Academy	\$400*
DeSmet High School	\$600
Duchesne High School (St. Charles)	\$215*
Incarnate Word Academy	\$425
Nerinx Hall High School	\$500*
Notre Dame High School	\$300*
Sacred Heart Academy (St. Charles)	\$500
St. Alphonsus (Rock) High School	\$100

SEMINARIES

St. Louis Preparatory Seminary North and South	\$250* \$270 for seniors
--	-----------------------------

St. Anthony High School \$200*
\$100 for parishioners

St. Dominic High School \$250*
(O'Fallon) \$270 for seniors

St. Elizabeth Academy \$400

St. Francis Borgia High School \$175*
(Washington) \$130 for parishioners

St. Francis de Sales High School \$170
\$125 for parishioners

St. John the Baptist High School \$190*
\$180* for parishioners

St. Joseph Academy \$500*

St. Louis Priory School \$1250

St. Louis University High School \$465

St. Mark High School \$140*

St. Mary's Academy (O'Fallon) \$250
\$270 for seniors

Ursuline Academy \$425†

Vianney High School \$350†*

Villa Duchesne \$1150

Visitation Academy \$700

Xavier High School \$350

All figures are for tuition only, and do not include such items as registration fees, uniforms, books, bus transportation and lunch. These may mean an additional \$25 to \$250 per year, depending on the school.

Asterisk (*) indicates an announced policy of family tuition rates when more than one child is enrolled.

† Includes all fees except books.

Source: St. Louis Review 11/7/69

SCHOOL	TUITION IN 1969 / 2022
Chaminade Prep	\$550 / \$23,500
Duchesne	\$215 / \$11,400
STL Priory	\$1,250 / \$25,990
Ursuline	\$425 / \$15,025
Visitation	\$700 / \$22,555

SCHOOL	1969 ADJUSTED TUITION
Chaminade Prep	
Duchesne	
STL Priory	
Ursuline	
Visitation	



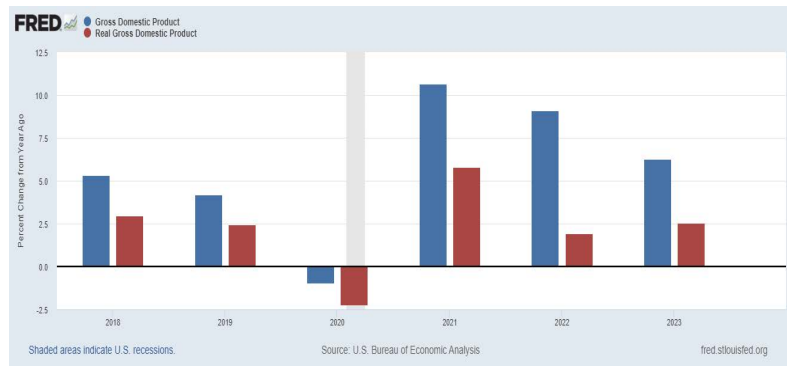
Topic 2.6 Real v. Nominal GDP

Name _____

Exit Ticket

1. How does the GDP deflator correct the differences between nominal and real values?

2. Consider bar graph below showing GDP data from the Bureau of Economic Analysis. The blue bars represent the annual growth rate of nominal GDP, while the red bars show the annual growth rate of real GDP. Explain why both rates were negative in 2020.

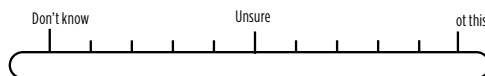


Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 4: Topic 2.6

3. Using the same graph describe why the blue bars are much taller than the red after 2020 than before?

4. Are you still puzzled about anything we covered? Add one question/comment.

5. Fill in your level of confidence in understanding what you learned today.



Topic 2.7 Business Cycles

Entrance Ticket

1. How do you think the US economy is doing right now? Provide one example to support your point.

2. In the long run, what do you think is the trend in real GDP?

Topic 2.7 Business Cycles

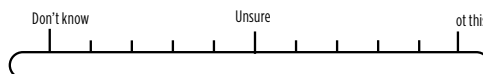
Name _____

Exit Ticket

1. Draw a graph showing a business cycle that begins with a recession and ends with an expansionary period that returns to the long run real GDP trend line. Be sure to accurately label expansionary and contractionary periods in your cycle.

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 3.1 Aggregate Demand

Entrance Ticket

1. REVIEW! If price levels increase due to inflation, will consumers demand more or less of those items?

2. REVIEW! Why is any demand curve downward sloping?

Topic 3.1 Aggregate Demand

Name _____

Exit Ticket

1. Explain how a trade war using tariffs would cause the aggregate demand curve to shift.

2. Circle all descriptions that would cause the aggregate demand curve to shift right. Explain why.

Decreased Government Spending

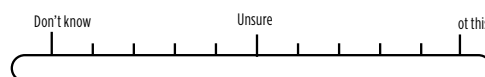
Decreased Taxes

Increased Consumer Income

Increasing Prices for Exports

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 3.2 Multipliers

Entrance Ticket

1. Someone gives you \$20 today. What will you do with it?

2. If you chose to spend some (or all) of that \$20, what would you spend it on?

Topic 3.2 Multipliers

Name _____

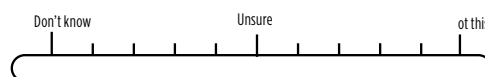
Exit Ticket

1. A government creates a lump sum tax when the Marginal Propensity to Consume (MPC) is 0.6. What's the value of the tax multiplier? SHOW YOUR WORK.

2. Explain why Marginal Propensity to Consume (MPC) and Marginal Propensity to Save (MPS) must always equal 1.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 3.3 Short Run Aggregate Supply

Entrance Ticket

1. Diego makes the best paella in town. When word gets out about how good his rice dishes are people start offering to pay more money than his original price. Should Diego make more, less or the same amount of paella? Why?

2. Now assume there is a worldwide saffron shortage (a critical ingredient in Diego's dish). What will happen to the total supply of paella, including Diego's?

Topic 3.3 Short Run Aggregate Supply

Name _____

Exit Ticket

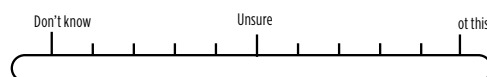
1. Consider the following three headlines from CNBC and indicate if short-run aggregate supply would increase, decrease or be indeterminate.

Biden Signs \$1.9 Trillion Covid Relief Bill, Clearing Way for Stimulus Checks March 11, 2021	Senate, House Vote to Back Biden Oil Ban on Russia April 7, 2022	Worker Productivity Rises 6.6% in 4th Quarter March 3, 2022

2. Draw an AS/AD model in equilibrium with PL indicating Price Level and Y representing Real GDP. Don't forget to label everything appropriately.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 3.4 Long Run Aggregate Supply

Name _____

Entrance Ticket

1. Brad made \$100,000 last year and received a \$10,000 raise. This year, inflation suddenly increased and remained at 10%. Explain whether Brad is better off, worse off, or the same at the end of the year with his raise?

2. If you work, when was the last time you received a raise? Do you think wages or inflation change faster?

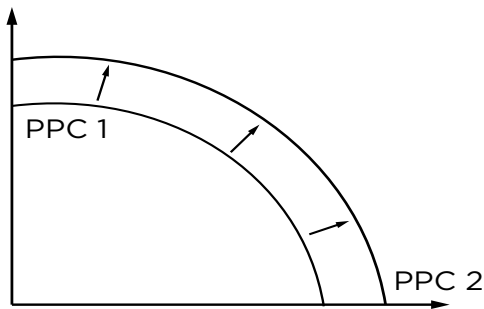
Topic 3.4 Long Run Aggregate Supply

Name _____

Exit Ticket

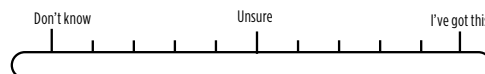
1. Explain how sticky wages affect the long-run aggregate supply curve.

2. Recall the production possibilities curve from unit 1. Draw a LRAS graph that illustrates the change in the PPC curve shown below. Identify on the graph Y for original real GDP and Y1 for real GDP after the shift.



3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 3.5 Equilibrium in the AD/AS Model

Name _____

Entrance Ticket

1. REVIEW! In the short run, what is balanced when aggregate supply and aggregate demand meet?

Topic 3.5 Equilibrium in the AD/AS Model

Name _____

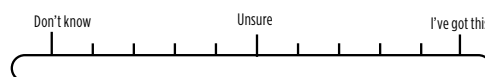
Exit Ticket

1. Draw an AS/AD model with long run aggregate supply in equilibrium with all axes and lines labeled correctly. .

2. If an economy is in equilibrium like the graph you just drew above, describe the impact that has on employment.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today



Topic 3.6 Changes in the Short Run AD/AS Model Name _____

Entrance Ticket

1. What would happen to the price of milk chocolate bars if there was a devastating natural disaster that affected the world's cacao trees?

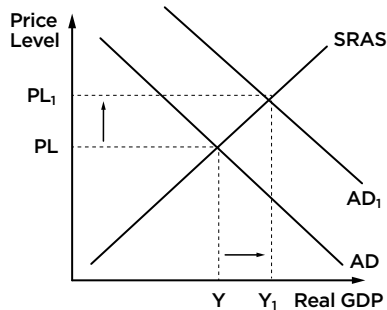
2. What would happen to the amount of fidget spinners if nobody wants them anymore since kids are now playing with Popits?

Topic 3.6 Changes in the Short Run AD/AS Model Name _____

Exit Ticket

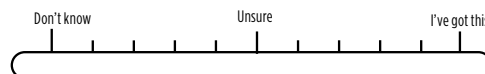
1. Draw a graph showing the change in the AD/AS model if a trade war with China reduces the amount of EXPORTS. Label the shift in price level PL to PL₁ and real GDP change Y to Y₁.

2. Describe what type of inflation is occurring in the AD/AS model below.



3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 3.7 Long-Run Self-Adjustment

Name _____

Entrance Ticket

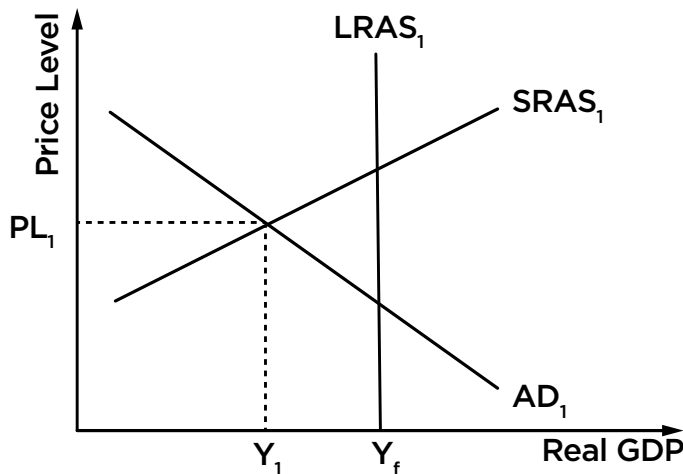
1. REVIEW! In a business cycle, what are the two phases of an economy that exist on either side of the long-run trend of real GDP?

Topic 3.7 Long-Run Self-Adjustment

Name _____

Exit Ticket

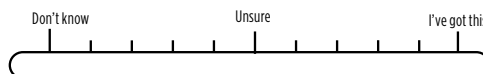
1. First, describe the type of disequilibrium occurring in the AD/AS model below. Next, draw on the existing graph how the economy would adjust to return to equilibrium. Finally, explain what will happen to both price level and unemployment with this return to equilibrium.



From AP Macroeconomics Course & Exam Description, effective Fall 2020 (c) The College Board. Used with permission. apcentral.collegeboard.org

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 3.8 Fiscal Policy

Name _____

Entrance Ticket

1. List three things you think are the largest part of the federal government's annual spending.

2. REVIEW! Write the formula for calculating GDP.

Topic 3.8 Fiscal Policy

Name _____

Exit Ticket

1. Circle all the actions the federal government could take to enact a contractionary fiscal policy.

Raise Taxes

Decrease Govt. Spending

Increase Deficit Spending

Lower Taxes

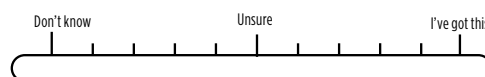
Increase Govt. Spending

Decrease Deficit Spending

2. Explain why, during an expansionary policy, the government's spending multiplier is always greater than the tax multiplier.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 3.9 Automatic Stabilizers

Name _____

Entrance Ticket

1. Define the difference between discretionary and mandatory.

2. Do you think the federal government spends more on discretionary or mandatory programs?

Topic 3.9 Automatic Stabilizers

Name _____

Exit Ticket

1. The United States finds itself in the middle of a recession. Circle all the automatic stabilizers the federal government has at its disposal to enact expansionary fiscal policy.

Food Stamp Assistance

Stimulus Checks

New Corporate Tax Cut

New Infrastructure Projects

Unemployment Benefits

Progressive Income Tax System

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 4.1 Financial Assets

Name _____

Entrance Ticket

1. You are in a strange American city at midnight, and you need to buy gas. You have a \$100 bill, 200 Mexican pesos, a credit card, 1 bitcoin and an American Gold Eagle coin. Which would be the easiest financial instrument to purchase gas at midnight?

Topic 4.1 Financial Assets

Name _____

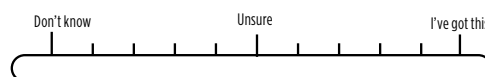
Exit Ticket

1. List the following financial assets in order from most liquid to least liquid: Certificate of Deposits (CDs) / Stocks / Cash / Checks

2. What is the opportunity cost of holding currency as opposed to other types of financial assets?

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 4.2 Nominal v. Real Interest Rates

Name _____

Entrance Ticket

1. List three examples from your own or your family's life that would require you to pay attention to interest rates.

2. Suppose you take out a \$100,000 student loan for college. Would you rather pay 2% or 10% interest?

Topic 4.2 Nominal v. Real Interest Rates

Name _____

Exit Ticket

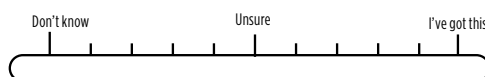
1. Let's return to that \$100,000 student loan you took at 2% interest. If the inflation rate suddenly rises to 7%, are you (the person paying back the loan) or the bank (which gave you the loan) better off, worse off, or the same? Explain your answer.

2. Calculate the real interest rate in the table below:

Year	Nominal Interest Rate (%)	Inflation Rate (%)	Real Interest Rate (%)
1980	13.74	12.42	
2010	4.69	0.95	
2021	3.11	1.70	

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 4.3 Definition, Measure & Functions of Money Name _____

Entrance Ticket

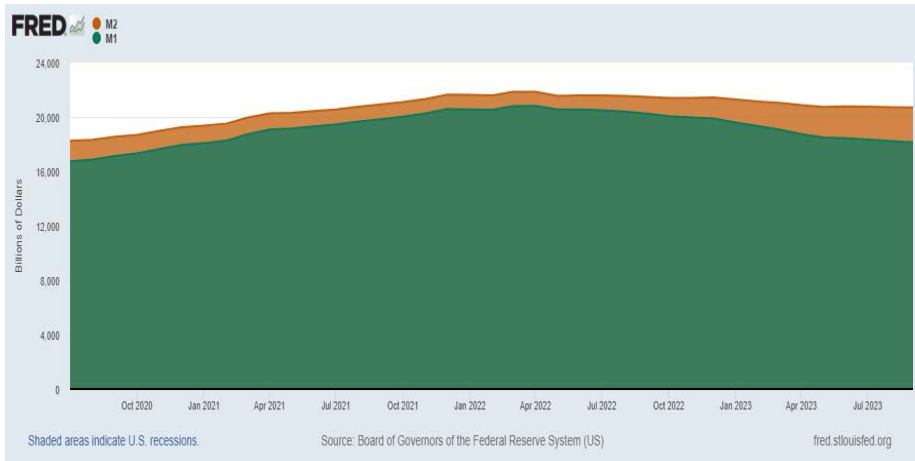
1. List three reasons why a \$5.00 bill is a good form of money.

Topic 4.3 Definition, Measure & Functions of Money Name _____

Exit Ticket

1. List the three functions of money.

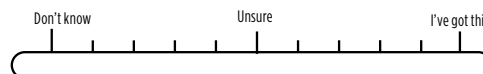
2. Consider the FRED graph below. Explain why M2 is always a larger figure than M1.



Graph available on FRED Dashboard
<https://fredaccount.stlouisfed.org/public/dashboard/78495> Graph 5: Topic 4.3

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 4.4 Banking & Money Supply Expansion Name _____

Entrance Ticket

1. Quick poll: If you open a savings account at any bank and deposit \$500, does the bank just keep all \$500 in a vault for safekeeping?

YES

NO

Topic 4.4 Banking & Money Supply Expansion Name _____

Exit Ticket

1. Complete a balanced T-account sheet by filling in the correct amount of required reserves.

Bank A			
Assets		Liabilities	
Required reserves		Demand deposits	\$100,000
Excess reserves	\$5,000		
Loans	\$85,000	Owner's equity	\$0

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2. Assume you deposit \$10,000 in a bank that will loan out all its excess reserves. If the required reserve ratio is 5%, fill in the table below.

Required Reserve Ratio	Required Reserves	Excess Reserves	Deposit Expansion Multiplier	Maximum Increase in Money Supply
5%				

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 4.5 The Money Market

Name _____

Entrance Ticket

1. Who do you think controls the supply of money in the United States?

2. Do you think more Americans would buy a new house—and take out a 30-year mortgage—if interest rates were increasing or decreasing?

Topic 4.5 The Money Market

Name _____

Exit Ticket

1. Briefly explain why the money supply curve is completely vertical.

2. Draw a money market graph showing an increase in the money supply. Be sure to label what impact that shift has on real interest rates showing the shift from i to i_1 .

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 4.6a Monetary Policy

Name _____

Entrance Ticket

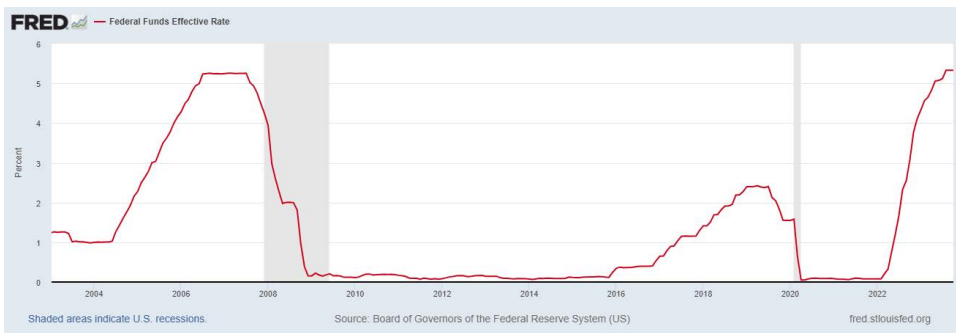
- REVIEW! Describe how fiscal policy can help bring about stability in the macro economy.

Topic 4.6a Monetary Policy

Name _____

Exit Ticket

- Consider the FRED graph below showing the effective federal funds rate from the Board of Governors of the Federal Reserve. Note the gray bars in the background indicate periods of recession. Identify what type (expansionary or contractionary) of monetary policy the FOMC was conducting during the years in the table below.

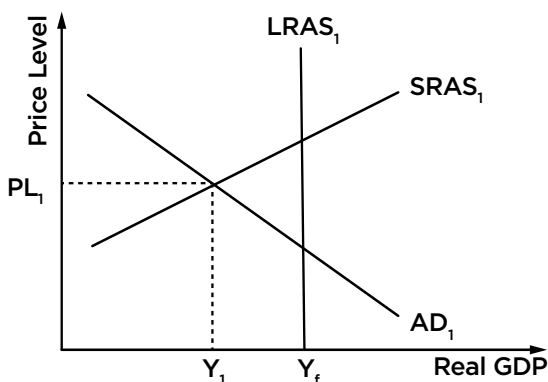


Years	Types of Monetary Policy
2004-06	
2007-09	
2020-22	
2022-23	

Graph available on FRED Dashboard

<https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 6: Topic 4.6

- Based on the graph below, describe what monetary policy action the Fed could take to bring the economy back into equilibrium. Draw on the existing graph how that policy would affect output and price level.



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Topic 4.6a Monetary Policy (cont)

Exit Ticket

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 4.6b Monetary Policy Tools
Entrance Ticket

NAME: _____

1. What is the purpose of the bumpers seen in the picture of the bowling alley below?



2. If you buy a new pair of collectors' edition sneakers and a friend offers you twice what you paid, would you sell them?

Topic 4.6b Monetary Policy Tools
Exit Ticket

NAME: _____

1. Which of the following rates/tools does the Federal Reserve use to implement modern monetary policy? Circle below.

Federal Funds Rate

Overnight Reverse Repurchase Agreement

Prime Rate

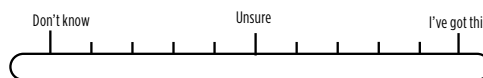
Interest on Reserves Balance

Required Reserve Ratio

Federal Income Tax Rate

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 4.7 The Loanable Funds Market

Name _____

Entrance Ticket

1. REVIEW! If the Federal Reserve decreases the money supply, what will happen to interest rates?

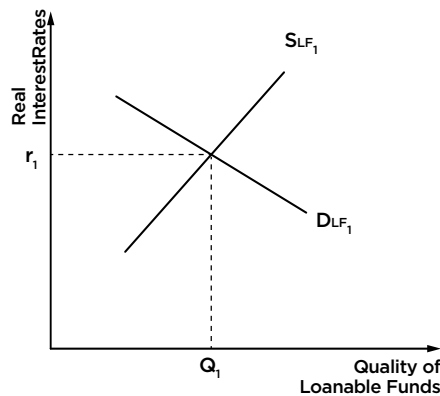
2. REVIEW! If the marginal propensity to save was 0.2 in 2018, but increased to 0.4 in 2020, what does that indicate?

Topic 4.7 The Loanable Funds Market

Name _____

Exit Ticket

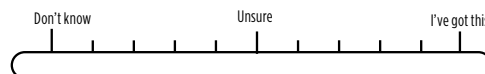
1. Draw on the graph below how the loanable funds market would change if the federal government stopped all deficit spending. Be sure to label what will happen to real interest rates from r_1 to r_2 and the quantity of loanable funds from Q_1 to Q_2 .



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2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 5.1 Fiscal & Monetary Policy in the Short Run Name _____

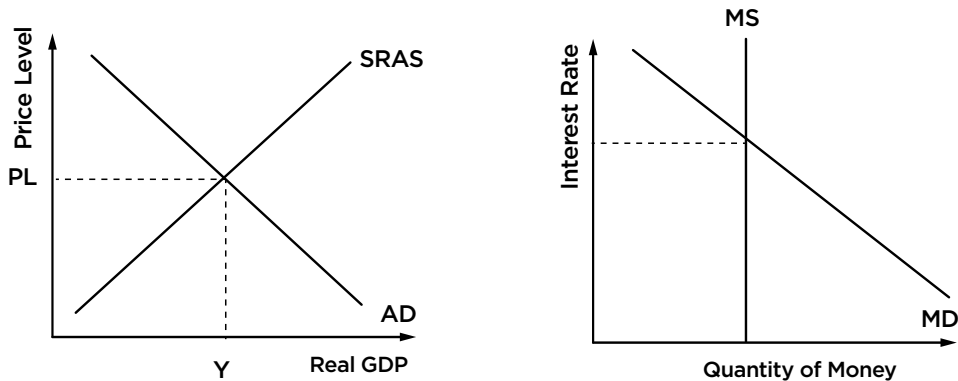
Entrance Ticket

- REVIEW! Draw two aggregate demand and supply graphs showing an economy in recession and inflationary disequilibrium.

Topic 5.1 Fiscal & Monetary Policy in the Short Run Name _____

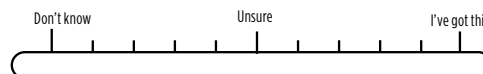
Exit Ticket

- Inflation stands at 10% while unemployment is at an all-time low. Describe what kind of fiscal and monetary policy a government and central bank should deploy and how those actions would impact aggregate demand, aggregate supply on the left graph. Also show the change in interest rates and quantity of money in the money market on the right graph.



- Are you still puzzled about anything we covered? Add one question/comment.

- Fill in your level of confidence in understanding what you learned today.

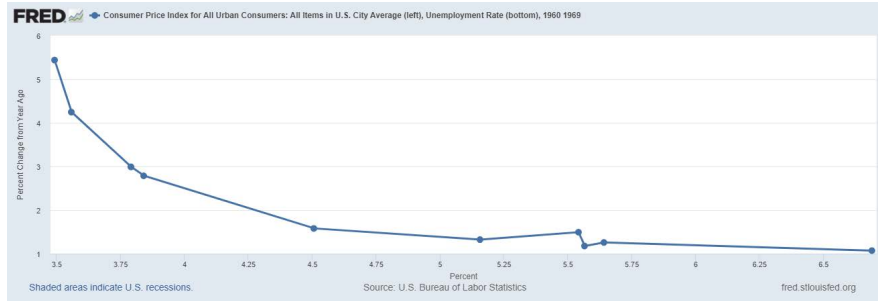


Topic 5.2 The Phillips Curve

Name _____

Entrance Ticket

- REVIEW! In an aggregate demand/supply model there is a link between rising price levels and _____
- Consider the FRED scatter plot showing annual pairs of unemployment rate data (horizontal axis) and the inflation rate from CPI (vertical axis) as reported by the US Bureau of Labor Statistics between 1960-69. Describe the relationship with both economic indicators.



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 7: Topic 5.2

Topic 5.2 The Phillips Curve

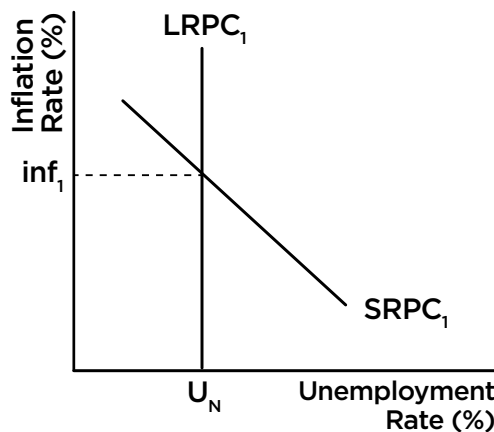
Name _____

Exit Ticket

- Circle the appropriate option

Situation	Impact on Phillips Curve			
	Move	Shift	Left	Right
An oil supply shock that suddenly increases prices will do what?				
A rapid decrease in consumer spending will do what?				

- On the graph below, correctly draw a point labeled A showing an inflationary gap and a point B showing a recessionary gap. *Example*



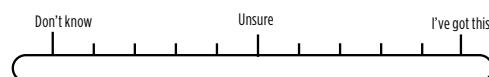
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Topic 5.2 The Phillips Curve (cont.)

Exit Ticket

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 5.3 Money Growth & Inflation

Name _____

Entrance Ticket

1. How often do you think a physical single dollar bill changes hands in a week?

2. If a single dollar bill changes hands more often, what consequence do you think that has on GDP or inflation?

Topic 5.3 Money Growth & Inflation

Name _____

Exit Ticket

1. Write the formula for the Quantity Theory of Money below.

2. Calculate MV from data sourced from FRED for the first two quarters of 2020 during the COVID shutdown:

	M2 Money Supply (in billions)	Money Velocity	MV
Q2 2023	20,784.9	1.302	
Q3 2023	20,721.9	1.327	
		Change in MV	

If full employment stayed the same, what would happen to the price level?

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 5.4 Government Deficits & Debt

Name _____

Entrance Ticket

1. REVIEW! How can a government fund its fiscal policy if it doesn't take in enough revenue through taxes?

2. As of November 2023, the national debt stood at approximately \$33.7 trillion. What consequences do you think this has on the economy?

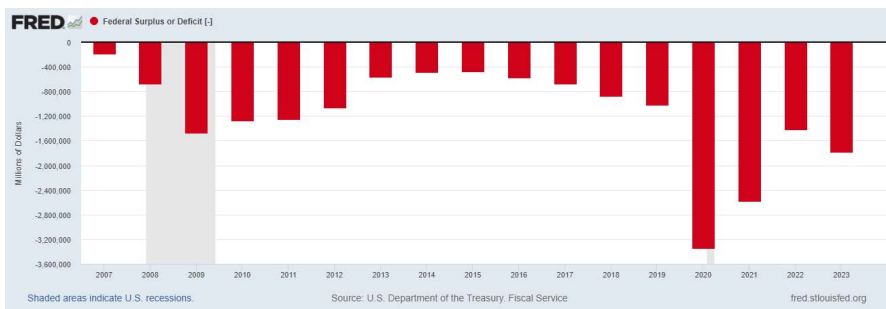
Topic 5.4 Government Deficits & Debt

Name _____

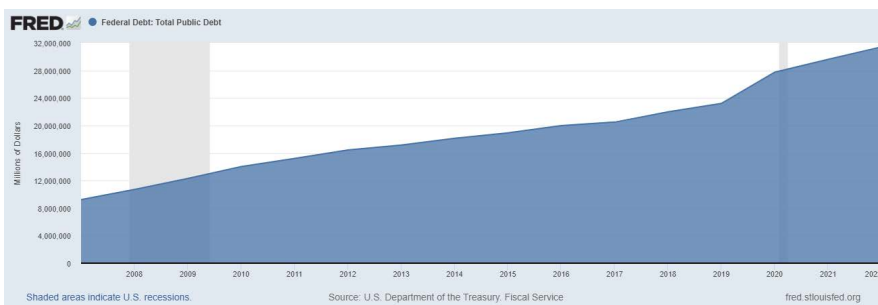
Exit Ticket

1. Graph 1 shows the federal surplus or deficit from the U.S. Treasury. Graph 2 shows the total federal debt. Describe the relationship linking both economic indicators.

Graph 1



Graph 2



Graph available on FRED Dashboard

<https://fredaccount.stlouisfed.org/public/dashboard/107318> Graphs 8 & 9: Topic 5.4



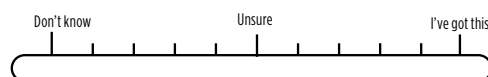
Topic 5.4 Government Deficits & Debt (cont.)

Name _____

Exit Ticket

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.

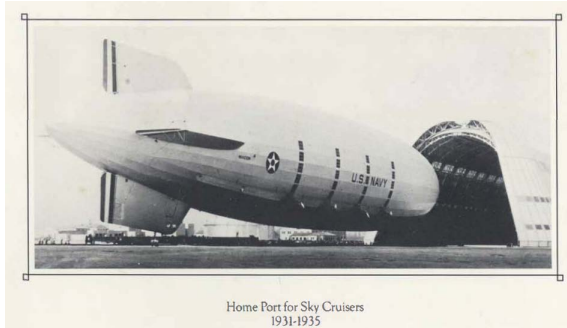


Topic 5.5 Crowding Out

Name _____

Entrance Ticket

1. What will happen to the amount of space in this hangar after the blimp is completely inside?



Home Port for Sky Cruisers
1931-1935

Moffett Field, CA. Image courtesy historicproperties.arc.nasa.gov

2. REVIEW! True or False: The federal government can set interest rates in the loanable funds market.

Topic 5.5 Crowding Out

Name _____

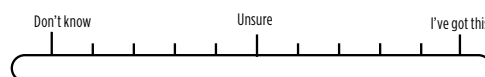
Exit Ticket

1. Assume a government commits to a rapid and dramatic deficit spending increase. Draw the impact on the overall loanable funds market. Be sure to label the change in interest rate on the Y-axis, the change in the quantity of loanable funds after government deficit spending AND the amount (and interest rate) left for private investment in the loanable funds market.

2. Assume that sudden and massive government deficit spending has extreme consequences in the loanable funds market. How might that affect real GDP?

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.

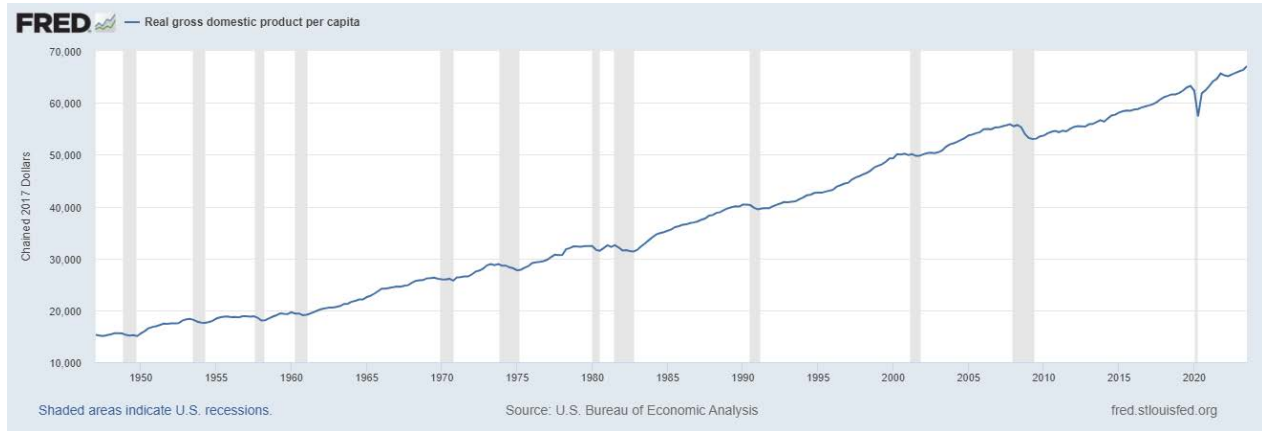


Topic 5.6 Economic Growth

Name _____

Entrance Ticket

1. Consider the real gross domestic product (GDP) per capita data from the US Bureau of Economic Analysis in the graph below. Real GDP per capita is the value of inflation-adjusted GDP divided by the population of the nation. Describe the overall trend of the data since 1947.



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 9: Topic 5.6

Topic 5.6 Economic Growth

Name _____

Exit Ticket

1. Circle all the following options that would help create economic growth.

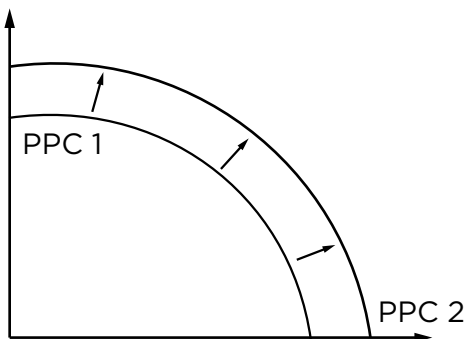
Increasing Population

New Technology

Higher Education Attainment by Workers

Increased Capital Investment

2. Consider the production possibilities curve below. Then draw a long run supply curve graph showing the equivalent change to the PPC graph provided. Identify on the graph Y for original real GDP and Y_1 for real GDP after the shift.



Topic 5.6 Economic Growth (cont.)

Name _____

Exit Ticket

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 5.7 Public Policy & Economic Growth

Name _____

Entrance Ticket

1. What are three ways the federal government could potentially assist in creating economic growth?

2. How can patents like this (for Google's page rank algorithm) inspire economic growth?

12) **United States Patent** (10) Patent No.: **US 6,285,999 B1**
Page (45) Date of Patent: **Sep. 4, 2001**

54) **METHOD FOR NODE RANKING IN A LINKED DATABASE** (57) **ABSTRACT**

75) Inventor: **Lawrence Page**, Stanford, CA (US) A method assigns importance ranks to nodes in a linked database, such as any database of documents containing citations, the world wide web or any other hypermedia database. The rank assigned to a document is calculated from the ranks of documents citing it. In addition, the rank of a document is calculated from a constant representing the probability that a browser through the database will randomly jump to the document. The method is particularly useful in enhancing the performance of search engine results for hypermedia databases, such as the world wide web, whose documents have a large variation in quality.

73) Assignee: **The Board of Trustees of the Leland Stanford Junior University**, Stanford, CA (US)

*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

21) Appl. No.: **09/004,827**

22) Filed: **Jan. 9, 1998**

<https://patents.google.com/patent/US6285999>

Topic 5.7 Public Policy & Economic Growth

Name _____

Exit Ticket

1. Describe how a reduction in corporate taxes leads to economic growth.

2. Draw an AD/AS graph showing the impact of supply side economic policies. Be sure to include how price level and output are affected by the change.

3. Are you still puzzled about anything we covered? Add one question/comment.

4. Fill in your level of confidence in understanding what you learned today.



Topic 6.1 Balance of Payment Accounts

Name _____

Entrance Ticket

1. REVIEW! What part of the GDP formula accounts for international trade?

2. If an American tech firm builds a smartphone factory in Shanghai, what kind of impact does that have on the US economy?

Topic 6.1 Balance of Payment Accounts

Name _____

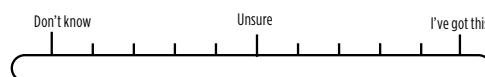
Exit Ticket

1. Identify below whether each scenario is a current or financial account transaction and if it should be listed as a credit or debit to that account.

	Current Account	Financial Account	Credit (+)	Debit (-)
The Spanish fashion store Zara buys a mall in Miami				
Guatemalan cooks at a restaurant send 25% of their paychecks back home to their families				
AlyciaCo (an American health food company) sells \$25,000 of Kombucha to a grocery store chain in Germany				
Disney invests \$100 million to build a new theme park in the United Arab Emirates				
MadameCorp (a French bank) purchases \$50,000 in US treasury bonds				

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 6.2 Exchange Rates

Name _____

Entrance Ticket

1. If you've ever traveled outside the U.S., did you feel that goods and services were more expensive, less expensive or about the same as the goods and services at home?

2. If you haven't traveled outside the US, would you want to visit a nation where the currency is more or less valuable than the dollar? Why?

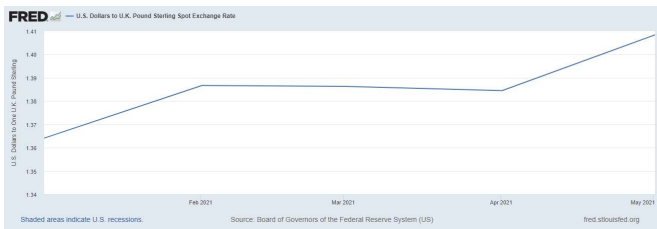
Topic 6.2 Exchange Rates

Name _____

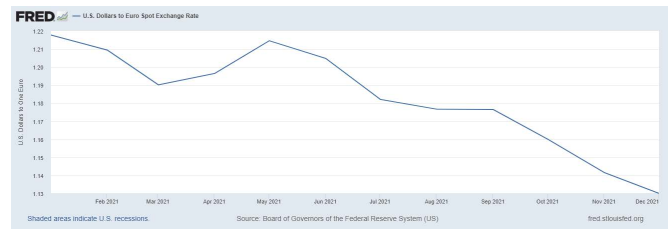
Exit Ticket

1. FRED Graph 1 shows the dollar (USD) / pound (GBP) spot exchange rate in 2021. Graph 2 shows the dollar (USD) / Euro (EUR) spot exchange rate in 2021. Both graphs use information from the Board of Governors of the Federal Reserve System. Identify in the space below if the dollar is appreciating or depreciating in relation to the other currency.

Graph 1: Dollar to UK Pound



Graph 2: Dollar to Euro

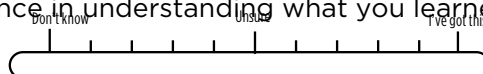


Graph available on FRED Dashboard

<https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 10a & 10b: Topic 6.2

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 6.3 Foreign Exchange Markets

Name _____

Entrance Ticket

1. REVIEW! If the dollar is appreciating against the yen, will Americans buy more or fewer items from Japan?

2. Imagine you are an investor in Australia. Would you rather place your savings in a Sydney bank offering 0.41% interest annually or a US bank offering 1.8% interest annually?

Topic 6.3 Foreign Exchange Markets

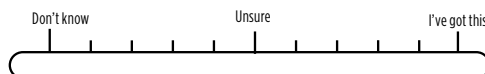
Name _____

Exit Ticket

1. Consider what will happen to exchange rates if inflation spikes in India. Draw TWO FOREX graphs showing what will happen to the quantity of dollars AND Rupees. (Note: Be sure to label your axes correctly.)

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 6.4 Policies & Econ Conditions on FOREX Market

Name _____

Entrance Ticket

1. What would happen to international trade with China if the US instituted tariffs on Chinese goods?

2. If there is a massive recession in the United States, what impact will it have on German GDP?

Topic 6.4 Policies & Econ Conditions on FOREX Market

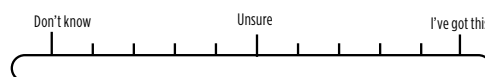
Name _____

Exit Ticket

1. Consider what will happen if the Federal Reserve initiates an expansionary monetary policy and interest rates fall. If interest rates in Brazil do not change, what will happen in the foreign exchange markets? Draw TWO FOREX graphs showing what will happen to the quantity of dollars AND the Brazilian real. (Note: Be sure to label everything including your axes correctly.)

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 6.5 Changes in FOREX Market & Net Exports

Name _____

Entrance Ticket

1. REVIEW! If exports increase in the United States and imports stay constant, what will happen to real GDP?

2. REVIEW! If imports are becoming cheaper for American consumers to purchase, does that indicate the US dollar is appreciating or depreciating?

Topic 6.5 Changes in FOREX Market & Net Exports

Name _____

Exit Ticket

1. Circle which groups would benefit from the US dollar appreciating in value to the euro.

US Exporters of Wheat

Italian Tourists Visiting the US

French importers of Hawaiian Coffee

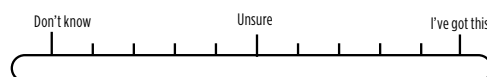
German Exporters of Lederhosen

US Importers of Italian Pasta

American Tourists in Spain

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



Topic 6.6 Real Interest Rates and Capital Flows

Name _____

Entrance Ticket

1. REVIEW! What is the difference between the financial and current accounts in the balance of payments system?

2. REVIEW! If a central bank conducts contractionary monetary policy, what will happen to real interest rates in the short term? How might this change affect foreign investment?

Topic 6.6 Real Interest Rates and Capital Flows

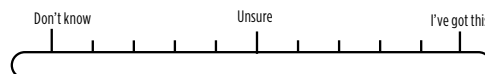
Name _____

Entrance Ticket

1. Assume the US will import more oil from Saudi Arabia. Draw THREE graphs showing what will happen to the exchange rate between the dollar and the Saudi riyal AND how that exchange rate change will affect capital flows in the US loanable funds market.

2. Are you still puzzled about anything we covered? Add one question/comment.

3. Fill in your level of confidence in understanding what you learned today.



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MACRO ECONOMICS | RESOURCES

Topic 1.1 Scarcity

Entrance Ticket

1. Write a definition of what you think economists study.

Answers will vary, but generally economics is the study of scarcity and choice, specifically the effort to balance scarce resources and unlimited wants.

2. List three things that you use in your life that are scarce.

Answers will vary.

Topic 1.1 Scarcity

Exit Ticket

1. What are the four major factors of production?

land

labor

capital

entrepreneurship

2. When a business purchases a machine to make a product, that is considered what type of production factor?

capital



Topic 1.2 Production Possibilities Curve

Entrance Ticket

1. Why do we as individuals (and the larger economy as well) have to make decisions over what we will consume/produce?

Answers will vary but should include that scarce resources cannot fulfill all our wants at the same time.

2. With scarce resources, the United States during World War II endured a “guns vs. butter” debate over economic production. What do you think this means?

Answers will vary, but students should understand that decisions must be made when it comes to production at any given time—in this case, domestic vs. military goods.

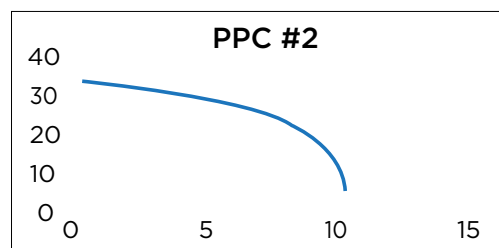
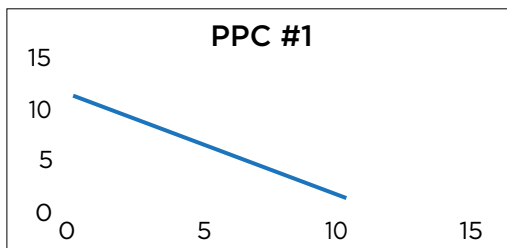
Topic 1.2 Production Possibilities Curve

Exit Ticket

1. What is the definition of opportunity cost?

It is the value of the next-best alternative when a decision is made; it's what is given up

2. What is the explanation for the difference in shape between the two PPC curves below?



Students need to describe that PPC #1 has constant opportunity costs, while PPC #2 has increasing opportunity costs.



Topic 1.3 Comparative Advantage and Trade

Entrance Ticket

1. If Kristen has a lower opportunity cost in producing boomerangs over Megan, and Megan can produce harmonicas at a lower opportunity cost, how could both Kristen and Megan benefit if both want boomerangs and harmonicas?

Answers will vary but most students should see that Kristen and Megan can both benefit by trading with each other as they will have both items.

2. Write what you believe the term “mutually beneficial” means to you.

Answers will vary but the textbook definition states that mutually beneficial trade is the cost to a party must fall between the opportunity costs of producers involved in the trade.

Topic 1.3 Comparative Advantage and Trade

Entrance Ticket

1. Consider the following situation showing opportunity cost. Identify which party (if any) has a comparative advantage.

	Boomerangs	Harmonicas
Kristen	1 (1 Boomerang costs 4 Harmonicas)	4 (1 Harmonica costs 1/4 Boomerang)
Megan	2 (1 Boomerang cost 1.5 Harmonicas)	3 (1 Harmonica cost 2/3 Boomerangs)

Megan has a comparative advantage in producing boomerangs since her opportunity cost to produce harmonicas is higher ($1.5 < 4$). Kristen has a comparative advantage in producing harmonicas for the exact same reason ($1/4 < 2/3$).

2. Should Megan and Kristen trade with each other? Explain why or why not.

Yes, they should. With their comparative advantages, they would each specialize in making boomerangs or harmonicas AND benefit from the other party producing their item.



Topic 1.4 Demand

Entrance Ticket

1. Say an Xbox originally costs \$400. Microsoft changes the price to \$500. What do you think will happen to the number of Xboxes sold?

Students should respond that with the price increase fewer people will want to buy Xboxes

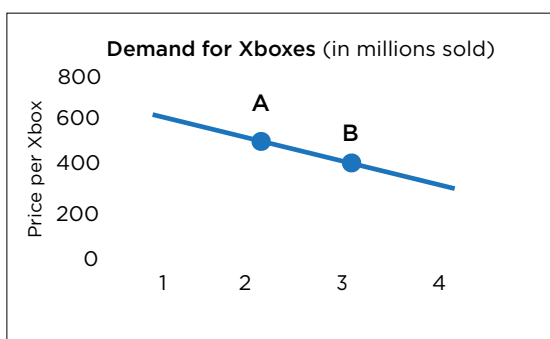
2. Now say Sony releases a new PlayStation that has dramatically better games, graphics, and features. What do you think will happen to the number of Xboxes sold?

Students should respond that more people will start buying PlayStations and fewer people will want Xboxes. Before starting the lesson make it clear to the class that even though the outcome is the same and there is a reduction in demand for Xboxes in both scenarios, the causes for each type of change are different.

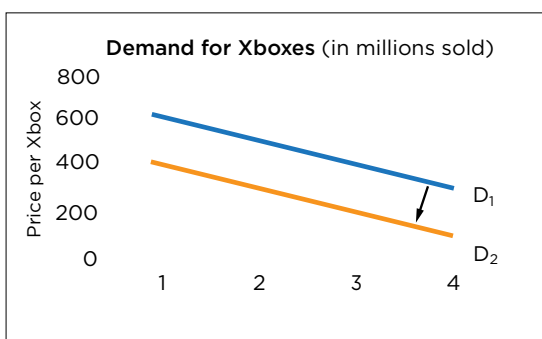
Topic 1.4 Demand

Exit Ticket

1. Explain what is happening in this demand curve graph as we move from points A to B in graph 1. Why is there a shift in demand curve for graph 2?



Graph 1



Graph 2

In short, students should describe that only a change in price can result in a movement ALONG an existing demand curve as show in graph 1. This is known as a change in quantity demanded. Graph 2 shows a change in the overall demand curve due to a determinant other than price, such as substitute goods or a change in consumer tastes.

Topic 1.5 Supply

Entrance Ticket

1. Imagine running a lemonade stand and charging \$1.00 per glass. Several customers say after buying a drink that they would've paid \$5.00. With that feedback, circle what changes you would make (if any) to your business.

Price Charged for Lemonade

Decrease No Change Increase

Amount of Lemonade Made

Decrease No Change Increase

Most students would choose to increase the price charged for lemonade. Some might argue that they would not increase the amount of lemonade made. Point out that if a supplier can charge more money for a product, they have an incentive to produce more as well.

Topic 1.5 Supply

Exit Ticket

1. Explain one reason why a supply curve would SHIFT either to the left or right.

Determinants of supply can cause a shift to the left or the right. Students should respond with one of the following determinant changes: input prices / technology / taxes-subsidies / prices of other goods / producer expectations / number of suppliers.

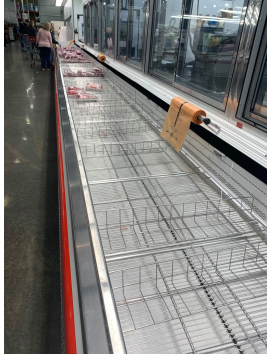
2. How does a change in price of that good or service affect the supply curve?

Students should respond that the overall curve does not shift in any direction, but the price will move along the existing curve.

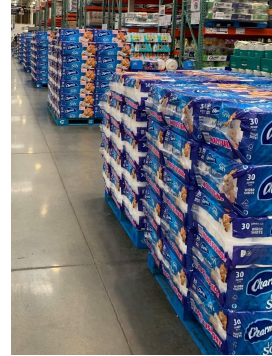
Topic 1.6 Market Equilibrium & Disequilibrium

Entrance Ticket

- Describe what type of economic condition is going on in each of these photos below.



Costco Meat Section
March 2020



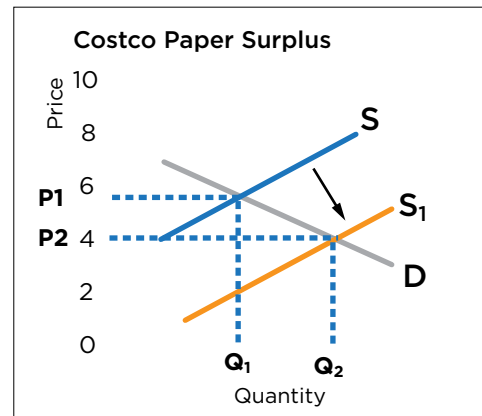
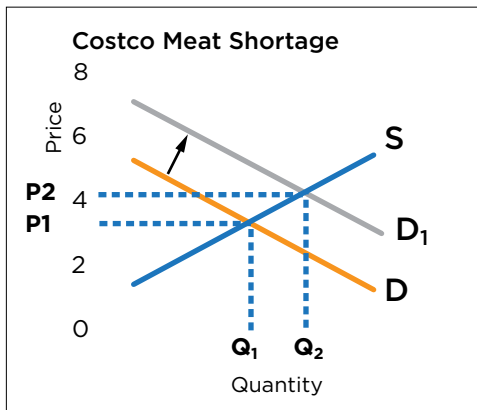
Costco Paper Goods
August 2020

Answers will vary, but students should describe that the Costco meat section shows a shortage and the paper goods section shows a surplus, both from impacts of the COVID pandemic. Introduce the rest of the lesson by telling the class that there are different reasons caused by supply and demand shifts that explain these two scenes.

Topic 1.6 Market Equilibrium & Disequilibrium

Exit Ticket

- Refer to your entrance ticket. Draw a graph showing what caused the shortage in the Costco meat section. Draw a separate graph showing what caused the surplus in toilet paper at Costco. Be sure to label all parts of your graph.

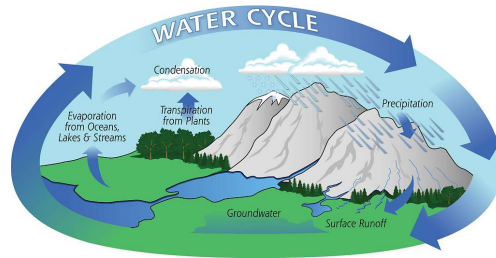


Students should draw graphs like the ones shown above.

Topic 2.1 Circular Flow and GDP

Entrance Ticket

1. Describe what is going on in the illustration below:



Source: [nasa.gov](https://www.nasa.gov)

Answers will vary, but most students will respond that in the water cycle, water moves from one phase to another and from one area of the earth to another

2. In this circular pattern is any water lost (or gained)?

No water is lost or gained in the cycle. Tell students this occurs in economics as well, because goods, services, and money rotate like the water cycle.

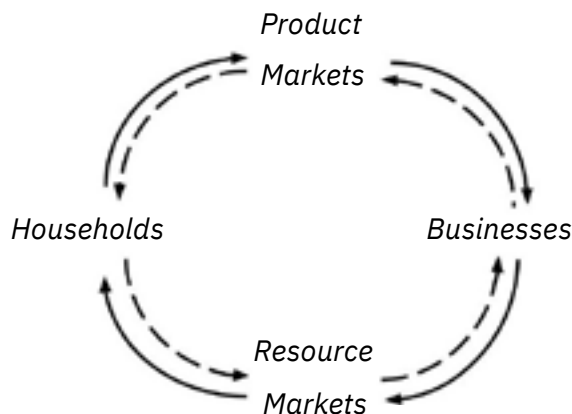
Topic 2.1 Circular Flow and GDP

Exit Ticket

1. List the three possible ways to measure GDP.

The three ways are the expenditure approach, the income approach, and the value added approach.

2. In the illustration below, identify the major participants and market types that are found in the circular flow diagram.



Topic 2.2 Limitations of GDP

Entrance Ticket

1. Think about a visit to a doctor's office. What "vital signs" are usually taken?

Answers will vary but should include temperature, pulse, blood pressure, and respiration (breathing rate).

2. What is the benefit of determining these vital signs? What types of medical issues go unchecked if further examination isn't conducted?

Vital signs are a good way to quickly determine a patient's overall health but cannot show underlying problems. The same can be said for the limitations of GDP. Painting with a broad brush gives us GENERAL indications of the overall health of the economy but may not reveal the full picture. Instruct students that not everything bought and sold in an economy is calculated as part of GDP.

Topic 2.2 Limitations of GDP

Exit Ticket

1. Circle all the possible transactions that would NOT be calculated in GDP.

A \$10 birthday check from Grandma

School purchases a popcorn machine for its students at lunch

Purchasing 1 share of Tesla stock

Apple buying screens for its next iPhone

Your midnight fast food bill of \$4.53

A kid selling lemonade for \$1 in their driveway

Buying a \$5000 used car from a friend

Topic 2.3 Unemployment

Entrance Ticket

1. What types of people do you think are part of the labor force in this country?

Answers will vary. Discuss that there are large segments of the population (kids, retired, those who file for disability status) who are not part of the labor force.

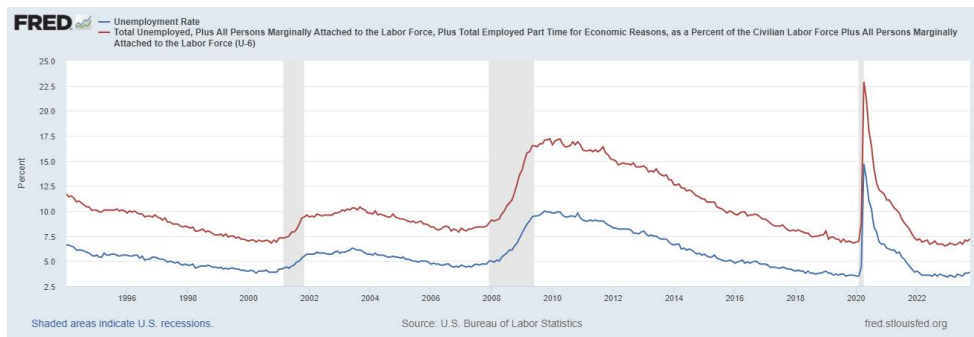
2. Is there a difference between being out of work and not having enough work?

Answers will vary. Introduce the concept of unemployed and underemployed. Tell students that unemployment in the United States is usually measured in a specific way which leaves out many workers in the labor force. These measurements, and the different types of unemployment, will be discussed in this section of the unit.

Topic 2.3 Unemployment

Exit Ticket

1. Consider the unemployment graph below. The lower line (U3) is what the government reports as the unemployment rate. The upper line (U6) includes part time, marginal and discouraged workers. Describe how which measure would give a different understanding of the work force in the United States.



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 1: Topic 2.4

Answers will vary but most students will respond that the U6 measurement includes more detailed description of American workers who may be working less than full time.

2. The sum of which two types of unemployment make up the natural rate of unemployment?

Frictional and structural employment make up the natural rate of unemployment.

Topic 2.4 Price Indices & Inflation

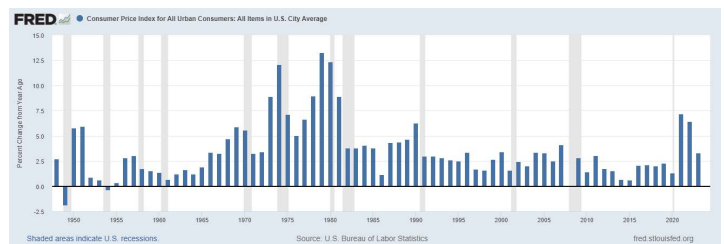
Entrance Ticket

1. When shopping for food at the grocery store, what type of items do you or your family purchase?

Answers will vary. List student responses on the board and organize items into categories. (Most will fall under types like “meats” “dairy” “produce” “canned goods” etc.) Discuss with students that most of these categories don’t change much with week-to-week shopping trips because food purchases are fairly standard. The way the US government calculates inflation is to conduct a survey of a much bigger market basket of items other than food to determine how much changes in the prices of these goods and services impact consumers and the larger economy.

Topic 2.4 Price Indices & Inflation

Exit Ticket



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graphs 2 & 3: Topic 2.4

1. Consider the graph on the left showing the consumer price index (CPI) from the US Bureau of Labor statistics. In February 2022, CPI was reported as 284.610. One year later it was reported at 301.648. Calculate the annual inflation rate between those two dates as the year-to-year percent growth rate of CPI.

$$(301.648 - 284.610) / 284.610 \times 100 = 5.98\%$$

2. Consider the annual CPI inflation rate data from the US Bureau of Labor Statistics on the right. Between 1948 and 2023, when was inflation the highest? When was there deflation or negative inflation rates?

Answers will change as inflation changes, but in 2024 the current peak of inflation is the highest since 1982. The BLS reported deflation (negative inflation) in 1949 (-1.83%), 1954 (-0.37%) and 2008 (-0.02%).

Topic 2.5 Costs of Inflation

Entrance Ticket

1. If you are planning to attend college would you rather pay a student loan that charges 2% interest or 10%? Why?

Students should respond they would rather have a loan at 2% as they would pay less over the life of that loan than if the interest rate were higher.

2. Say that student loan is charging 2% interest. Unexpectedly inflation increases from 2% to 5%. Are you better off, worse off, or the same with inflation being higher than your interest rate?

Answers may vary. The student is better off with a fixed rate of 2%. With a higher inflation rate, the money paid back to the bank is less valuable due to a loss in purchasing power. In this section students will learn that when inflation is either higher or lower than expected, certain groups stand to gain and lose out as a consequence.

Topic 2.5 Costs of Inflation

Exit Ticket

1. Circle all the groups that are HURT by unexpected inflation.

Savers

People on Fixed Incomes

Borrowers

2. Explain why those groups you circled are hurt by unexpected inflation.

Answers will vary. Savers lose out as their purchasing power is lower than the interest they would have gained, while people on fixed incomes cannot buy as much without seeing an increase in income.

Topic 2.6 Real v. Nominal GDP

Entrance Ticket

- Consider the picture showing tuition for St. Louis area private schools in 1969 and the table showing costs in 2022. Using the formula $[1969 \text{ tuition}] \times (271.0/36.7)$ calculate how much that tuition would cost in 2022 adjusted for inflation.

Source: St. Louis Review 11/7/69

SCHOOL	TUITION IN 1969 / 2022	
Chaminade Prep	\$550	/ \$23,500
Duchesne	\$215	/ \$11,400
STL Priory	\$1,250	/ \$25,990
Ursuline	\$425	/ \$15,025
Visitation	\$700	/ \$22,555

SCHOOL	1969 ADJUSTED TUITION
Chaminade Prep	\$4061
Duchesne	\$1587
STL Priory	\$9230
Ursuline	\$3138
Visitation	\$5169

Answers will vary. Tell students that while high school tuition has increased over time, these figures are in nominal dollars and do not account for changes in price levels. The calculation in the instruction uses CPI figures from the Minneapolis Fed to adjust for inflation. This will allow a more accurate comparison.

Topic 2.6 Real v. Nominal GDP

Exit Ticket

- How does the GDP deflator correct the differences between nominal and real values?

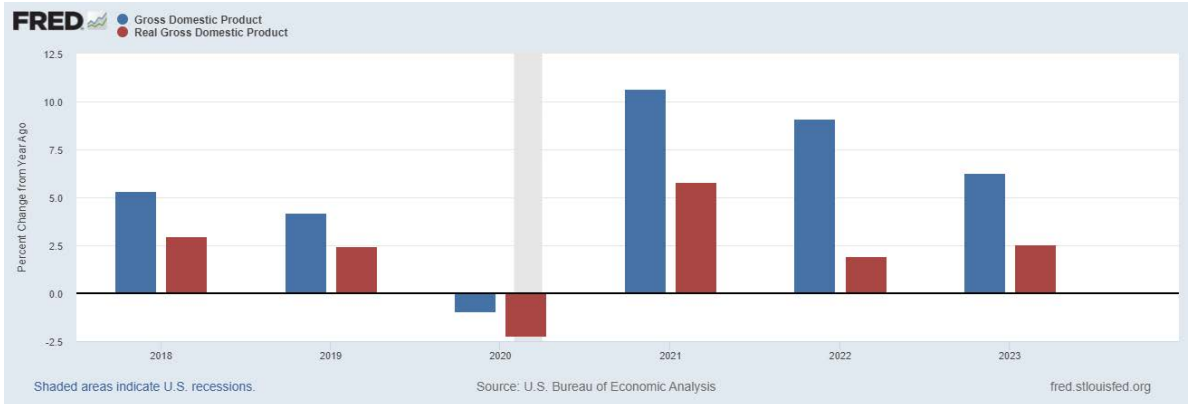
The GDP deflator calculates the changes in price levels between time periods to allow for accurate comparisons.



Topic 2.6 Real v. Nominal GDP (cont.)

Exit Ticket

2. Consider bar graph below showing GDP data from the Bureau of Economic Analysis. The blue bars represent the annual growth rate of nominal GDP, while the red bars show the annual growth rate of real GDP. Explain why both rates were negative in 2020.



Graph available on FRED Dashboard

<https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 4: Topic 2.6

Both nominal and real GDP declined due to the COVID-19 Pandemic negatively affecting the economy.

3. Using the same graph describe why the blue bars are much taller than the red after 2020 than before.

The blue bars are greater than the red bars following the COVID-19 recession as a result of the increase in inflation driving up nominal figures. The red bars illustrating real GDP are adjusted for inflation by being chained to a specific point in time.

Topic 2.7 Business Cycles

Entrance Ticket

1. How do you think the US economy is doing right now? Provide one example to support your point.

Answers will vary. Students should gauge the strength of the economy on the indicators studied in this unit and refer to unemployment or GDP growth or inflation to base their opinions.

2. In the long run, what do you think is the trend in real GDP?

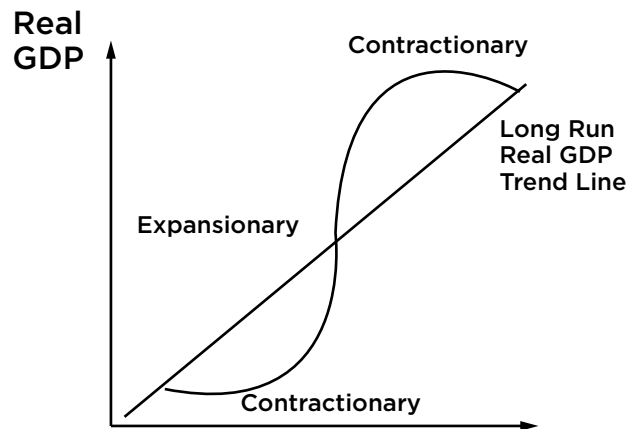
Answers will vary. Tell students that in macroeconomics real GDP should steadily increase over time. The fluctuations that occur within the economy away from that constant, steady growth are called elements of the business cycle. This section of the curriculum will explore that topic in more detail.

Topic 2.7 Business Cycles

Exit Ticket

1. Draw a graph showing a business cycle that begins with a recession and ends with an expansionary period that returns to the long run real GDP trend line. Be sure to accurately label expansionary and contractionary periods in your cycle.

Students should produce a graph like the one shown below.



Topic 3.1 Aggregate Demand

Entrance Ticket

1. REVIEW! If price levels increase due to inflation, will consumers demand more or less of those items?

Consumers will demand less because purchasing power decreases.

2. REVIEW! Why is any demand curve downward sloping?

The demand curve is downward sloping because there is an inverse relationship between prices and quantity demanded. The demand curve is downward sloping because there is an inverse relationship between prices and quantity demanded.

Topic 3.1 Aggregate Demand

Exit Ticket

1. Explain how a trade war using tariffs would cause the aggregate demand curve to shift.

Students should describe how tariffs add to the cost of exports which decreases foreign demand due to higher costs, driving the aggregate demand curve to the left.

2. Circle all descriptions that would cause the aggregate demand curve to shift right. Explain why.

Decreased Government Spending

Decreased Taxes

Increased Consumer Income

Increasing Prices for Exports

Topic 3.2 Multipliers

Entrance Ticket

1. Someone gives you \$20 today. What will you do with it?

Answers will vary.

2. If you chose to spend some (or all) of that \$20, what would you spend it on?

Answers will vary. Emphasize that in macroeconomics, people may choose to do one of two things with their money: they may either spend it or save it to spend later. If only a portion of that money is spent, the whole economy will be affected. If everyone spends/saves the same amount, economists can calculate how the initial spending will multiply. Tell students this will be an essential concept to master later when learning about fiscal and monetary policy.

Topic 3.2 Multipliers

Exit Ticket

1. A government creates a lump sum tax when the Marginal Propensity to Consume (MPC) is 0.6. What's the value of the tax multiplier? SHOW YOUR WORK.

The tax multiplier is -1.5. The calculation student should write is $-0.6 / (1-0.6)$

2. Explain why Marginal Propensity to Consume (MPC) and Marginal Propensity to Save (MPS) must always equal 1.

Because consumers only have two choices—to spend immediately or withhold spending until a later date (which is called saving) any combination of spending/saving must add up to 1.



Topic 3.3 Short Run Aggregate Supply

Entrance Ticket

1. Diego makes the best paella in town. When word gets out about how good his rice dishes are people start offering to pay more money than his original price. Should Diego make more, less or the same amount of paella? Why?

Students should respond that at a higher price level, Diego should make more paella if his costs remain the same. This is a classic example of the microeconomic law of supply.

2. Now assume there is a worldwide saffron shortage (a critical ingredient in Diego's dish). What will happen to the total supply of paella, including Diego's?

Answers will vary. If the ingredients to make this dish are decreasing in availability, all paella makers will produce less. Introduce the concept that aggregate supply is the total quantity of all goods and services in an economy.

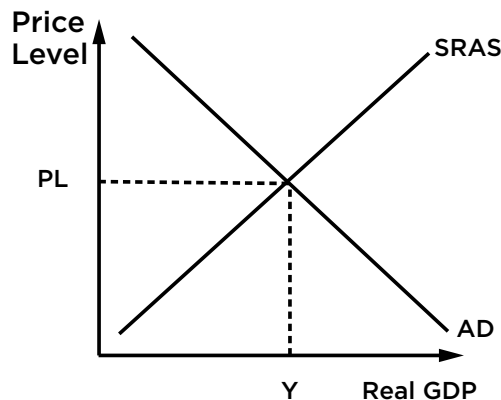
Topic 3.3 Short Run Aggregate Supply

Exit Ticket

1. Consider the following three headlines from CNBC and indicate if short-run aggregate supply would increase, decrease or be indeterminate.

Biden Signs \$1.9 Trillion Covid Relief Bill, Clearing Way for Stimulus Checks March 11, 2021	Senate, House Vote to Back Biden Oil Ban on Russia April 7, 2022	Worker Productivity Rises 6.6% in 4th Quarter March 3, 2022
<i>Indeterminate</i>	<i>Decrease</i>	<i>Increase</i>

2. Draw an AS/AD model in equilibrium with PL indicating Price Level and Y representing Real GDP. Don't forget to label everything appropriately.



Topic 3.4 Long Run Aggregate Supply

Entrance Ticket

1. Brad made \$100,000 last year and received a \$10,000 raise. This year, inflation suddenly increased and remained at 10%. Explain whether Brad is better off, worse off, or the same at the end of the year with his raise?

Answers will vary, but Brad's situation remains the same because his raise only kept up with inflation.

2. If you work, when was the last time you received a raise? Do you think wages or inflation change faster?

Answers will vary. Tell students wages tend to adjust more slowly than the price due to a concept known as "sticky wages." This concept is eliminated in the long run and has an impact on the aggregate demand, aggregate supply model as they will learn in this section.

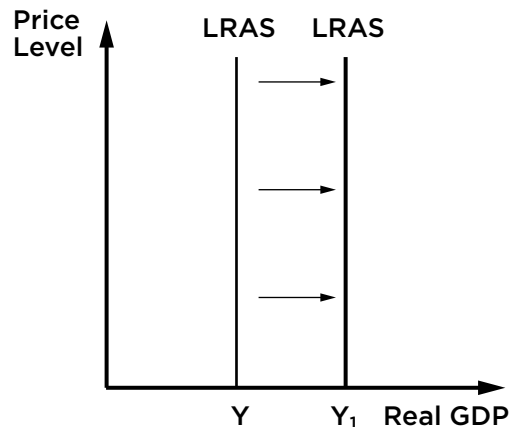
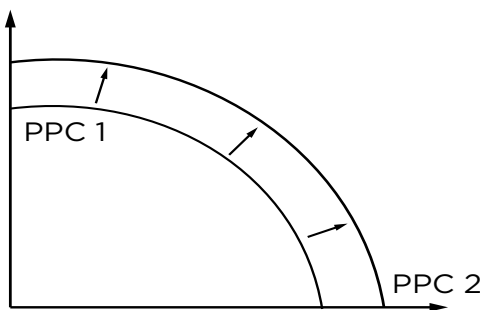
Topic 3.4 Long Run Aggregate Supply

Exit Ticket

1. Explain how sticky wages affect the long-run aggregate supply curve.

Answers will vary to an extent. Students should describe that due to contracts and time, input prices such as wages remained fixed in the short term but can be adjusted in time. This means in the long run, price level doesn't impact aggregate supply as wages will keep up with price level.

2. Recall the production possibilities curve from unit 1. Draw a LRAS graph that illustrates the change in the PPC curve shown below.



Students should draw a graph like the one on the right.

Topic 3.5 Equilibrium in the AD/AS Model

Entrance Ticket

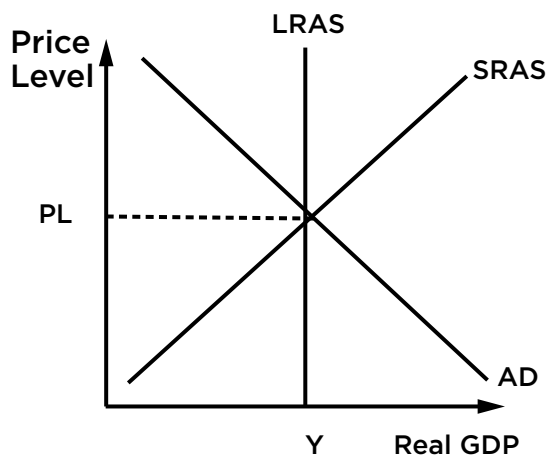
1. REVIEW! In the short run, what is balanced when aggregate supply and aggregate demand meet?

Answers will vary, but students should describe that in the macroeconomy, price level and real GDP are balanced at the intersection of supply and demand.

Topic 3.5 Equilibrium in the AD/AS Model

Exit Ticket

1. Draw an AS/AD model with long run aggregate supply in equilibrium.



2. If an economy is in equilibrium like the graph you just drew above, describe the impact that has on employment.

Answers will vary, but students should describe that if short-run and long-run supply are in equilibrium with aggregate demand, the economy is operating at full employment.

Topic 3.6 Changes in the Short Run AD/AS Model

Entrance Ticket

1. What would happen to the price of milk chocolate bars if there was a devastating natural disaster that affected the world's cacao trees?

Answers will vary but students should respond that the price will increase due to a sudden decrease in the world's chocolate supply.

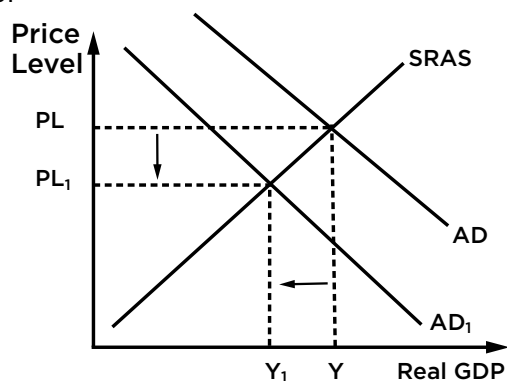
2. What would happen to the amount of fidget spinners if nobody wants them anymore since kids are now playing with Popits?

Answers will vary but students should respond that the total amount of fidget spinners in the market should decrease due to a significant decline in demand. Remind students that the lessons learned in unit one about basic market forces also apply to the macro AD/AS model as they will learn in this part of the unit.

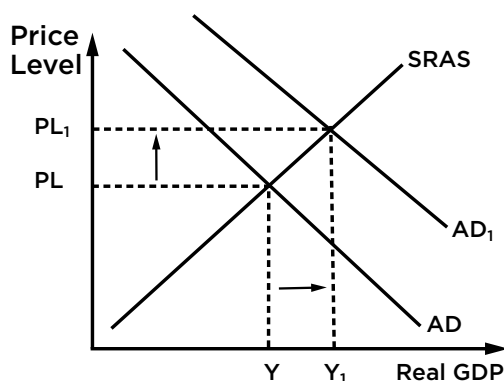
Topic 3.6 Changes in the Short Run AD/AS Model

Exit Ticket

1. Draw a graph showing the change in the AD/AS model if a trade war with China reduces the amount of EXPORTS.



2. Describe what type of inflation is occurring in the AD/AS model below.



Students should identify this type of inflation as “demand pull” inflation as there are too many dollars chasing too few goods.

Topic 3.7 Long-Run Self-Adjustment

Entrance Ticket

1. REVIEW! In a business cycle, what are the two phases of an economy that exist on either side of the long-run trend of real GDP?

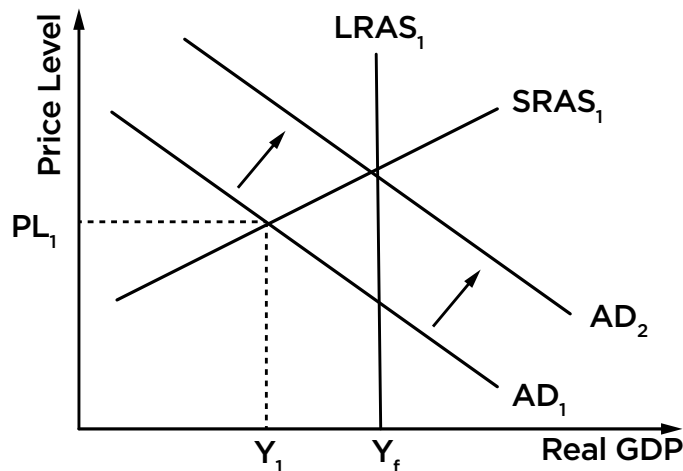
Students should respond that a business cycle can either be in an expansionary or contractionary phase. Tell students that with the AD/AS model, economists refer to the macro model as either in an inflationary or recession state, but the effect is similar. In this activity students will see how market forces will pull the macroeconomy into equilibrium and how that will impact inflation and unemployment.

Topic 3.7 Long-Run Self-Adjustment

Exit Ticket

1. First, describe the type of disequilibrium occurring in the AD/AS model below. Next, draw on the existing graph how the economy would adjust to return to equilibrium. Finally, explain what will happen to both price level and unemployment with this return to equilibrium.

Students should identify the provided graph as a recessionary gap and show aggregate demand increasing to move to equilibrium. (See below.) Students should also explain that with this shift in AD, unemployment will decrease and return to the natural rate while price levels increase.



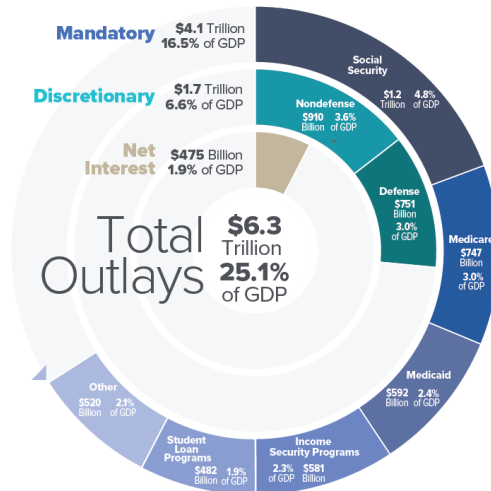
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Topic 3.8 Fiscal Policy

Entrance Ticket

- List three things you think are the largest part of the federal government's annual spending.

Answers will vary. As a focusing tool refer to the graphic showing 2022 spending from the Congressional Budget Office below. OPTIONAL: Highlight discretionary spending and mandatory spending and explain to students that the difference between the two will be taught later in the unit.



Source: <https://www.cbo.gov/publication/58888>

- REVIEW! Write the formula for calculating GDP.

$GDP = C + G + I + (X - M)$. Remind students that while consumer spending plays an enormous role GDP, the federal government also has a large influence through its own spending decisions

Topic 3.8 Fiscal Policy

Exit Ticket

- Circle all the actions the federal government could take to enact a contractionary fiscal policy.

Raise Taxes

Decrease Govt. Spending

Increase Deficit Spending

Lower Taxes

Increase Govt. Spending

Decrease Deficit Spending

- Explain why, during an expansionary policy, the government's spending multiplier is always greater than the tax multiplier.

Answers will vary. The impact of a tax cut will always be less than direct government spending because not all consumers/firms will spend the extra money created by the tax cut. The choice to save some (or all) of that expansionary fiscal policy stimulus will always lead to a smaller multiplier.

Topic 3.9 Automatic Stabilizers

Entrance Ticket

1. Define the difference between discretionary and mandatory.

Answers will vary. In terms of fiscal policy, discretionary spending is money spent by the federal government on an annual basis and can fluctuate year to year. Mandatory spending includes programs that are mandated by prior laws and cannot be changed easily through the Congressional budget process.

2. Do you think the federal government spends more on discretionary or mandatory programs?

Answers will vary. Tell students that approximately 75% of the 2020 federal budget was spent on mandatory programs like Medicare, Social Security, and unemployment benefits. Introduce the rest of this unit by saying that since most of these mandatory programs require no further actions by Congress or the President, they act as automatic stabilizers in the macroeconomy.

Topic 3.9 Automatic Stabilizers

Exit Ticket

1. The United States finds itself in the middle of a recession. Circle all the automatic stabilizers the federal government has at its disposal to enact expansionary fiscal policy.

Food Stamp Assistance

Stimulus Checks

New Corporate Tax Cut

New Infrastructure Projects

Unemployment Benefits

Progressive Income Tax System

Explain to students that although stimulus checks, new infrastructure projects, and tax cuts are expansionary fiscal policy, they require new action to be taken by Congress and the President and therefore are NOT automatic stabilizers. Food stamps, unemployment benefits, and lower tax revenue generated by less income all act as automatic stabilizers and do not require any new policy changes in the middle of a recession.



Topic 4.1 Financial Assets

Entrance Ticket

1. You are in a strange American city at midnight, and you need to buy gas. You have a \$100 bill, 200 Mexican pesos, a credit card, 1 bitcoin and an American Gold Eagle coin. Which would be the easiest financial instrument to purchase gas at midnight?

Answers will vary. Discuss that all five options have financial value, but to varying degrees. The “Benjamin” will likely not be accepted because filling stations don’t want large denomination bills. The Mexican note might be accepted if you are on the border, but it isn’t likely to be accepted at par (meaning the prevailing market exchange rate). Bitcoin isn’t readily tradeable. Gold is considered “real money” by many people, but it’s unlikely the station would accept it, or if it did, it certainly wouldn’t accept it at market value. The most cash-like instrument you are carrying is the credit card, which isn’t “money” in the strictest sense, but credit. However, the line between money and credit is often blurry. In our example, the convenience store would most likely accept the credit card without incident, whereas all the other forms of “money” could be a problem. In this section, students will learn about different types of financial instruments and later focus on different types of money.

Topic 4.1 Financial Assets

Exit Ticket

1. List the following financial assets in order from most liquid to least liquid: Certificate of Deposits (CDs) / Stocks / Cash / Checks

The order of liquidity is: Cash / Checks / Certificate of Deposits / Stocks

2. What is the opportunity cost of holding currency as opposed to other types of financial assets?

If a consumer holds currency the opportunity cost is the foregone interest earned if the cash was saved as another type of financial asset.



Topic 4.2 Nominal v. Real Interest Rates

Entrance Ticket

1. List three examples from your own or your family's life that would require you to pay attention to interest rates.

Answers will vary. Most students will respond that loans for cars, college, credit cards, and mortgages are all dependent on interest rates. Discuss that the interest rates that are often seen and advertised are nominal interest rates which do not take inflation into account.

2. Suppose you take out a \$100,000 student loan for college. Would you rather pay 2% or 10% interest?

Answers will vary, but most students will choose the 2% student loan as they will pay less back over the life of the loan.

Topic 4.2 Nominal v. Real Interest Rates

Exit Ticket

1. Let's return to that \$100,000 student loan you took at 2% interest. If the inflation rate suddenly rises to 7%, are you (the person paying back the loan) or the bank (which gave you the loan) better off, worse off, or the same? Explain your answer.

Answers will vary, but in this situation the bank is worse off because inflation is 5% higher than the interest rate on the loan. In this case the real interest rate is -5%.

2. Calculate the real interest rate in the table below:

Year	Nominal Interest Rate (%)	Inflation Rate (%)	Real Interest Rate (%)
1980	13.74	12.42	1.32
2010	4.69	0.95	3.74
2021	3.11	1.70	1.41



Topic 4.3 Definition, Measure & Functions of Money

Entrance Ticket

1. List three reasons why a \$5.00 bill is a good form of money.

Answers will vary. List on the board all student responses and discuss. Generally, a \$5.00 bill is universally accepted as having and holding its value, is easily transportable, durable, and divisible. Tell students that throughout history the definition of what is acceptable as money has changed (from gold pieces to salt to currency), but the functions of money remain the same.

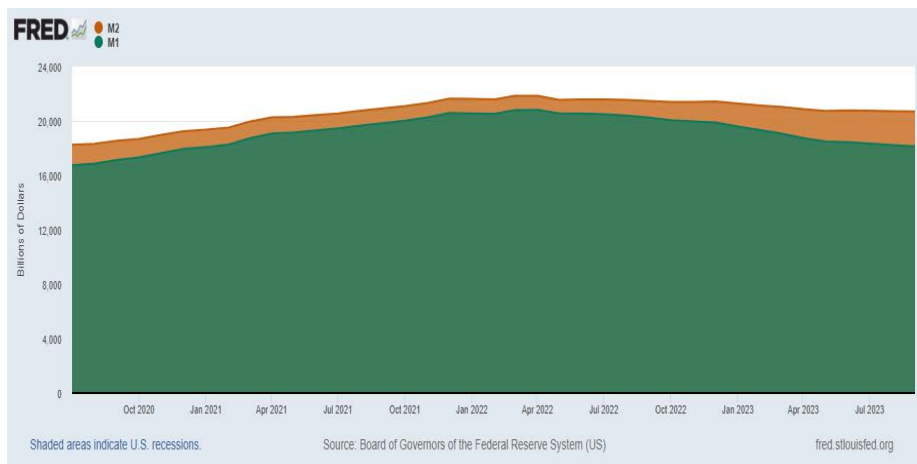
Topic 4.3 Definition, Measure & Functions of Money

Exit Ticket

1. List the three functions of money.

Medium of Exchange / Standard of Value / Store of Value

2. Consider the FRED graph below. Explain why M2 is always a larger figure than M1.



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 5: Topic 4.3

Answers will vary, but students should describe M2 as the total of M1 (which consists of coinage plus demand deposits, and [after 2020] savings accounts) plus money market accounts and certificates of deposit (CDs) at financial institutions. [NOTE: Many textbooks and older instructional materials use the old definition of savings accounts as being calculated in M2 not M1.]

Topic 4.4 Banking & Money Supply Expansion

Entrance Ticket

- Quick poll: If you open a savings account at any bank and deposit \$500, does the bank just keep all \$500 in a vault for safekeeping?

YES

NO

Tabulate results and discuss. Tell students that a bank does not keep all its money in a vault as that is not a good business model. By loaning out a fraction of your savings, it helps create new money through a process called fractional reserve banking which is essential for contributing to economic growth.

Topic 4.4 Banking & Money Supply Expansion

Exit Ticket

- Complete a balanced T-account sheet by filling in the correct amount of required reserves.

Bank A			
Assets		Liabilities	
Required reserves	\$10,000	Demand deposits	\$100,000
Excess reserves	\$5,000		
Loans	\$85,000	Owner's equity	\$0

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- Assume you deposit \$10,000 in a bank that will loan out all its excess reserves. If the required reserve ratio is 5%, fill in the table below.

Required Reserve Ratio	Required Reserves	Excess Reserves	Deposit Expansion Multiplier	Maximum Increase in Money Supply
5%	\$500	\$9500	20	\$190,000

To calculate the required reserves, students should take the original \$10,000 deposit and multiply it by the 5% required reserve ratio to arrive at the correct answer \$500. Excess reserves would then be \$9500. Students should use the deposit expansion multiplier formula of $(1/rr)[1/.05]$ to arrive at the multiplier of 20. Finally, to calculate the maximum increase in the money supply students should perform the following calculation $20 \times \$9500 = \$190,000$.



Topic 4.5 The Money Market

Entrance Ticket

1. Who do you think controls the supply of money in the United States?

Answers will vary. Tell students that the Federal Reserve establishes the supply of money in the US. (This is why all denominations of bills have the words “Federal Reserve Note” on them.)

2. Do you think more Americans would buy a new house—and take out a 30-year mortgage—if interest rates were increasing or decreasing?

Answers will vary. As interest rates increase the demand for mortgages will decrease. Describe to students that with these two questions we introduce the concept of demand in the money market which functions no differently than any other supply or demand market previously referred to in this class.

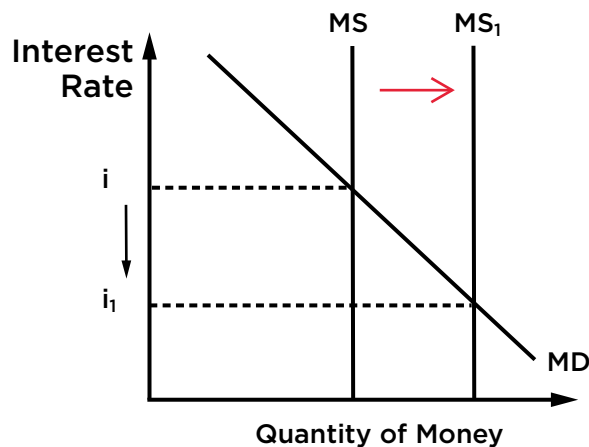
Topic 4.5 The Money Market

Exit Ticket

1. Briefly explain why the money supply curve is completely vertical.

Students should describe that the money supply is completely vertical since the central bank (the Federal Reserve in the case of the United States) determines the amount of money and it does not depend on the interest rate.

2. Draw a money market graph showing an increase in the money supply. Be sure to label what impact that shift has on real interest rates.



Topic 4.6a Monetary Policy

Entrance Ticket

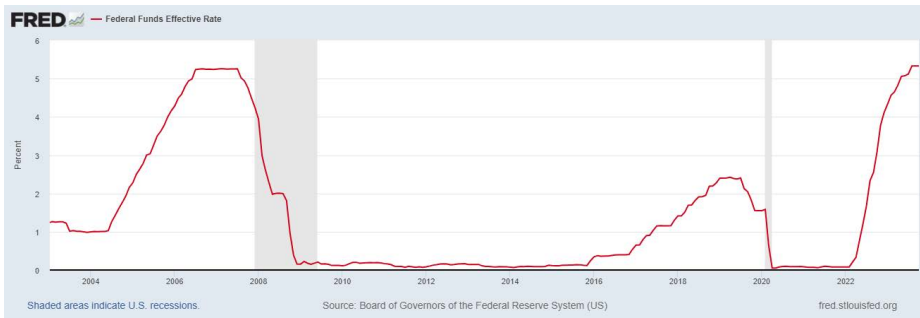
- REVIEW! Describe how fiscal policy can help bring about stability in the macro economy.

Answers will vary. Review with students that in recessionary times, the government can increase spending or lower taxes to conduct expansionary fiscal policy to balance the economy. In inflationary periods the government could decrease spending or raise taxes with contractionary fiscal policy. Tell students that a central bank like the Federal Reserve can also contribute independently by conducting expansionary or contractionary monetary policy which we will learn about in this section of the unit.

Topic 4.6a Monetary Policy

Exit Ticket

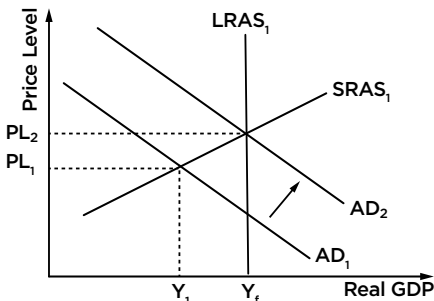
- Consider the FRED graph below showing the effective federal funds rate from the Board of Governors of the Federal Reserve. Note the gray bars in the background indicate periods of recession. Identify what type (expansionary or contractionary) of monetary policy the FOMC was conducting during the years in the table below.



Years	Types of Monetary Policy
2004-06	Contractionary
2007-09	Expansionary
2020-22	Expansionary
2022-23	Contractionary

Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 6: Topic 4.6

- Based on the graph below, describe what monetary policy action the Fed could take to bring the economy back into equilibrium. Draw on the existing graph how that policy would affect output and price level.



From *AP Macroeconomics Course & Exam Description*, effective Fall 2020 (c) The College Board. Used with permission. apcentral.collegeboard.org

In the graph, the economy is in a recession as equilibrium is below LRAS and full employment. The Fed should conduct expansionary monetary policy which would increase aggregate demand and bring the economy back into long run equilibrium. The tradeoff of this economic growth, however, would be higher price levels.

Topic 4.6b Monetary Policy Tools

Entrance Ticket

1. What is the purpose of the bumpers seen in the picture of the bowling alley below?



Answers will vary but most will respond that the bumpers are in place to keep the ball from falling in the gutter. Tell students that the Federal Open Market Committee (FOMC) adjusts two rates that keeps the Federal Funds Rate—the benchmark for monetary policy—in range, just like the bowling alley bumpers.

2. If you buy a new pair of collectors' edition sneakers and a friend offers you twice what you paid, would you sell them?

Answers will vary. Discuss with the class that if they do sell them immediately and make a profit, this is what is known as "arbitrage." This concept will be important in understanding how the FOMC is able to implement monetary policy.

Topic 4.6b Monetary Policy Tools

Exit Ticket

1. Which of the following rates/tools does the Federal Reserve use to implement modern monetary policy? Circle below.

Federal Funds Rate

Overnight Reverse Repurchase Agreement

Prime Rate

Interest on Reserves Balance

Required Reserve Ratio

Federal Income Tax Rate



Topic 4.7 The Loanable Funds Market

Entrance Ticket

1. REVIEW! If the Federal Reserve decreases the money supply, what will happen to interest rates?

Interest rates will rise because there is less supply in the overall money market.

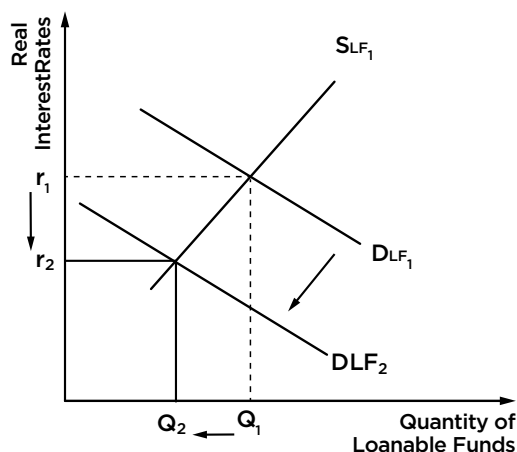
2. REVIEW! If the marginal propensity to save was 0.2 in 2018, but increased to 0.4 in 2020, what does that indicate?

This scenario shows that people are saving more, in this case due to pandemic economic restrictions. Discuss with students that if consumers are spending less and saving more, the best place to use that money would be to save it with a financial institution. If banks have more funds, they will have more to lend in the loanable funds market. This is the focus in this part of the unit.

Topic 4.7 The Loanable Funds Market

Exit Ticket

1. Draw on the graph below how the loanable funds market would change if the federal government stopped all deficit spending. Be sure to label what will happen to real interest rates and the quantity of loanable funds.



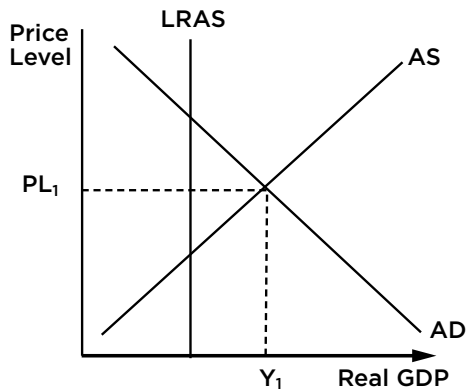
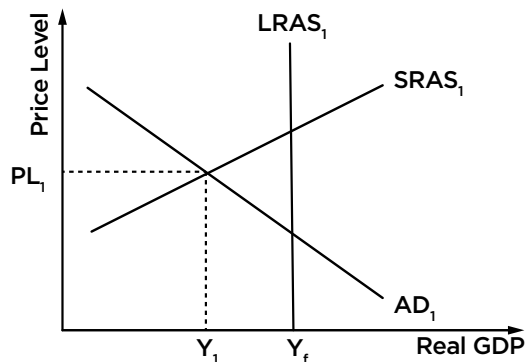
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Topic 5.1 Fiscal & Monetary Policy in the Short Run

Entrance Ticket

- REVIEW! Draw two aggregate demand and supply graphs showing an economy in recession and inflationary disequilibrium.



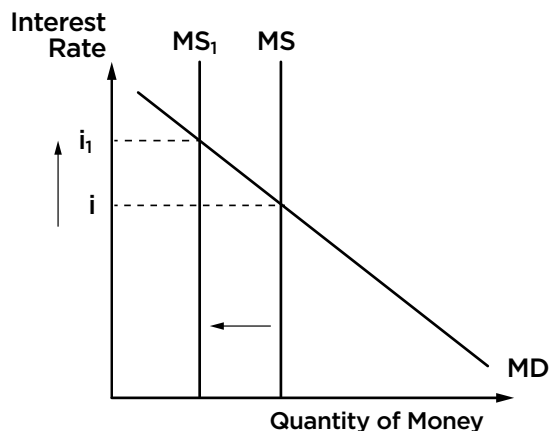
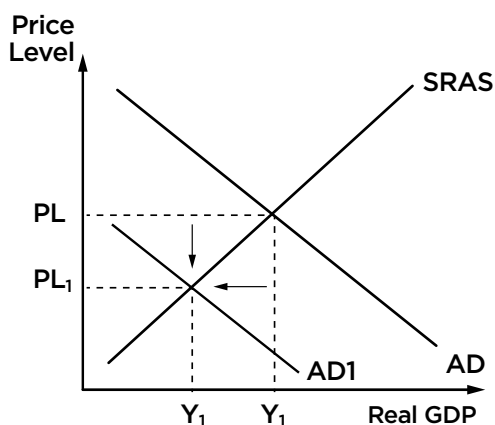
The graph on the left shows a recessionary gap, the graph on the right shows an inflationary gap.

Topic 5.1 Fiscal & Monetary Policy in the Short Run

Exit Ticket

- Inflation stands at 10% while unemployment is at an all-time low. Describe what kind of fiscal and monetary policy a government and central bank should deploy and how those actions would impact aggregate demand, aggregate supply, and the money market on the graphs below.

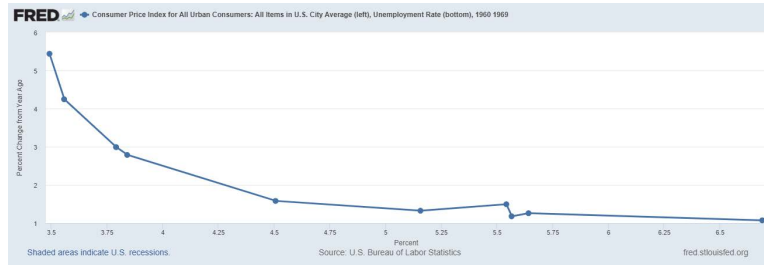
Answers will vary. In terms of fiscal policy, the government should enact either an increase in tax rates, cut spending, or a combination of both. The most effective monetary policy would be to sell bonds on the open market, which is a contractionary policy. See graphs below to illustrate the impact of these policies.



Topic 5.2 The Phillips Curve

Entrance Ticket

- REVIEW! In an aggregate demand/supply model there is a link between rising price levels and _____ *total output* _____
- Consider the FRED scatter plot showing annual pairs of unemployment rate data (horizontal axis) and the inflation rate from CPI (vertical axis) as reported by the US Bureau of Labor Statistics between 1960-69. Describe the relationship with both economic indicators.



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 7: Topic 5.2

Answers may vary. Tell students that data from the 1960s was used by New Zealand economist Bill Phillips to create what is now known as the Phillips Curve, which shows an inverse relationship between unemployment and inflation.

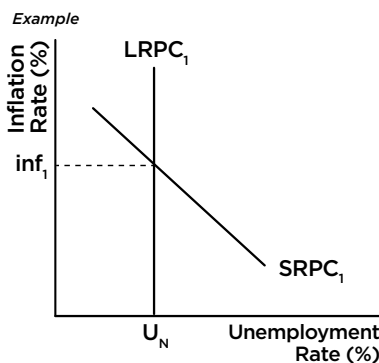
Topic 5.2 The Phillips Curve

Exit Ticket

- Circle the appropriate option

Situation	Impact on Phillips Curve			
An oil supply shock that suddenly increases prices will do what?	Move	Shift	Left	Right
A rapid decrease in consumer spending will do what?	Move	Shift	Left	Right

- On the graph below, correctly draw a point labeled A showing an inflationary gap and a point B showing a recessionary gap.



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Students need to place a point labeled “A” anywhere on the SRPC to the left of the LRPC to show an inflationary gap and a point labeled “B” anywhere to the right of the LRPC to show a recession gap.

Topic 5.3 Money Growth & Inflation

Entrance Ticket

1. How often do you think a physical single dollar bill changes hands in a week?

Answers will vary. For an interesting introduction, suggest students visit www.wheresgeorge.com to track how often a dollar moves.

2. If a single dollar bill changes hands more often, what consequence do you think that has on GDP or inflation?

Answers will vary. Discuss with students that monetary economists believe that if the money supply or velocity increases, there will be an increase in output or price level. This phenomenon is known as the quantity theory of money.

Topic 5.3 Money Growth & Inflation

Exit Ticket

1. Write the formula for the Quantity Theory of Money below.

$MV = PQ$ (or Money Supply \times Velocity of Money = Average Price Level \times Real GDP)

2. Calculate MV from data sourced from FRED for the first two quarters of 2020 during the COVID shutdown:

	M2 Money Supply (in billions)	Money Velocity	MV
Q2 2023	20,784.9	1.302	27,061.94
Q3 2023	20,721.9	1.327	27,497.96
		Change in MV	436.02

If full employment stayed the same, what would happen to the price level?

According to the Quantity Theory of Money, price level will decrease since MV decreases and Q stays constant.



Topic 5.4 Government Deficits & Debt

Entrance Ticket

1. REVIEW! How can a government fund its fiscal policy if it doesn't take in enough revenue through taxes?

Answers will vary. Students should respond that the government may either print more money (and risk immediate and drastic inflation) or issue treasury bonds to raise revenue. This is known as deficit spending. Review with students that this is known as expansionary fiscal policy.

2. As of November 2023, the national debt stood at approximately \$33.7 trillion. What consequences do you think this has on the economy?

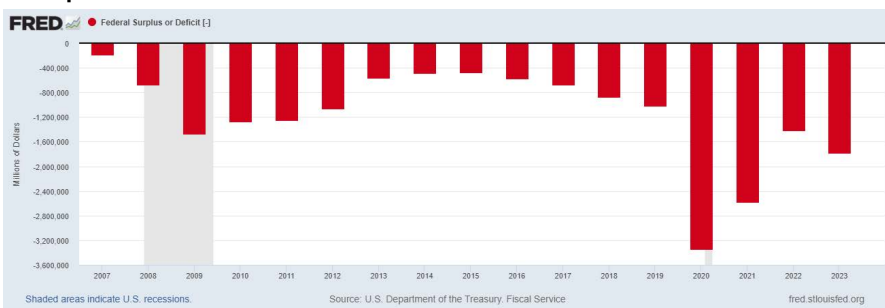
Answers will vary. Tell students that in this unit they will understand the difference between deficit spending (negative spending in a current budget cycle) and the national debt (which is the sum of all deficits accrued by a government). Discuss with students that there are political consequences to continuing deficit spending and increasing the national debt, but for the purposes of the AP exam, the focus will only be on the economic consequences of these policies

Topic 5.4 Government Deficits & Debt

Exit Ticket

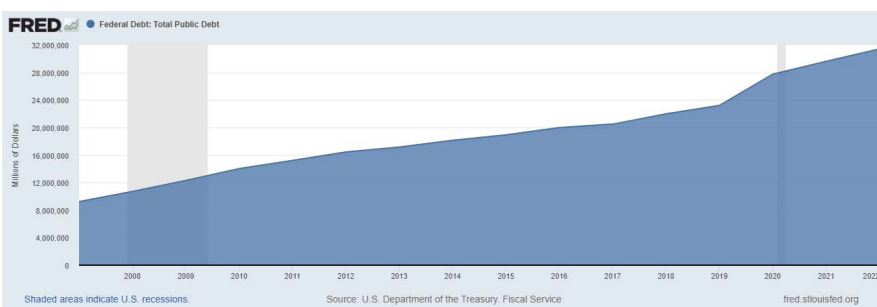
1. Graph 1 shows the federal surplus or deficit from the U.S. Treasury. Graph 2 shows the total federal debt. Describe the relationship linking both economic indicators.

Graph 1



Graph 1 shows the surplus/deficit the US government ran in each quarter. Graph 2 is the cumulative debt of the U.S. government. Point out to students the massive deficit spending that occurred during the 2nd quarter of 2020 is a consequence of all the massive government spending that dealt with the COVID pandemic. That large, unique deficit directly led to the significant increase in the national debt seen at the same time (in graph 2).

Graph 2



Graph available on FRED Dashboard

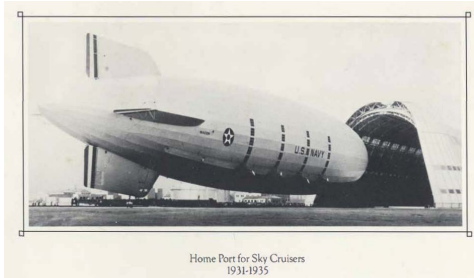
<https://fredaccount.stlouisfed.org/public/dashboard/107318> Graphs 8a & 8b: Topic 5.4



Topic 5.5 Crowding Out

Entrance Ticket

1. What will happen to the amount of space in this hangar after the blimp is completely inside?



Home Port for Sky Cruisers
1931-1935

Moffett Field, CA. Image courtesy historicproperties.arc.nasa.gov

Students should respond that the blimp will take up most of the space in the hangar. Instruct the class that in this topic, government deficit spending can also have an outsized influence on the economy, especially impacting interest rates.

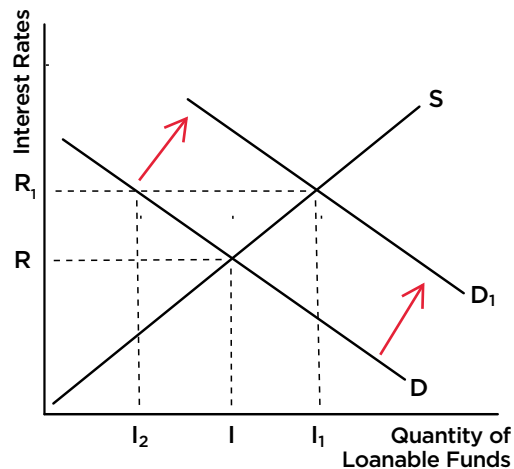
2. REVIEW! True or False: The federal government can set interest rates in the loanable funds market.

False. Remind students that the federal government participates in the loanable funds market just like corporations or consumers. Consequently, the government is not immune to changes in the interest rates. That said, because the federal government is such a large player in the overall loanable funds market (and the macroeconomy in general) it may have undue influence on the rest of the market, which may lead to the concept of crowding out other economic players.

Topic 5.5 Crowding Out

Exit Ticket

1. Assume a government commits to a rapid and dramatic deficit spending increase. Draw the impact on the overall loanable funds market. Be sure to label the change in interest rate on the Y-axis, the change in the quantity of loanable funds after government deficit spending AND the amount (and interest rate) left for private investment in the loanable funds market.



Students should identify an increase in interest rates as a consequence of government deficit spending and that the amount left for private investment is listed as I₂.

2. Assume that sudden and massive government deficit spending has extreme consequences in the loanable funds market. How might that affect real GDP?

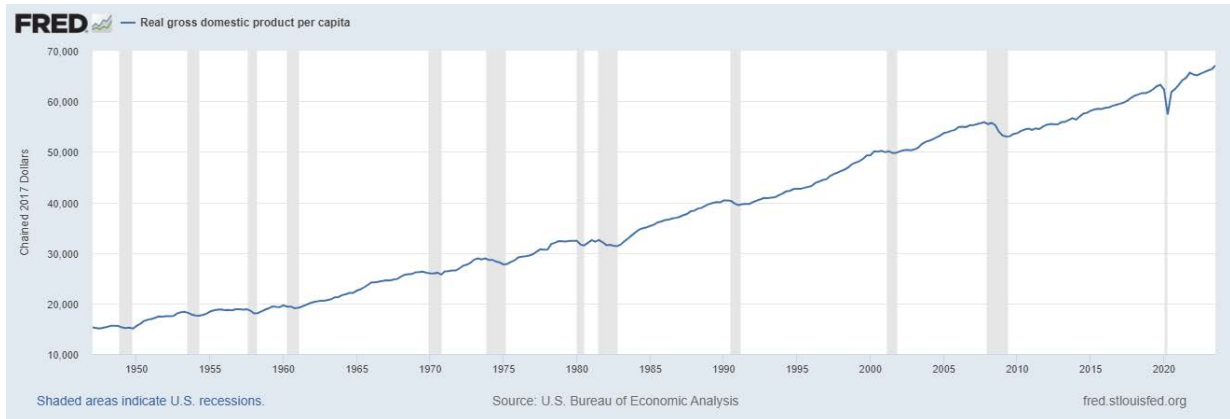
Answers will vary. The risk is that with significantly less funds available for private investment, real GDP could decrease as consumer spending and private investment declines because of fiscal policy.



Topic 5.6 Economic Growth

Entrance Ticket

1. Consider the real gross domestic product (GDP) per capita data from the US Bureau of Economic Analysis in the graph below. Real GDP per capita is the value of inflation-adjusted GDP divided by the population of the nation. Describe the overall trend of the data since 1947.



Graph available on FRED Dashboard <https://fredaccount.stlouisfed.org/public/dashboard/107318> Graph 9: Topic 5.6

Answers will vary, but students should respond that since World War II, the general trend has been a constant increase in economic growth at a rate averaging 2% annually. Remind students that long run trends do not necessarily consider short run dips brought on by recessions. Introduce the concept of economic growth to the class and say this activity will explain the causes for this long run growth in the economy.

Topic 5.6 Economic Growth

Exit Ticket

1. Circle all the following options that would help create economic growth.

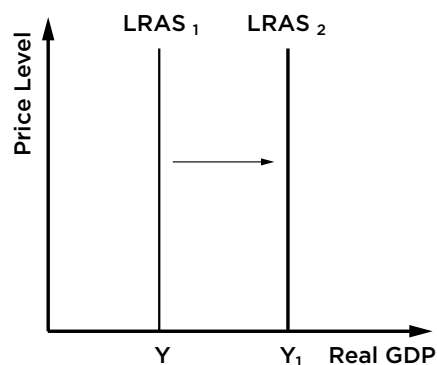
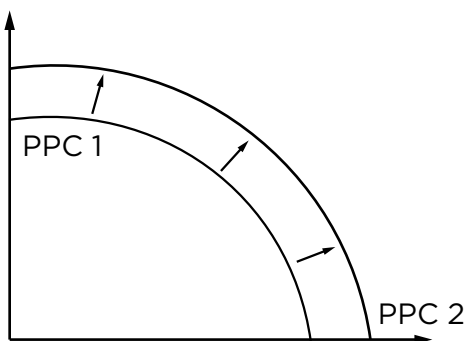
Increasing Population

New Technology

Higher Education Attainment by Workers

Increased Capital Investment

2. Consider the production possibilities curve below. Then draw a long run supply curve graph showing the equivalent change to the PPC graph provided



Topic 5.7 Public Policy & Economic Growth

Entrance Ticket

1. What are three ways the federal government could potentially assist in creating economic growth?

Answers will vary from infrastructure to fiscal policy to tax cuts. Tell students that in addition to those listed, providing political stability, and protecting property rights are effective tools governments can use to assist in long term economic growth.

2. How can patents like this (for Google's page rank algorithm) inspire economic growth?



Answers will vary. By providing the reward of a legal monopoly for a period of time, governments can encourage entrepreneurship and technological advances that would contribute to long term economic growth

<https://patents.google.com/patent/US6285999>

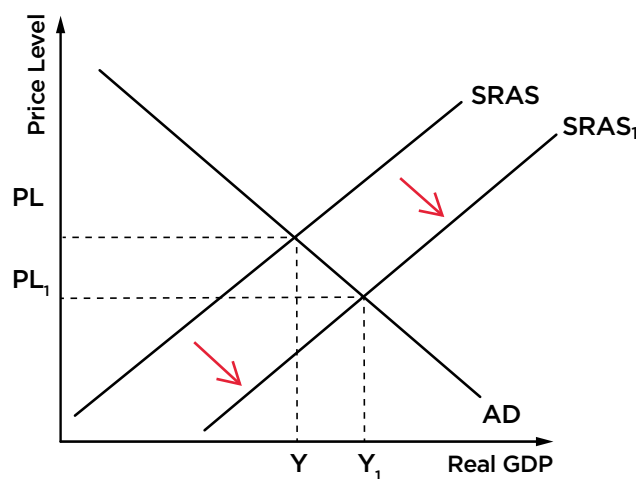
Topic 5.7 Public Policy & Economic Growth

Exit Ticket

1. Describe how a reduction in corporate taxes leads to economic growth.

According to supply side economic policy, corporations could reinvest that extra money into capital improvements like research and development, which would increase productivity.

2. Draw an AD/AS graph showing the impact of supply side economic policies. Be sure to include how price level and output are affected by the change.



Topic 6.1 Balance of Payment Accounts

Entrance Ticket

1. REVIEW! What part of the GDP formula accounts for international trade?

The balance of trade between imports and exports (X-M) is the part of GDP that considers international trade. [as part of GDP = C+I+G+ (X-M)]

2. If an American tech firm builds a smartphone factory in Shanghai, what kind of impact does that have on the US economy?

Answers will vary. Tell students that the flow of money for goods and investment purposes between nations is an essential part of the macroeconomy. In this unit, it's most important that students learn the difference between current and financial accounts and whether a transaction leads to money entering or leaving the country

Topic 6.1 Balance of Payment Accounts

Exit Ticket

1. Identify below whether each scenario is a current or financial account transaction and if it should be listed as a credit or debit to that account.

	Current Account	Financial Account	Credit (+)	Debit (-)
The Spanish fashion store Zara buys a mall in Miami		X	X	
Guatemalan cooks at a restaurant send 25% of their paychecks back home to their families	X			X
AlyciaCo (an American health food company) sells \$25,000 of Kombucha to a grocery store chain in Germany	X		X	
Disney invests \$100 million to build a new theme park in the United Arab Emirates		X		X
MadameCorp (a French bank) purchases \$50,000 in US treasury bonds		X	X	

Topic 6.2 Exchange Rates

Entrance Ticket

1. If you've ever traveled outside the U.S., did you feel that goods and services were more expensive, less expensive or about the same as the goods and services at home?

Answers will vary. Start a discussion as to why the same items appear to cost more or less when traveling abroad. (A good example and explainer of this concept is The Economist "Big Mac Index" available at <https://economist.com/big-mac-index>).

2. If you haven't traveled outside the US, would you want to visit a nation where the currency is more or less valuable than the dollar? Why?

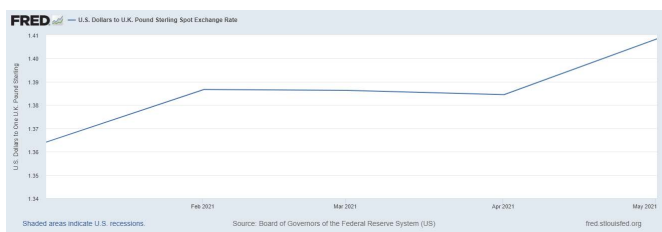
Answers will vary. Students should respond that they would visit a nation whose currency is less valuable than the dollar as Americans could have greater purchasing power because of the difference in currency values.

Topic 6.2 Exchange Rates

Exit Ticket

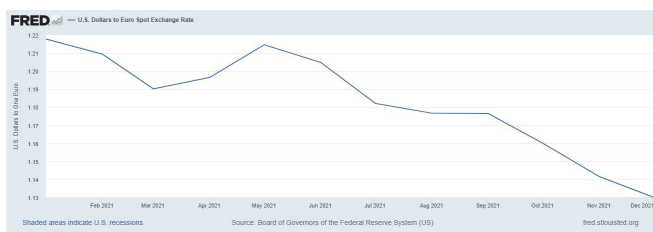
1. FRED Graph 1 shows the dollar (USD) / pound (GBP) spot exchange rate in 2021. Graph 2 shows the dollar (USD) / Euro (EUR) spot exchange rate in 2021. Both graphs use information from the Board of Governors of the Federal Reserve System. Identify in the space below if the dollar is appreciating or depreciating in relation to the other currency.

Graph 1: Dollar to UK Pound



Depreciating

Graph 2: Dollar to Euro



Appreciating

Graph available on FRED Dashboard

<https://fredaccount.stlouisfed.org/public/dashboard/107318> Graphs 10a & 10b: Topic 6.2

In graph 1, the dollar is depreciating in relation to the British pound as it would take \$1.23 to exchange for £1.00. (Conversely, \$1 could be exchanged for £0.77.) One year later it would take \$1.40 to exchange £1—or \$1 exchanged for £0.66. In graph 2, the dollar is appreciating to the euro as the original exchange rate in December 2020 was \$1.21 to purchase €1 (or \$1 to €0.79) and by April 2022 the exchange rate was only \$1.08 to purchase €1—or \$1 exchanged for €0.92.

Topic 6.3 Foreign Exchange Markets

Entrance Ticket

- REVIEW! If the dollar is appreciating against the yen, will Americans buy more or fewer items from Japan?

Americans will buy more items from Japan if the dollar is appreciating as Japanese goods are relatively cheaper.

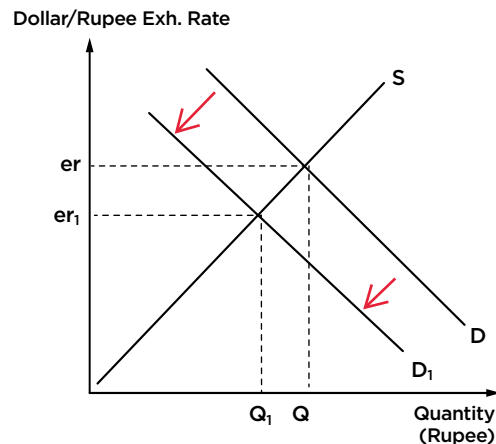
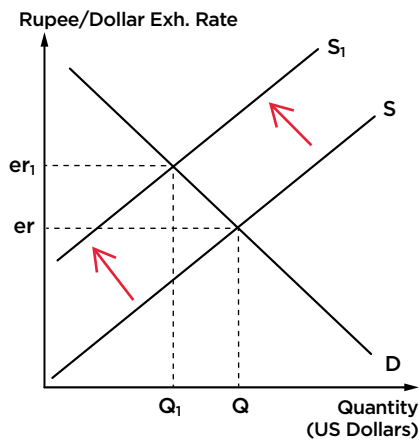
- Imagine you are an investor in Australia. Would you rather place your savings in a Sydney bank offering 0.41% interest annually or a US bank offering 1.8% interest annually?

Students should respond that Australian savers naturally would place their funds in US banks as they are charging a higher interest rate. Tell students that interest rate differences between nations can cause exchange rates and currency values to shift, as they will learn in this section.

Topic 6.3 Foreign Exchange Markets

Exit Ticket

- Consider what will happen to exchange rates if inflation spikes in India. Draw TWO FOREX graphs showing what will happen to the quantity of dollars AND Rupees. (Note: Be sure to label your axes correctly.)



Topic 6.4 Policies & Econ Conditions on FOREX Market

Entrance Ticket

1. What would happen to international trade with China if the US instituted tariffs on Chinese goods?

Trade barriers like tariffs will cause international trade to decrease. Tell students that government actions will not only affect the trade balance but will also affect exchange rates.

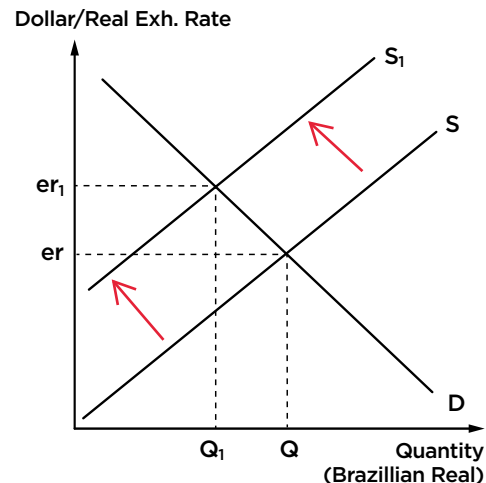
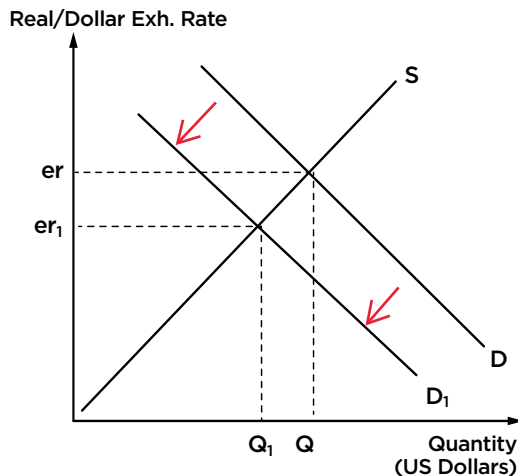
2. If there is a massive recession in the United States, what impact will it have on German GDP?

Answers will vary. Since US consumers will be purchasing less, German exports should decrease, potentially leading to a decrease in German domestic GDP. Like the scenario in question 1, remind students that economic conditions will have an impact on foreign exchange rates as well.

Topic 6.4 Policies & Econ Conditions on FOREX Market

Exit Ticket

1. Consider what will happen if the Federal Reserve initiates an expansionary monetary policy and interest rates fall. If interest rates in Brazil do not change, what will happen in the foreign exchange markets? Draw TWO FOREX graphs showing what will happen to the quantity of dollars AND the Brazilian real. (Note: Be sure to label your axes correctly.)



Topic 6.5 Changes in FOREX Market & Net Exports

Entrance Ticket

1. REVIEW! If exports increase in the United States and imports stay constant, what will happen to real GDP?

Real GDP in the US will increase as a result.

2. REVIEW! If imports are becoming cheaper for American consumers to purchase, does that indicate the US dollar is appreciating or depreciating?

The dollar is appreciating.

Topic 6.5 Changes in FOREX Market & Net Exports

Exit Ticket

1. Circle which groups would benefit from the US dollar appreciating in value to the euro.

US Exporters of Wheat

Italian Tourists Visiting the US

French importers of Hawaiian Coffee

German Exporters of Lederhosen

US Importers of Italian Pasta

American Tourists in Spain

Topic 6.6 Real Interest Rates and Capital Flows

Entrance Ticket

- REVIEW! What is the difference between the financial and current accounts in the balance of payments system?

The current account records the trade balance of goods, services, and transfers, while the financial account measures capital/investment transactions.

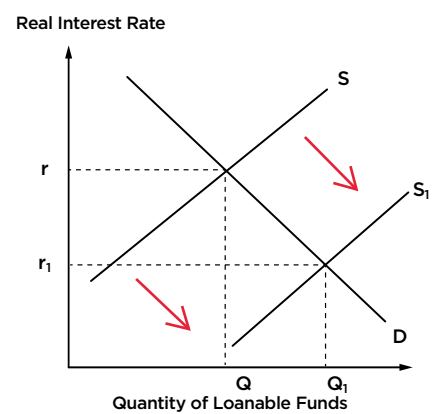
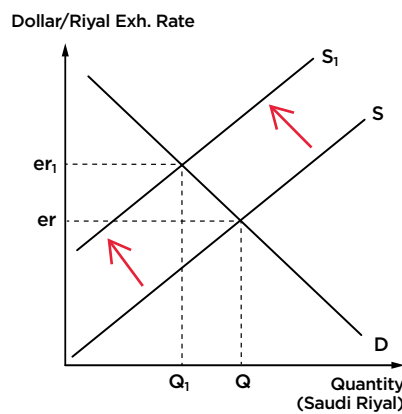
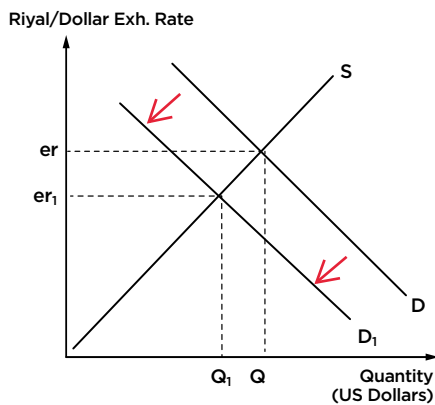
- REVIEW! If a central bank conducts contractionary monetary policy, what will happen to real interest rates in the short term? How might this change affect foreign investment?

Real interest rates will increase. Discuss with students that if interest rates are higher relative to another country, foreign investment should gravitate toward the higher return. Introduce the concept of capital flows and tell students that these forces will affect the exchange rate and loanable funds markets.

Topic 6.6 Real Interest Rates and Capital Flows

Entrance Ticket

- Assume the US will import more oil from Saudi Arabia. Draw THREE graphs showing what will happen to the exchange rate between the dollar and the Saudi riyal AND how that exchange rate change will affect capital flows in the US loanable funds market.



Confidence Tracker Sheet

Unit 1																		
Student Name	1.1 Scarcity			1.2 Opportunity Cost/PPC			1.3 Comparative Advantage			1.4 Demand			1.5 Supply			1.6 Equilibrium		
	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This
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Confidence Tracker Sheet

Student Name	Unit 2																					
	2.1			2.2			2.3			2.4			2.5			2.6			2.7			
	Circular Flow			GDP Limitations			Unemployment			CPI & Inflation			Inflation Costs			Real/Nominal GDP			Business Cycles			
	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	
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Confidence Tracker Sheet

Unit 3

Student Name	3.1 Aggregate Demand			3.2 Multipliers			3.3 Short Run Agg. Supply			3.4 Long Run Agg. Supply			3.5 AD-AS Equilibrium			3.6 AD-AS Short Run Changes			3.7 Long Run Adjustment			3.8 Fiscal Policy			3.9 Automatic Stabilizers				
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Confidence Tracker Sheet

Unit 4

Student Name	4.1 Financial Assets			4.2 Nominal / Real Interest Rates			4.3 Money			4.4 Banking & Money Supply			4.5 Money Market			4.6a Monetary Policy			4.6b Monetary Policy Tools			4.7 Loanable Funds Market			
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Confidence Tracker Sheet

Unit 5																						
Student Name	5.1 Short Run Fiscal Money Policies			5.2 Phillips Curve			5.3 Money Growth & Inflation			5.4 Govt. Deficits/Debt			5.5 Crowding Out			5.6 Economic Growth			5.7 Public Policy & Growth			
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Confidence Tracker Sheet

Unit 6																		
Student Name	6.1 Balance of Payment Accts.			6.2 Exchange Rates			6.3 Foreign Exchange Market			6.4 FOREX & Policies			6.5 FOREX & Net Exports			6.6 Capital Flows		
	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This	Don't Know	Unsure	I've Got This
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Federal Reserve Bank of St. Louis Print Resources Curriculum Alignment

Unit 1

- **The Wealth Game—Factors for Success**
 - <https://www.stlouisfed.org/education/making-personal-finance-decisions-curriculum-unit/factors-for-success>
- **Page One (October 2019) Page One Economics—Money & Missed Opportunities**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/money-and-missed-opportunities>
- **Production Possibilities**
 - <https://www.stlouisfed.org/education/production-possibilities>
- **Arsenal of Democracy—the United States in World War II**
 - <https://www.stlouisfed.org/education/the-arsenal-of-democracy-the-united-states-in-world-war-ii>
- **Is Trade a Zero Sum Game? The Answer Lies in Candy**
 - <https://www.stlouisfed.org/education/is-trade-a-zero-sum-game>
- **The Spending Decision—Colas & Hot Dogs**
 - <https://www.stlouisfed.org/education/making-personal-finance-decisions-curriculum-unit/spending-decision>
- **Unintended Consequences**
 - <https://www.stlouisfed.org/education/unintended-consequences>

Unit 2

- **Page One Economics (September 2018) How Do Imports Affect GDP?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/imports-gdp>
- **Page One Economics (February 2016) Making Sense of Unemployment Data**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/making-sense-of-unemployment-data>
- **Page One Economics (October 2015) What’s in Your Market Basket?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/whats-in-your-market-basket-why-your-inflation-rate-might-differ-from-the-average>
- **Market Basket CPI**
 - <https://www.stlouisfed.org/education/market-basket>
- **GDP Expenditures Equation**
 - <https://www.stlouisfed.org/education/gdp-expenditures-equation>
- **Page One Economics (January 2022) Gender and Labor Markets**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/gender-and-labor-markets>



- **Page One Economics (May 2021) What is Potential GDP and Why Does it Matter?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/minding-the-output-gap>
- **Page One Economics (January 2021) Consumer Spending and Covid-19**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/consumer-spending-pandemic>
- **The Economic Goal of Price Stability**
 - <https://www.stlouisfed.org/education/economic-goal-price-stability>
- **The Rise (and fall) of Inflation During the Early 2020's**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/the-rise-and-fall-of-inflation-during-the-early-2020s>
- **All About the Business Cycle: Where Do Recessions Come From?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/all-about-the-business-cycle>

Unit 3

- **Page One Economics (December 2018) Individual Income Tax: Basics and New Changes**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/individual-income-tax-basics-changes>
- **Page One Economics (May 2015) Falling Oil Prices—Winners and Losers**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/falling-oil-prices-create-winners-and-losers>
- **Government Spending & Taxes**
 - <https://www.stlouisfed.org/education/government-spending-and-taxes>

Unit 4

- **Page One Economics (December 2019) Should We Fear the Inverted Yield Curve?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/should-we-fear-the-inverted-yield-curve>
- **Page One Economics (March 2018) Bitcoin: Money or Financial Investment?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/bitcoin-money-or-financial-investment>
- **Page One Economics (May 2019) Monetary Policy with Ample Reserves**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/monetary-policy-ample-reserve>
- **Page One Economics (May 2020) Independence, Accountability, and the Federal Reserve System**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/independence-federal-reserve>
- **FOMC Challenge**
 - <https://www.stlouisfed.org/education/fomc-challenge>



- **Fed Board Builder**
 - <https://www.stlouisfed.org/education/fed-board-builder>
- **Federal Reserve Monetary Policy Timeline**
 - <https://www.stlouisfed.org/education/monetary-policy-timeline>
- **How Federal Reserve Bank Presidents Ensure “Main Street” is Represented in Monetary Policy**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/federal-reserve-banks-ensure-main-street-is-represented>
- **Page One Economics (September 2021) Banks and the Fed: RIP Money Multiplier**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/teaching-the-linkage-between-banks-and-the-fed>
- **Lecture Guide: How the Federal Reserve Implements Monetary Policy**
 - <https://www.stlouisfed.org/education/monetary-policy-lecture-guide>
- **Page One Economics (November 2023) Why Do Bond Prices & Interest Rates Move in Opposite Directions?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/bond-rates-interest-rates-opposite-directions>

Unit 5

- **Page One Economics (November 2019) Making Sense of the National Debt**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/making-sense-of-the-national-debt>
- **Page One Economics (March 2017) The Productivity Puzzle**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/the-productivity-puzzle>
- **Page One Economics (September 2013) What Are the Ingredients for Economic Growth?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/what-are-the-ingredients-for-economic-growth>
- **Crowding Out**
 - <https://www.stlouisfed.org/education/crowding-out>
- **Page One Economics (Summer 2021) Inflation, The Phillips Curve, and the Fed’s Dual Mandate**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/inflation-expectations-phillips-curve-feds-dual-mandate>

Unit 6

- **Page One Economics (November 2016) International Trade: Making Sense of the Trade Deficit**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/international-trade>
- **Page One Economics (March 2015) Is a Strong Dollar Better than a Weak Dollar?**
 - <https://www.stlouisfed.org/education/page-one-economics-classroom-edition/is-a-strong-dollar-better-than-a-weak-dollar>



Exit Ticket AP Macroeconomics Curriculum Alignment

UNIT 1

1.1 Scarcity

- MOD-1.A: Define resources and the cause(s) of their scarcity
 - MKT-1.A.2: Individuals and societies are forced to make choices because most resources are scarce.

1.2 Production Possibilities Curve

- MOD-1.B.b: Define (using graphs as appropriate) the production possibilities curve (PPC) and related terms
 - MOD-1.B.3: The shape of the PPC depends on whether opportunity costs are constant, increasing or decreasing.

1.3 Comparative Advantage/Trade

- MKT-2.B.b: Calculate (using data from PPCs or tables as appropriate) mutually beneficial terms of trade.
 - MKT-1.B.2: Comparative advantage and opportunity costs determine the terms of trade for exchange under which mutually beneficial trade can occur.

1.4 Demand

- MKT-2.A.b: Explain (using graphs as appropriate) the relationship between price and quantity demanded and how buyers respond to incentives and constraints.
 - MKT-2.A.1: The law of demand states there is an inverse relationship between price and quantity demanded, leading to a downward-sloping demand curve.

1.5 Supply

- MKT-2.C: Explain (using graphs as appropriate) the relationship between the price of a good or service and the quantity supplied.
 - MKT-2.D.1: Factors that influence producer supply, such as changes as input supplies, cause the market supply curve to shift.

1.6 Market Equilibrium & Consumer/Producer Surplus

- MKT-2.G: Explain (using graphs as appropriate) how changes in demand and supply affect equilibrium price and equilibrium quantity.
 - MKT-2.G.1: Changes in the determinants of supply and/or demand result in a new equilibrium price and quantity.

Unit 2

2.1 The Circular Flow & GDP

- MEA-1.A.a: Define (using the circular flow diagram as appropriate) how GDP is measured and its components.
 - MEA-1.A.2: GDP as a total flow of income and expenditure can be represented by the circular flow diagram

2.2 Limitations of GDP

- MEA-1.B: Define the limitations of GDP
 - MEA-1.B.1: GDP is a useful indicator of a nation's economic performance, but it has some limitations, such as failing to account for nonmarket transactions



2.3 Unemployment

- MEA-1.E.a: Define the types of unemployment and the natural rate of unemployment
- MEA-1.E.2: The natural rate of unemployment is the unemployment rate that would exist when the economy produces full-employment real output. It is equal to the sum of frictional and structural unemployment.

2.4 Price Indices & Inflation

- MEA-1.F.b: Explain how price indices can be used to calculate the inflation rate and to compare nominal variables over time periods.
- MEA-1.F.3: The inflation rate is determined by calculating the percentage change in a price index, such as CPI or the GDP deflator.

2.5 Costs of Inflation

- MEA-1.H: Explain the costs that unexpected inflation (deflation) imposes on individuals and the economy.
- MEA-1.H.1: Unexpected inflation arbitrarily redistributes wealth from one group of individuals to another group, such as lenders to borrowers.

2.6 Real v. Nominal GDP

- MEA-1.I: Define nominal GDP and real GDP
- MEA-1.I.2: Nominal GDP measures aggregate output using current prices. Real GDP measures aggregate output using constant prices, thus removing the effect of changes in the overall price level.

2.7 Business Cycles

- MEA-2.A.b: Explain (using graphs and data as appropriate) turning points and phases of the business cycle.
 - o MEA-2.A.2: The phases of a business cycle of recession and expansion.

UNIT 3

3.1 Aggregate Demand (AD)

- MOD-2.A.a: Define (using graphs as appropriate) the aggregate demand (AD) curve.
- MEA-2.A.1: The aggregate demand curve describes the relationship between the price level and the quantity of goods and services demanded by households (consumption) firms (investment) government (government spending) and the rest of the world (net exports).

3.2 Multipliers

- MOD-2.B.c: Calculate how changes in spending and taxes lead to changes in real GDP.
- MEA-2.B.5: The marginal propensity to consume is the change in consumer spending divided by the change in disposable income. The sum of the marginal propensity to consume and the marginal propensity to save is equal to one.

3.3 Short-Run Aggregate Supply (SRAS)

- MOD-2.C.a: Define (using graphs as appropriate) the short-run aggregate supply (SRAS) curve.
- MOD-2.C.3: Any factor that causes production costs to change, such as a change in inflationary expectations, will cause the SRAS curve to shift.



3.4 Long-Run Aggregate Supply (LRAS)

- MOD-2.F: Define (using graphs as appropriate) the long run aggregate supply curve.
 - MOD-2.F.2: The LRAS curve is vertical at the full employment level of output because in the long run wages and prices fully adjust.

3.5 Equilibrium in the Aggregate Demand–Aggregate Supply (AD-AS) Model

- MOD-2.G: Explain (using graphs as appropriate) the short run and long run equilibrium price level & output level.
 - MEA-2.A.2: The phases of a business cycle of recession and expansion.

3.6 Changes in the AD-AS Model in the Short Run

- MOD-2.H: Explain (using graphs as appropriate) the response of output, employment, and the price level to an aggregate demand or aggregate supply shock in the short run.
 - MOD-2.H.3: Inflation can be caused by changes in aggregate demand (demand-pull) or aggregate supply (cost-push).

3.7 Long-Run Self-Adjustment

- MOD-2.I: Explain (using graphs and appropriate) the response of output, employment and the price level to an aggregate demand or aggregate supply shock in the long run.
 - MEA-2.I.2: Shifts in the long run aggregate supply curve indicate changes in the full employment level of output and economic growth.

3.8 Fiscal Policy

- POL-1.A.a: Define fiscal policy and related terms.
 - POL-1.A.5: Expansionary or contractionary fiscal policies are used to restore full employment when the economy is in a negative (i.e. recessionary) or positive (i.e. inflationary) output gap.

3.9 Automatic Stabilizers

- POL-1.C.b: Explain how automatic stabilizers moderate business cycles.
 - POL-1.C.1: Automatic stabilizers support the economy during recessions and help prevent the economy from being overheated during expansionary periods.

UNIT 4

4.1 Financial Assets

- MEA-3.A.a: Define the principal attributes—liquidity, rate or return and risk—associated with various classes of financial assets including money.
 - MEA-3.A.4: The opportunity cost of holding money is the interest that could have been earned from holding other financial assets such as bonds.

4.2 Nominal v. Real Interest Rates

- MEA-3.B.c: Calculate the nominal and real interest rate.
 - MEA-3.b.3: A real interest rate can be calculated in hindsight by subtracting the actual inflation rate from the nominal interest rate.

4.3 Definition, Measurement & Functions of Money

- MEA-3.C.a: Define money and its functions
 - MEA-3.C.2: Money serves as a medium of exchange, unit of account and store of value.

4.4 Banking & the Expansion of the Money Supply

- POL-2.A.c: Calculate (using date and balance sheets as appropriate) the effects of changes in the banking system.
- POL-2.A.7: The maximum value of the money multiplier can be calculated as the reciprocal of the required reserve ratio.

4.5 The Money Market

- MKT-3.D.b: Explain (using graphs as appropriate) how changes in demand and supply in the money market affect the equilibrium nominal interest rate.
- MKT-3.D.1: Factors that shift the demand for money, such as changes in price level and supply of money, such as monetary policy, change the equilibrium nominal interest rate.

4.6 Monetary Policy

- POL-1.D.b: Explain (using graphs as appropriate) the short run effects of a monetary policy action.
- POL-1.D.7: Expansionary or contractionary monetary policies are used to restore full employment when the economy is in negative (recessionary) or positive (inflationary) output gap.

4.7 The Loanable Funds Market

- MKT-4.E.b: Explain (using graphs as appropriate) how changes in demand and supply in the loanable funds market affect the equilibrium real interest rate and equilibrium quantity of loanable funds.
- MKT-4.E.1: The loanable funds market can be used to show the effects of government spending, taxes and borrowing on interest rates.

UNIT 5

5.1 Fiscal and Monetary Policy Actions in the Short Run

- POL-1.F: Explain (using graphs as appropriate) the effects of combined fiscal and monetary policy actions
- POL-1.F.2: A combination of fiscal and monetary policies can influence aggregate demand, real output, the price level and interest rates.

5.2 The Phillips Curve

- MOD-3.A.a: Explain (using graphs as appropriate) the short run Phillips Curve and the long-run Phillips Curve.
- MOD-3.A.5: Points to the left of the long run equilibrium represent inflationary gaps, while points to the right of long run equilibrium represent recessionary gaps.

5.3 Money Growth & Inflation

- POL-3.A.c: Calculate the money supply, velocity, the price level, and real output using the quantity theory of money.
- POL-3.A.3: In the long run, the growth rate of the money supply determines the growth rate of the price level (inflation) according to the quantity theory of money.

5.4 Government Deficits & the National Debt

- POL-3.B: Define the government budget surplus (deficit) and national debt.
- POL-3.B.2: A government adds to the national debt when it runs a budget deficit.

5.5 Crowding Out

- POL-3.C.b: Explain (using graphs as appropriate) how fiscal policy may cause crowding out.
 - POL-3.C.3: Crowding out refers to the adverse effect of increased government borrowing, which leads to decreased levels of interest sensitive private sector spending in the short run.

5.6 Economic Growth

- MOD-1.B: Explain (using graphs as appropriate) how the PPC is related to the long-run aggregate supply (LRAS) curve.
 - MOD-1.B.1: An outward shift in the PPC is analogous to a rightward shift of the long-run aggregate supply curve.

5.7 Public Policy & Economic Growth

- POL-4.A.b: Define supply side fiscal policies.
 - POL-4.A.3: Supply side fiscal policies affect aggregate demand, aggregate supply and potential output in the short run and long run by influencing incentives that affect household and business economic behavior.

UNIT 6

6.1 Balance of Payment Accounts

- MEA-4.A.a: Define the current account (CA), the capital and financial account (CFA), and the balance of payments (BOP)
 - MEA-4.A.6: Any transaction that causes money to flow into a country is a credit to its BOP account and any transaction that causes money to flow out is a debit. The sum of all credit entries should match the sum of all debit entries ($CA+CFA=0$)

6.2 Exchange Rates

- MKT-5.A.b: Explain how currencies are valued relative to one another
 - MKT-B.A.2: If one currency becomes more valuable in terms of the other it is said to appreciate. If one currency becomes less valuable in terms of the other it is said to depreciate.

6.3 The Foreign Exchange Market

- MKT-5.B: Explain (using graphs as appropriate) the relationship between the exchange rate and the quantity of currency demanded (supplied)
 - MKT-5.B.2: The supply of a currency in a foreign exchange market arises from making payments in other currencies and shows the positive relationship between the exchange rate and the quantity of a supplied currency.

6.4 Effect of Changes in Policies & Economic Conditions on the Foreign Exchange Market

- MKT-5.E.b: Explain (using graphs as appropriate) how changes in demand and supply in the foreign exchange market affect the equilibrium exchange rate.
 - MKT-5.E.3: Monetary policy can influence aggregate demand, real output, price level and interest rates, and thereby affect exchange rates

6.5 Changes in the Foreign Exchange Market and Net Exports

- MKT-5.F: Explain (using graphs as appropriate) how changes in the value of a currency can lead to changes in a country's net exports and aggregate demand.
- MKT-5.F.1: Factors that cause a currency to appreciate cause that country's exports to decrease and its imports to increase. As a result, net exports will decrease

6.6 Real Interest Rates and International Capital Flows

- MKT-5.G: Explain (using graphs as appropriate) how differences in real interest rates across countries affect financial capital flows, foreign exchange markets and loanable funds markets.
- MKT-5.G.1: IN an open economy, differences in real interest rates across countries change the relative values of domestic and foreign assets. Financial capital will flow toward the country with the relatively higher interest rate.