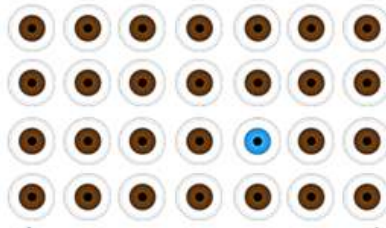


Phenomena #1

Original Population

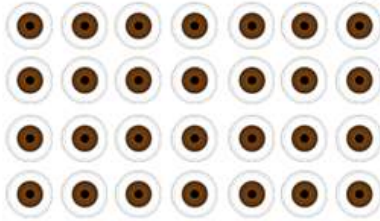


Trait: Eye Color

B = Dominant b = recessive

BB = 25 Individuals  
 Bb = 2 Individuals  
 bb = 1 Individual

Population X



Trait: Eye Color

B = Dominant b = recessive

BB = 28 Individuals  
 Bb = 0 Individuals  
 bb = 0 Individual

Analysis #2

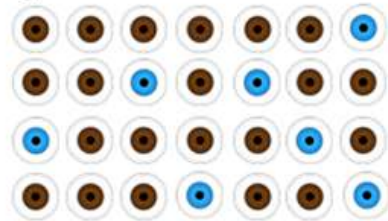
What happened that caused the original population to change into population X?

Analysis #1

What happened in the original population?

Evolutionary Force #1

Population Y



Trait: Eye Color

B = Dominant b = recessive

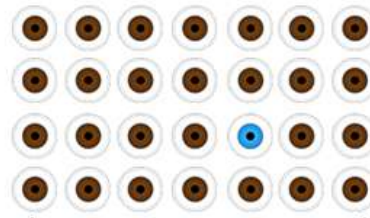
BB = 11 Individuals  
 Bb = 10 Individuals  
 bb = 7 Individual

Analysis #3

What happened that caused the original population to change into population Y?

Phenomena #2

Original Population



Trait: Eye Color

B = Dominant b = recessive

Assume b = \_\_\_\_\_

Small Population = 1:28

If we assume b = \_\_\_\_\_

How fast will this mutated gene spread within a small population?

Evolutionary Force #3

Large Population = 1:2,800,000,000

If we assume b = \_\_\_\_\_

How fast will this mutated gene spread within a large population?

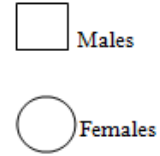
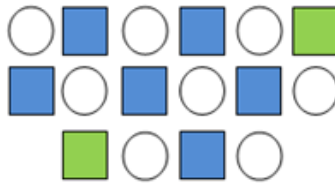
Evolutionary Forces

How Small Populations Lead to Genetic Drift

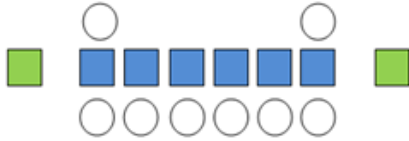
Bottleneck	Founder Effect	Geographic Isolation

Phenomena #3

Original Population



Non-Random Mating (Choosiness)



Analysis #1

What happened is happening between the males and females in the non-random mating population?

Random Mating (Lottery)



Analysis #2

What happened is happening between the males and females in this random mating population?

Evolutionary Force #4

Phenomena #4

Original Population



No Immigration/Emigration



Analysis #1

How does the original population change when there is no immigration or emigration?

Emigration/Immigration



Analysis #2

How does the original population change when there is immigration and emigration?

Evolutionary Force #5

Emigration

Immigration

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## Analysis of Evolutionary Forces

Evolution = change in gene pool over time

Option #1	Option #2	Which leads to evolution?
No Mutation	Mutations	
No Natural Selection	Natural Selection	
Small Populations	Large Populations	
Random Mating	Non-Random Mating	
Immigration/Emigration	No Immigration/Emigration	