

Assignment #3 Natural Selection

LO: To explain the process of evolution.

EQ: How would a population of mostly black rabbits evolve to be mostly white. (4 sentences, underline key words)

AGENDA 2/10-2/11

1. Notes
2. Activity

HOMEWORK

1. Finish stamps

LEVEL ZERO VOICE

CATALYST (10 minutes, individual work):

1. Define evolution
2. Give evidence that support the theory of evolution.
there are five pieces of evidence

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CATALYST (10 minutes, individual work):

1. Define evolution: change over time, creates new species, all life evolved from one common ancestor
2. Give evidence that support the theory of evolution.
there are four pieces of evidence
 1. Fossils show change over time
 2. Homologies--Similar structures
 3. Similar DNA
 4. Still happening today

Look over your quickwrite from assignment 1. Read it quietly for 30 seconds. When you are finished, flip back to our current assignment.

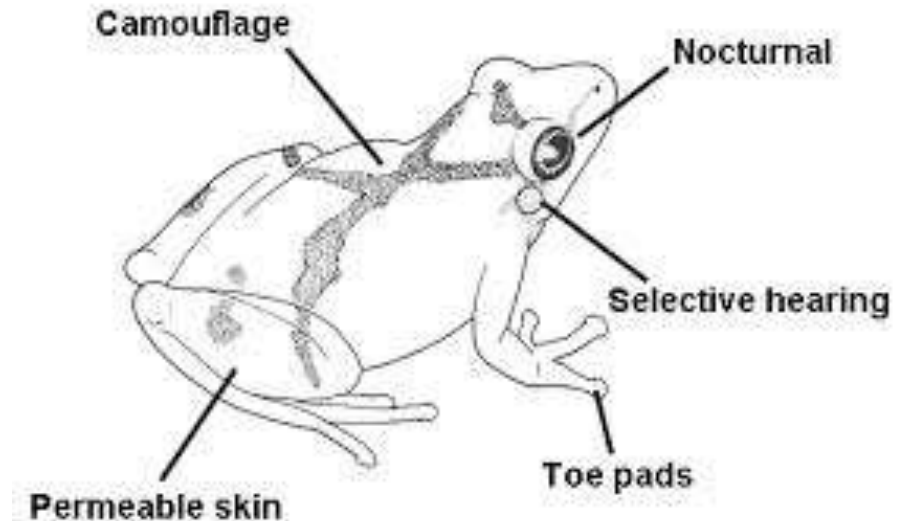
Notes

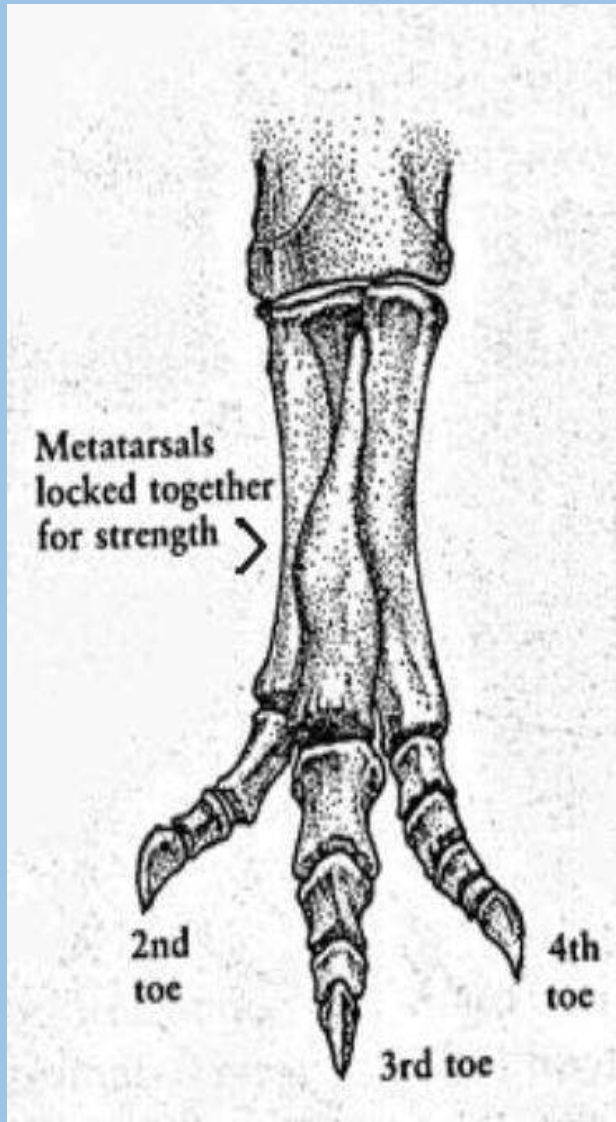
Adaptation: a trait that organisms of a species develop over time that allow for success

-sexual reproduction

-occurs through random mutation during reproduction

Can you think of any examples of adaptations?





Adaptations of Owls

totally silent flight from fringed flight feathers that muffle the sound of air passing through their feathers



large eyes set forward on the head gives great depth perception for hunting plus retinas of their eyes are packed with low light sensitive rods to see at night.

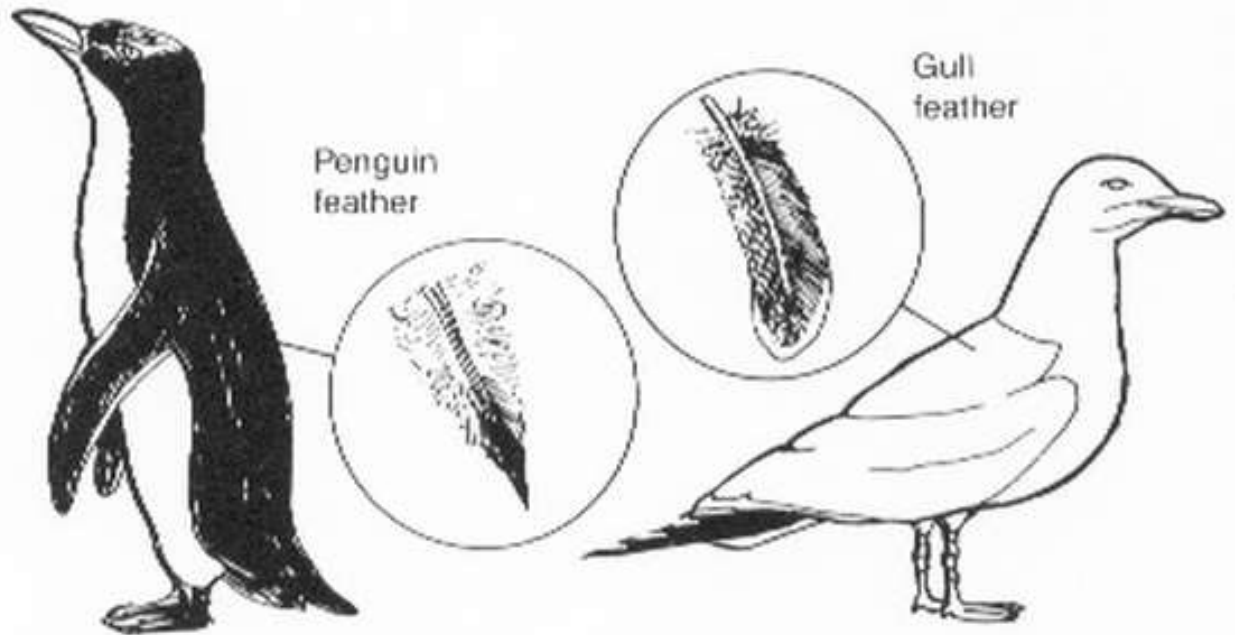
their necks have a lot of flexibility for following prey as they move.

sharp talons for catching prey on the fly



FEATHERED SWIMSUIT

Penguin feathers are very small and overlap each other. This arrangement provides insulation against cold temperatures and streamlines the body for rapid swimming.



Activity: 20 minutes



Every student is a bird that lives on this island.
You are all the SAME species.

Your beaks will be represented by utensils.

You all have different shaped beaks just like how humans have different shaped noses, eyes, and ears.

Activity: 20 minutes



Pop quiz:

What are you guys?

Are you all the same species?

Do you all look the same?

Activity: 20 minutes

Your beaks: spoons, chopsticks, forks, knives

For that past 3000 years the island has had a variety of foods for you guys. Small beans, medium sized beans, sticky beans, beans that are easy to stab, etc.

Due to pollution caused by human practices, most of the beans have died off leaving only one....

At the top of your notes, create a 4 box comic that shows what happened on your island.



Instructions and Handout

1. Every table has one bean plant (plate of beans).
This is what you will be eating from.
2. Each bird will go one at a time at a desk.
3. Each bird has 3 seconds to gather as many beans as possible
4. The bird that collects the *least* # of beans will die out.
5. The winning bird will get to increase their population by one (the extinct bird is reborn with the beak of the winning bird)



Activity Quickwrite:

Restate your questions!

How did the population of birds change over the 4000 years?

Knowing this, how do you think a new species can arise?

Notes Today

Words will be in green

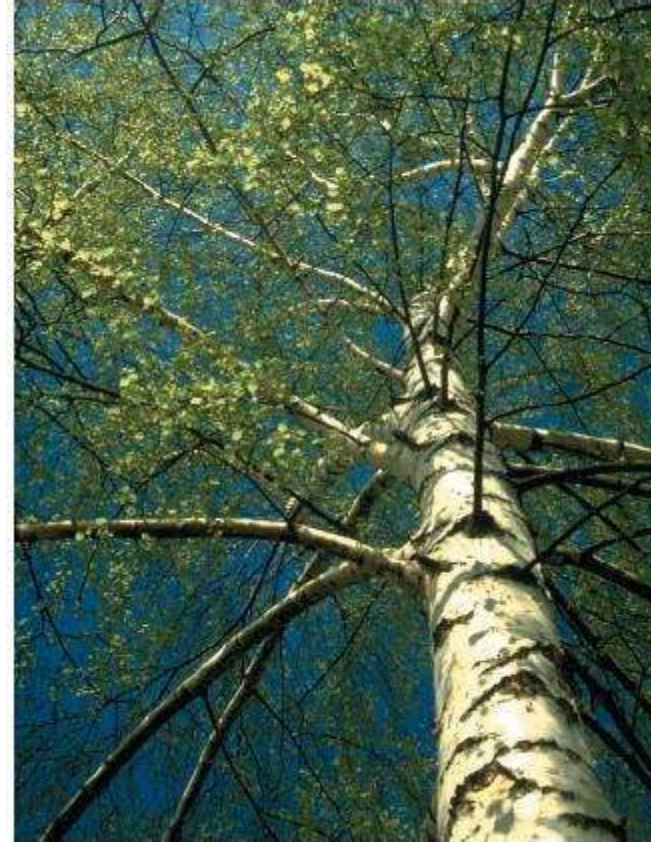
Not black, not required to write.
Not blue either...

You will need to choose what is important that you want to write down based off of what is on the board and what I will say to you.

Peppered Moth

“Biston betularia”

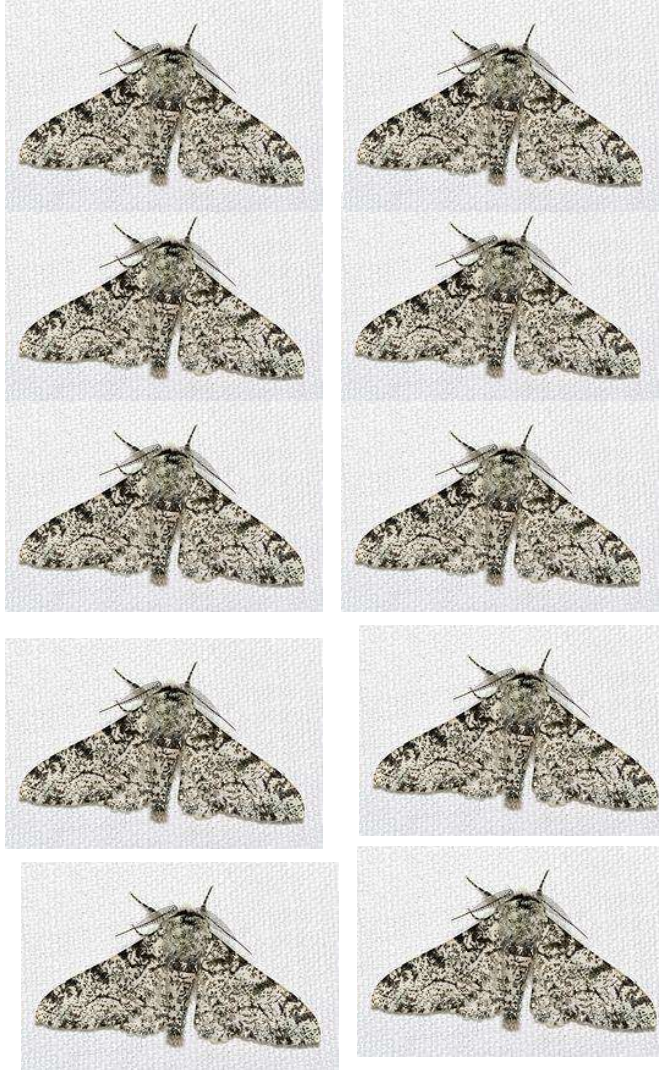
- Nocturnal
- Rest on tree trunks during the day
- Males spend most nights looking for females
- Preyed upon by birds

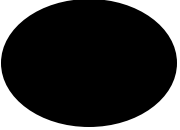
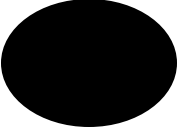
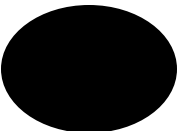
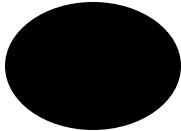
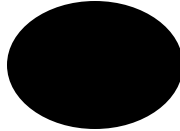
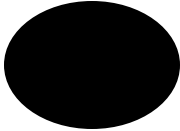
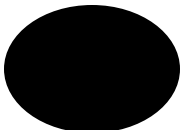


Same Species: Different coloration



Pre-Industrialization





How many of each color did you
see?

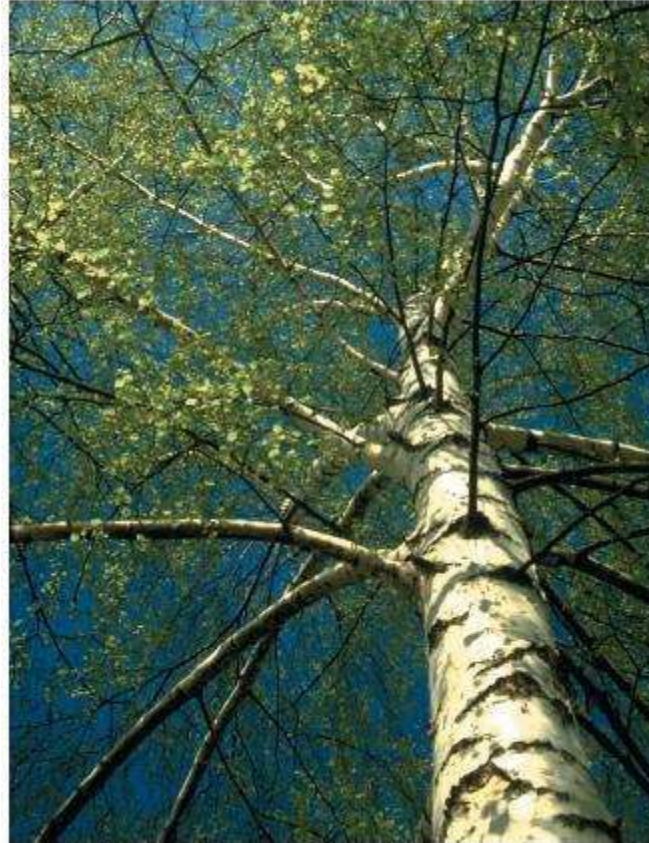
7 Black & 9 White

Why is this important?
Think “Yum-Yum”

Talk in groups about this. Remember
you 10% work habits grade.

Habitat Favors White Moths

- Bark of this tree is white
- White moths camouflage with bark of trees
- Easier for predators to see black moths
- White moths survive and reproduce



Real World Example “Industrial London”



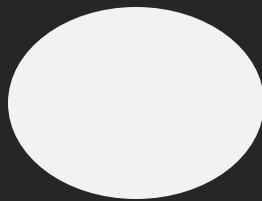
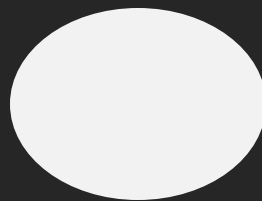
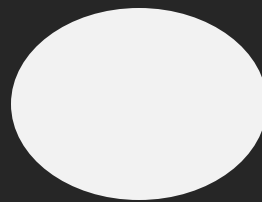
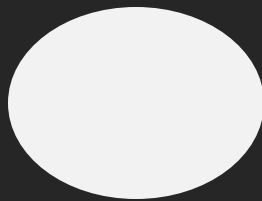
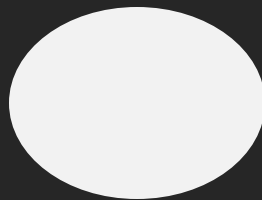
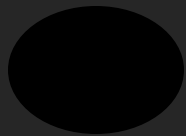
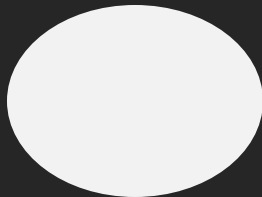
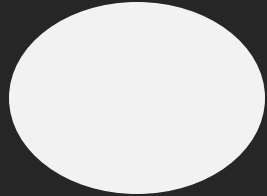
As the industrial revolution began to take place, how did the air change around the streets of London?

SMOG!!!!!!



Industrialization!!

With the addition of smog, what happened to the color of trees?



How many did you see of each
color?

7 White & 9 Black



Habitat Favors Black Moths

- Bark of this tree is stained black
- Black moths camouflage with bark of trees
- Easier for predators to see white moths
- Black moths survive and reproduce



What drives this?

Natural Selection

The most advantageous phenotypes will be “selected” to reproduce

Who selects?

What causes the phenotypes?

Natural selection, in a nutshell:



Quickwrites

Don't forget to use academic language!

1.) How does evolution relate to genetics and punnett squares?

2.) Why does evolution take thousands-->millions of generations?

3.) Explain what forces determine how a species will evolve. (hint: survival depends on reproducing)

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LEVEL ZERO VOICE

Processing Task (10 minutes, individual work):

How does evolution work?

Step 1 [Lined writing area]	[Drawing area]
Step 2 [Lined writing area]	[Drawing area]
Step 3 [Lined writing area]	[Drawing area]
Step 4 [Lined writing area]	[Drawing area]
Step 5 [Lined writing area]	[Drawing area]

Drawing