MobLab
A playground for decisions

Taxes

Taxes on Sellers and Buyers

 MobLab

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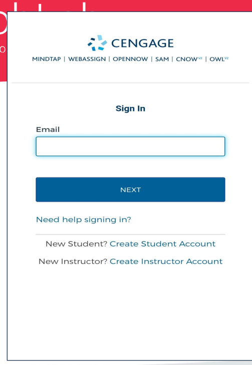

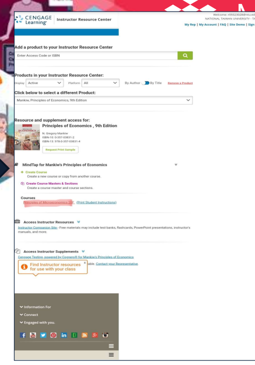

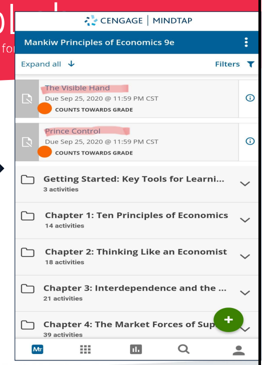

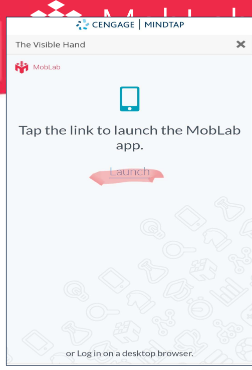

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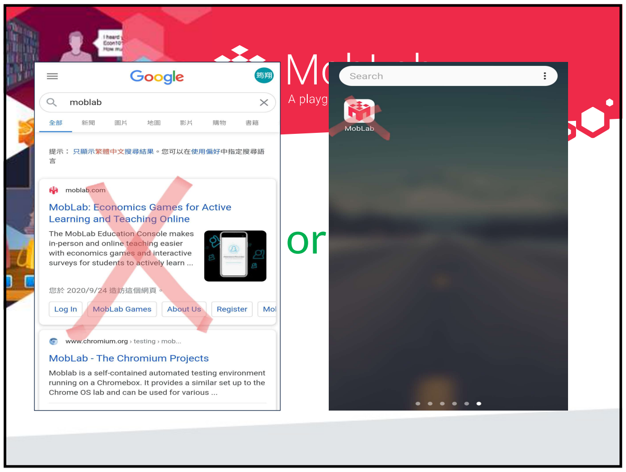
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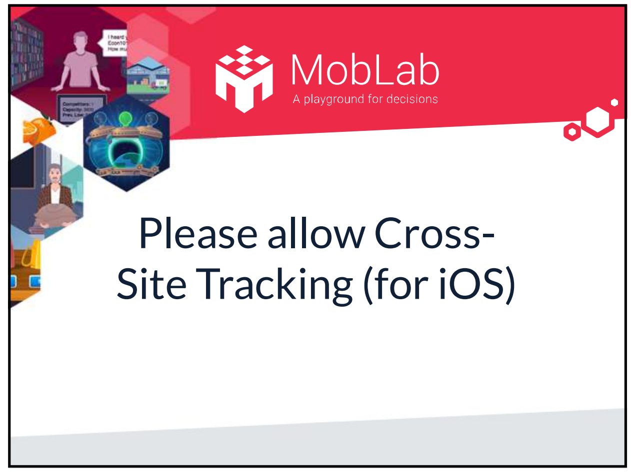
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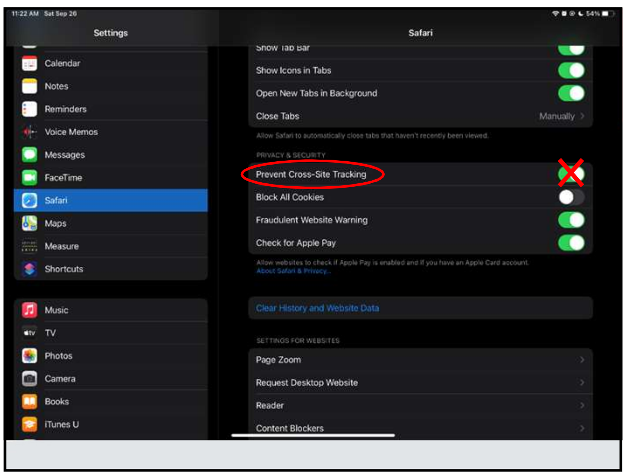
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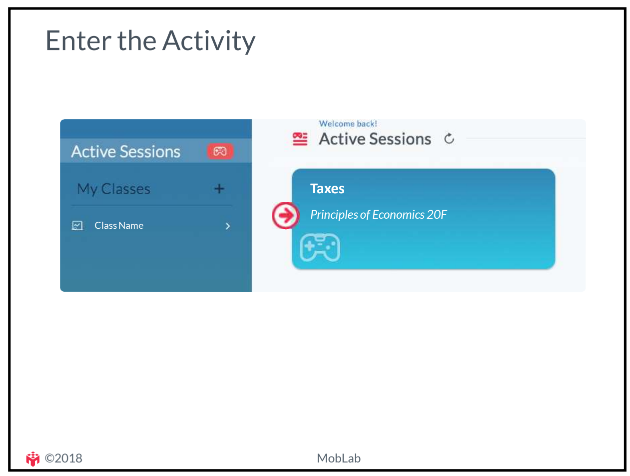
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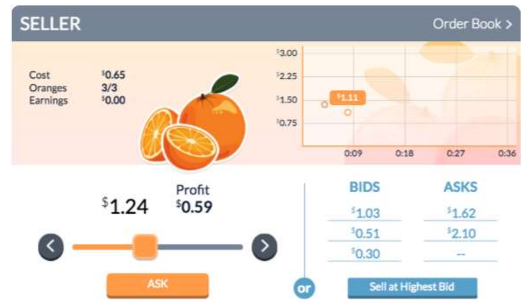
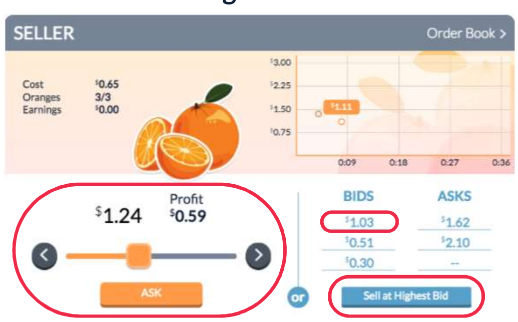
Groups of 5 sellers and 5 buyers.
Trade to maximize your profits!

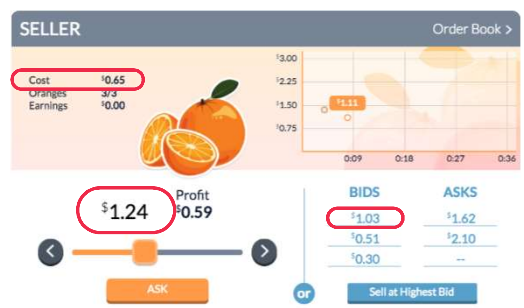
SELLERS



Submit an **ASK** using the slider, or **Sell at Highest Bid**

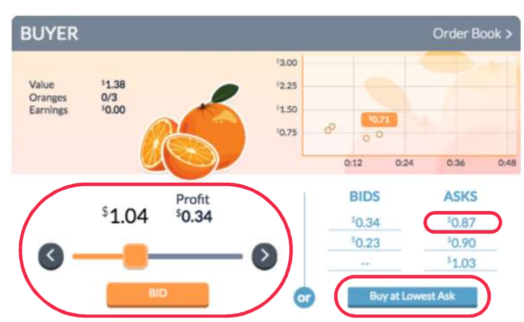


Seller’s Profit = Sale Price – Cost

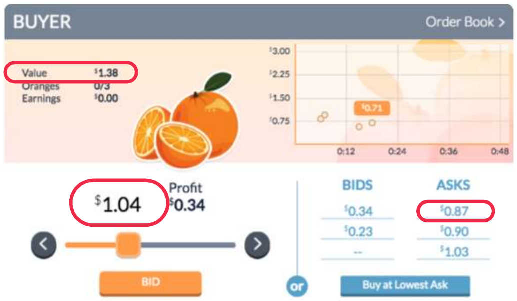


BUYERS

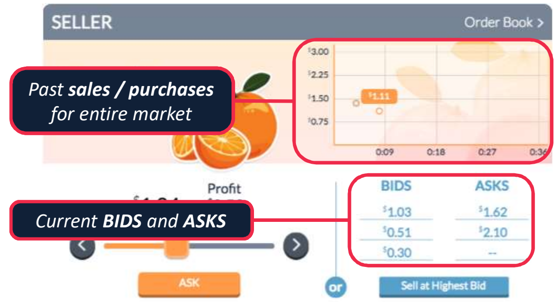
Submit a **BID** using the slider, or **Buy at Lowest Ask**



Buyer's Profit = Value – Purchase Price



Bids are offers to buy, **Asks** are offers to sell



When does a transaction occur?

- Someone uses Buy at Lowest Ask Sell at Highest Bid
- A Buyer places a BID higher than the lowest outstanding Ask (Purchase Price at Lowest Ask)
- A Seller places an ASK lower than the highest outstanding Bid (Sale Price at Highest Bid)

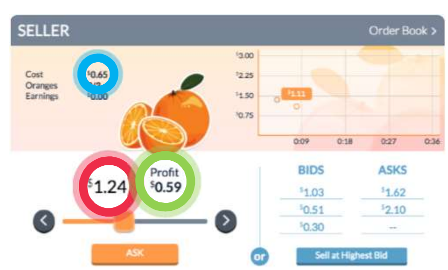
What happens when a transaction occurs?

- Buyers
  - The value for the next orange is lower than the previous orange
- Sellers
  - The cost to supply the next orange is greater than the previous orange

Pre-Game Survey

Market Forces

As a **seller**, what is your profit if someone accepts your ask of $1.24?



Sale Price – Cost = $1.24 - $0.65 = $0.59

As a **buyer**, what is your profit if you "Buy at Lowest Ask"?

Value – Purchase Price =$1.38 - $0.87= $0.51

What will Price and Quantity be?

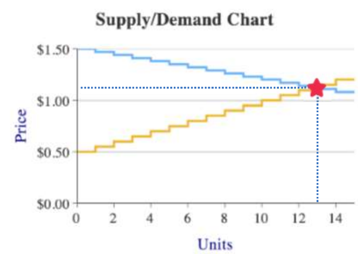
Let's find out:

- You've been told to maximize your own profits.
- The Law of Supply and Demand predicts your group's behavior.
- Will the prediction be accurate?

Game Time!

Market Forces

What was the Equilibrium Price and Quantity of your market?



Equilibrium P: $1.12 *Equilibrium Q: 13*

Taxes

What will happen to Price and Quantity?

Let's find out:

- Suppose that the government puts a $0.32 tax on the **sellers** of oranges.

Game Time!

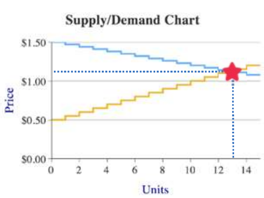
Taxes

Post-Game Survey

Taxes

What happened to Price and Quantity?

Before Tax

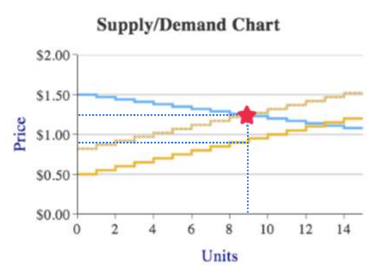


P: $1.12 Q: 13

After Tax

P: $1.24 Q: 9

How much did sellers receive after the tax?



Sale Price – Tax = $1.24 - $0.32= $0.92

What will happen to Price and Quantity?

Let's find out:

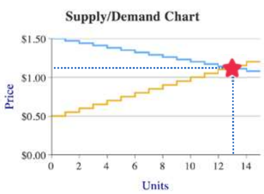
- Suppose that the government puts the same $0.32 tax on the **buyers** of oranges.

Game Time!

Taxes

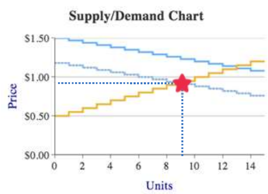
What happened to Price and Quantity?

Before Tax



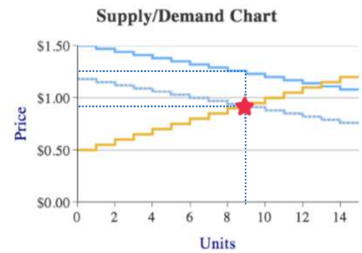
P: $1.12 Q: 13

After Tax



P: $0.92 Q: 9

How much did buyers pay?



Sale Price + Tax = $0.92 + $0.32 = $1.24

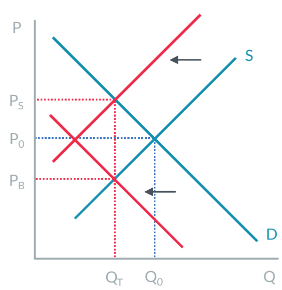
Results Discussion

Taxes

Concept Review

Taxes

Who bears the burden of a tax?



Price paid or received is the same regardless of who the government places the tax on

	Sellers Receive	Buyers Pay
Tax on Sellers	$1.24 - $0.32 = $0.92	$1.24
Tax on Buyers	$0.92	$0.92 + $0.32 = $1.24

- Tax burden is shared regardless of who the government places the tax on.
  - *Elasticity* is the measure of how much each side of the market responds to a price change.
  - A tax changes the price buyers pay and producers receive
  - *Elasticity* determines how the burden is shared.

Key Takeaways

- *Tax Incidence* is the way in which the burden of a tax is split among producers and consumers.
  - Tax incidence is not dictated by whom the tax is placed upon but by the *elasticities* of the supply and demand curves.

Completed!

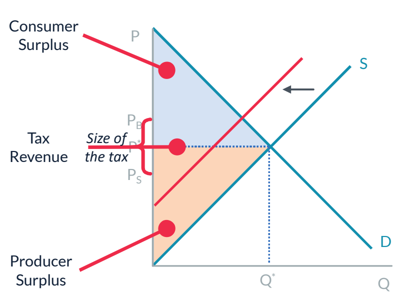
Taxes

Deadweight Loss

What happens to overall surplus?

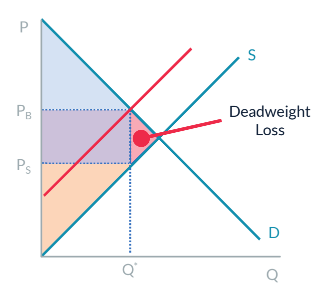
- When a tax is levied, buyers pay more and sellers receive less
- The difference in how much more buyers pay and how much less sellers receive is the amount of the tax
- It does not matter who the tax is levied on, the result is the same
- Since buyers pay more, they buy less
- Since sellers receive less, they produce less

Tax Revenue



Tax Revenue is the amount of the tax multiplied by the quantity transacted

Deadweight Loss

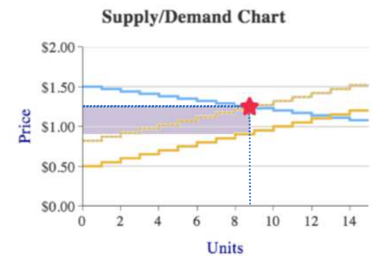


Deadweight Loss is the surplus lost as a result of quantity transacted decreasing

What happens to overall surplus?

- For a trade that has a surplus greater than the tax:
  - Total surplus does not change
  - Consumer surplus and producer surplus decrease and is transferred to the government
- For a trade that has a surplus less than the tax:
  - The trade does not happen
  - Producer surplus and consumer surplus is 0
  - The government collects no revenue
  - This is the source of Deadweight loss

How much tax revenue does the government raise with a $0.32 tax?



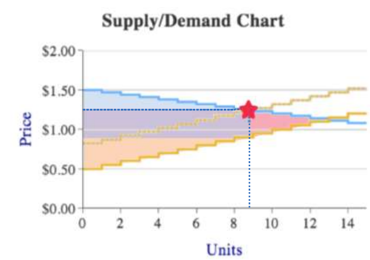
Tax x Quantity = $0.32 x 9 = $2.88

About how much Deadweight Loss does the tax cause?

	Before Tax	After Tax
Consumer Surplus	$2.50	$1.20
Producer Surplus	$4.00	$1.90
Tax Revenue	-	$2.88
Total	$6.50	≈ $6.00

There is about $0.50 of Deadweight Loss

About how much Deadweight Loss does the tax cause?



Potential Surplus – Tax Rev. – Consumer Surplus – Producer Surplus ≈ DWL

$6.50 – $2.88 – $1.20 – $1.90

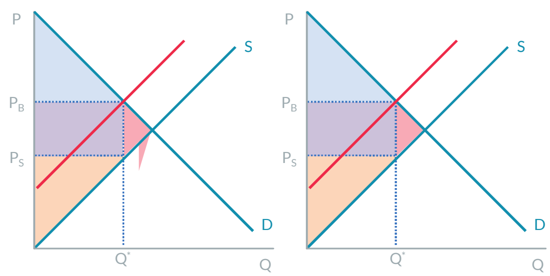
Concept Review

Deadweight Loss

Producers produce less and Buyers buy less

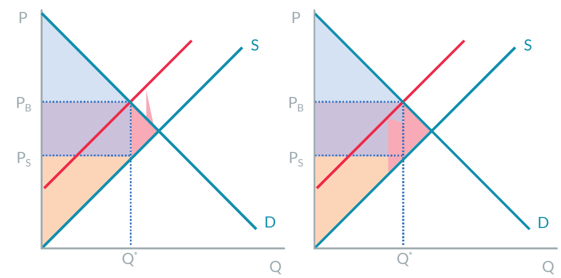
- Reduction in the quantity transacted is the source of the Deadweight Loss
- Deadweight Loss is the surplus lost that is not captured by the consumers, producers, or the government
- Another way of looking at it is that Deadweight Loss is equal to the surplus from transactions that would have happened if there was no tax

Elasticity determines the amount of Deadweight Loss



More inelastic supply → Smaller DWL More elastic supply → Larger DWL

Elasticity determines the amount of Deadweight Loss



More inelastic demand → Smaller DWL More elastic demand → Larger DWL

Key Takeaways

- *Deadweight Loss* is the decrease in total surplus and that results from foregone production (and subsequent consumption) due to a distortionary tax or other market distortion.
  - In other words, it is the overall cost to society of a tax or other market distortion
  - Elasticities and the size of a tax are the key components in determining the size of a Deadweight Loss

Completed!

Deadweight Loss

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