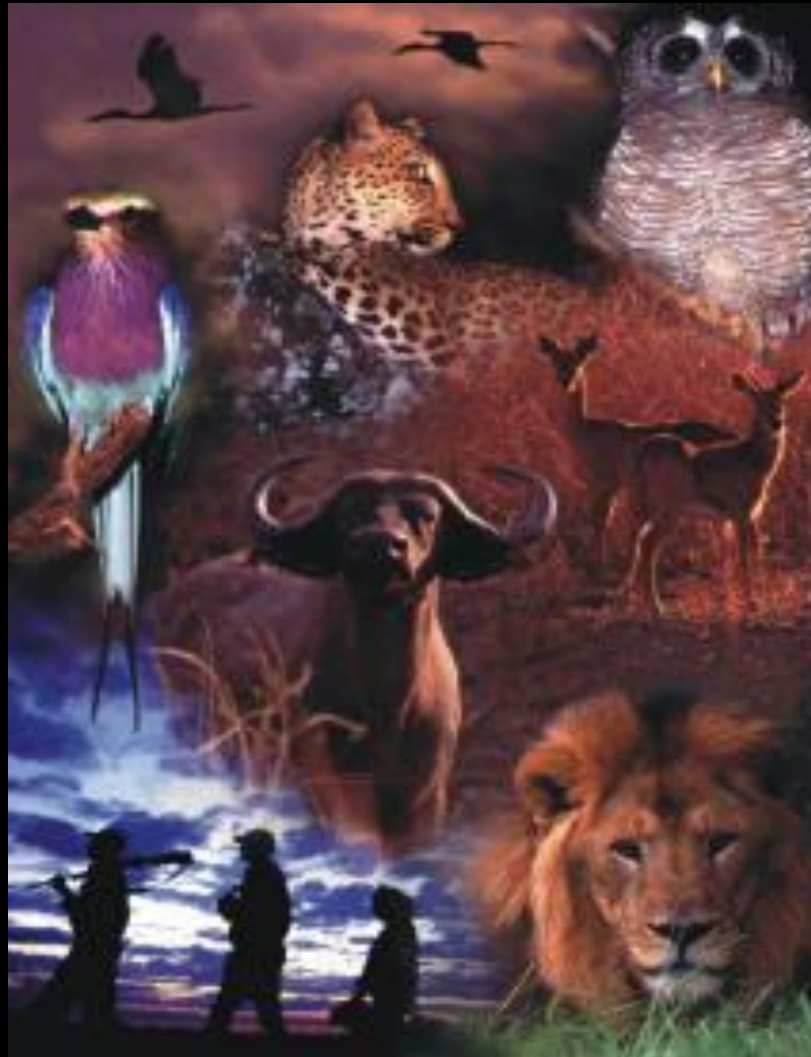


UNIT A: BIODIVERSITY

What is Biodiversity?



Diversity *within* species

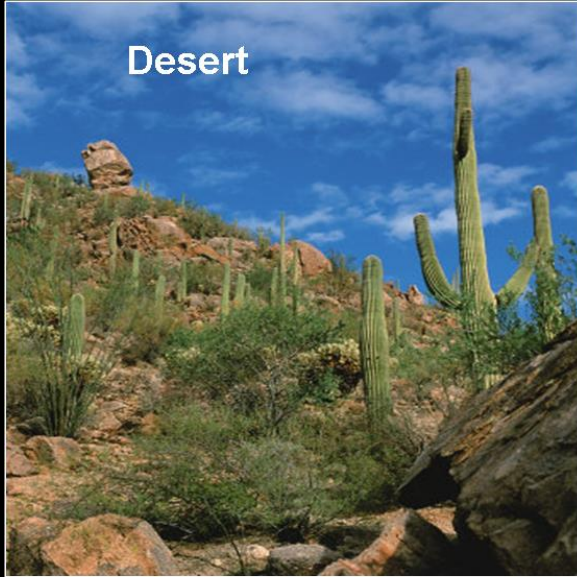


Diversity *between* species



Diversity between ecosystems

Desert



Coral Reef



Prairie



Tundra



-within and between almost all species, there are differences



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-these differences are known as VARIATIONS

-Variations are found in ALL groups of living things!

WHAT ARE SOME VARIATIONS BETWEEN STUDENTS IN OUR CLASS??



Why is there variation? Why is it important?

**-Biological Diversity looks at the variation within species
(*genetic diversity*)....**



...the variation between species....



..and the variations of ecosystems.



UNIT A: BIODIVERSITY

- Bill Nye <https://www.youtube.com/watch?v=-Sybgof-X2k>
 - To 11:00

WORLD BIODIVERSITY MAP

<https://mol.org/patterns/richness>

Learning Goal: describe the relative abundance of species on Earth and in different environments

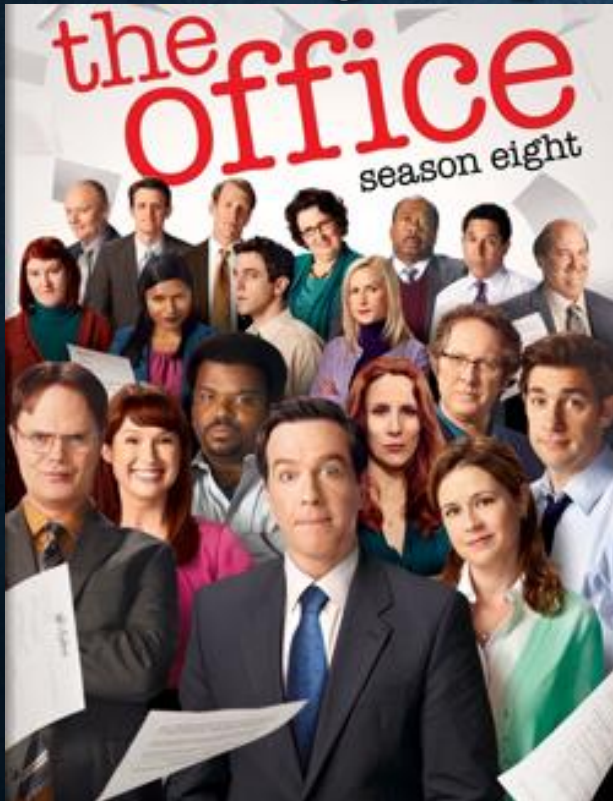
LEARNING GOALS

- Observe variation in living things, and describe examples of variation among species and within species
- Observe and record data, and prepare simple line drawings

NOTES

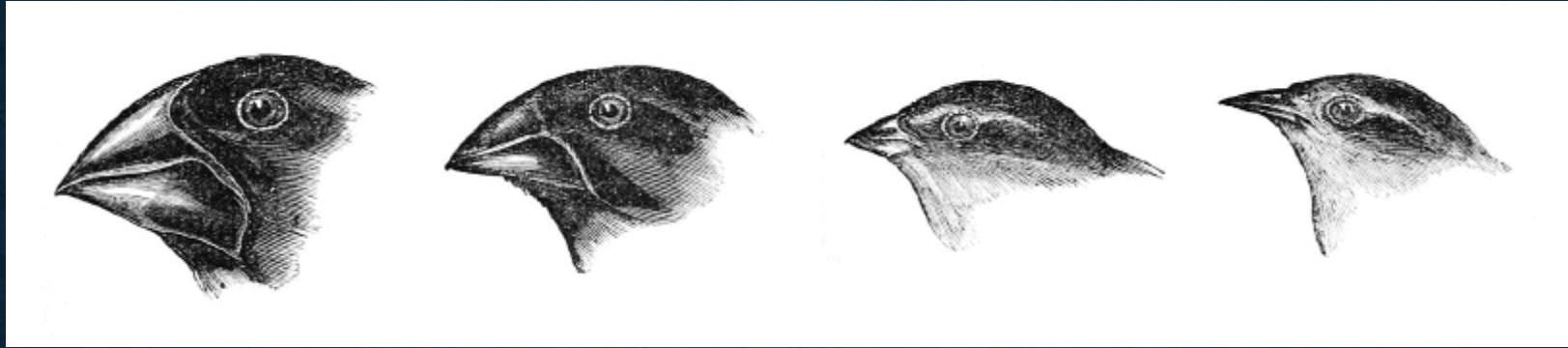
Variation: a different form or version of something

1.) Within a single species



2.) Among different species





BATTLE OF THE BEAKS: DARWIN'S FINCHES

<https://www.youtube.com/watch?v=mcM23M-CCog&t=16s>

BATTLE OF THE BEAKS RUBRIC

	4	3	2	1	0*
Describe and analyze examples of variation	Responses are always complete, clear, and accurate	Responses are mostly complete, clear, and accurate	Responses are sometimes complete, clear, and accurate	Responses are rarely complete, clear, and accurate	Not enough evidence * You will be required to show your learning another way.
Record data	Data tables are always complete and clear	Data tables are mostly complete and clear	Data tables are sometimes complete and clear	Data tables are rarely complete and clear	
Prepare simple line graphs	Line graphs are always accurate and complete	Line graphs are mostly accurate and complete	Line graphs are sometimes accurate and complete	Line graphs are rarely accurate and complete	

SAME SPECIES OR DIFFERENT?

Same



SAME SPECIES OR DIFFERENT?

Different



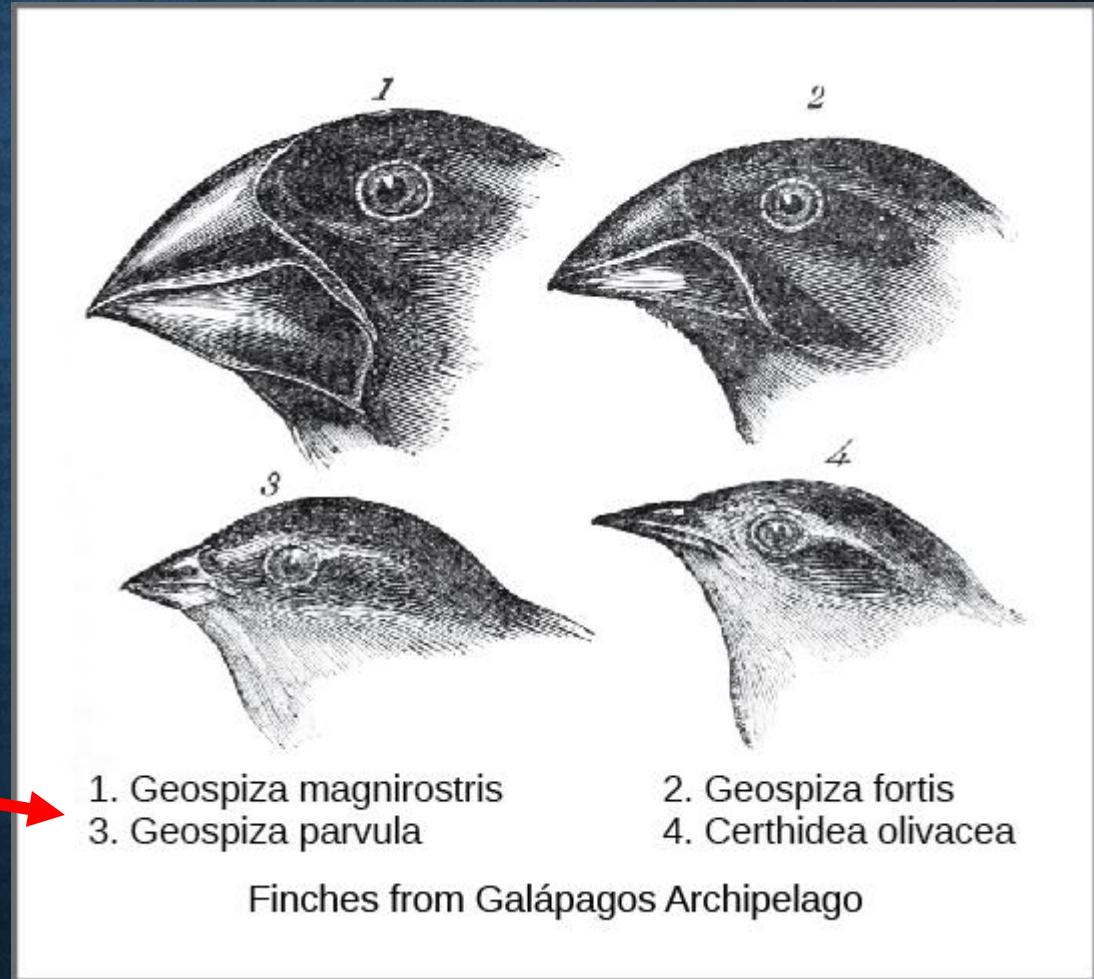
SAME SPECIES OR DIFFERENT?



Different

SAME SPECIES OR DIFFERENT?

- Sometimes it's hard to tell if organisms are part of the same species.
- One way to tell is by looking at the organism's scientific name



What are the levels of classification?



Domain **Domain Eukarya** includes all protists, fungi, plants, and animals.



Kingdom **Kingdom Animalia** includes all animals.



Phylum Animals in **Phylum Chordata** have a hollow nerve cord in their backs. Some have a backbone.



Class Animals in **Class Mammalia**, or mammals, have a backbone and nurse their young.



Order Animals in **Order Carnivora** are mammals that have special teeth for tearing meat.



Family Animals in **Family Felidae** are cats. They are carnivores that have retractable claws.



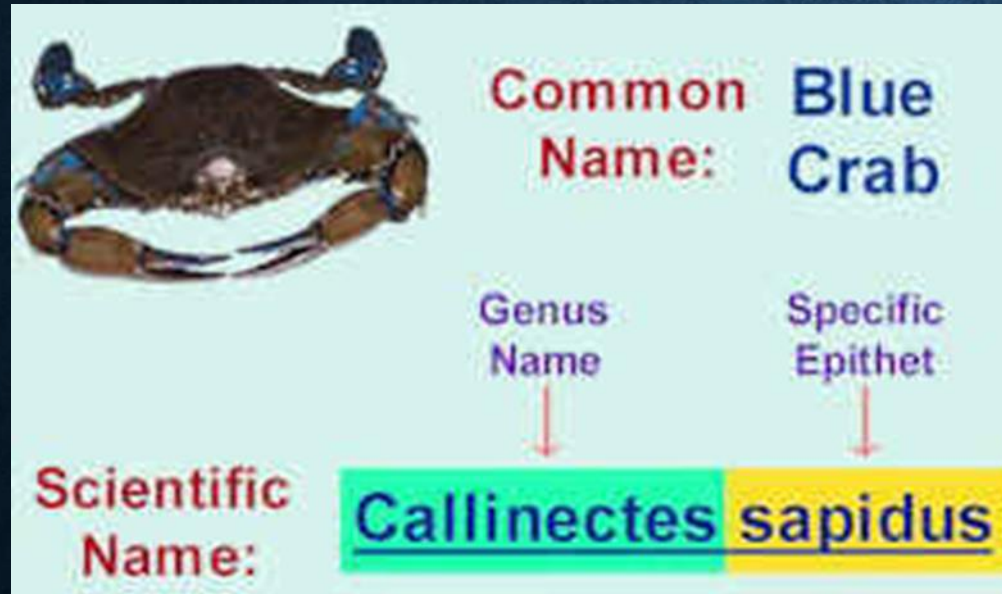
Genus Animals in **Genus *Felis*** are cats that cannot roar. They can only purr.



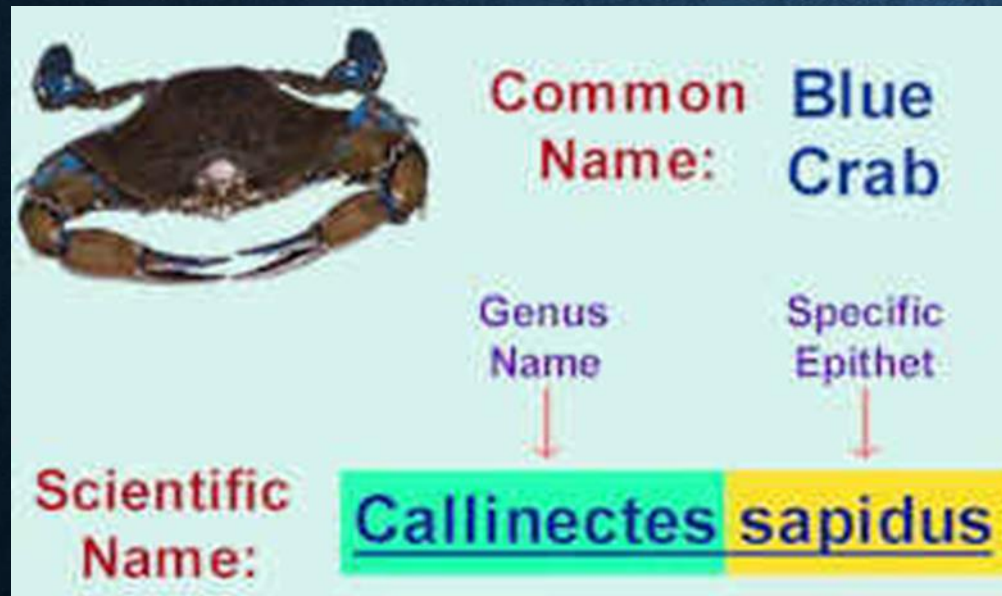
Species The species ***Felis domesticus***, or the house cat, has unique traits that other members of genus ***Felis*** do not have.



ANATOMY OF A SCIENTIFIC NAME



SAME SPECIES OR DIFFERENT?



The lesser blue crab,
Callinectes similis. Photograph

Different

SAME SPECIES OR DIFFERENT?



Heliconius pachinus



Heliconius hewitsoni

Different

SAME SPECIES OR DIFFERENT?



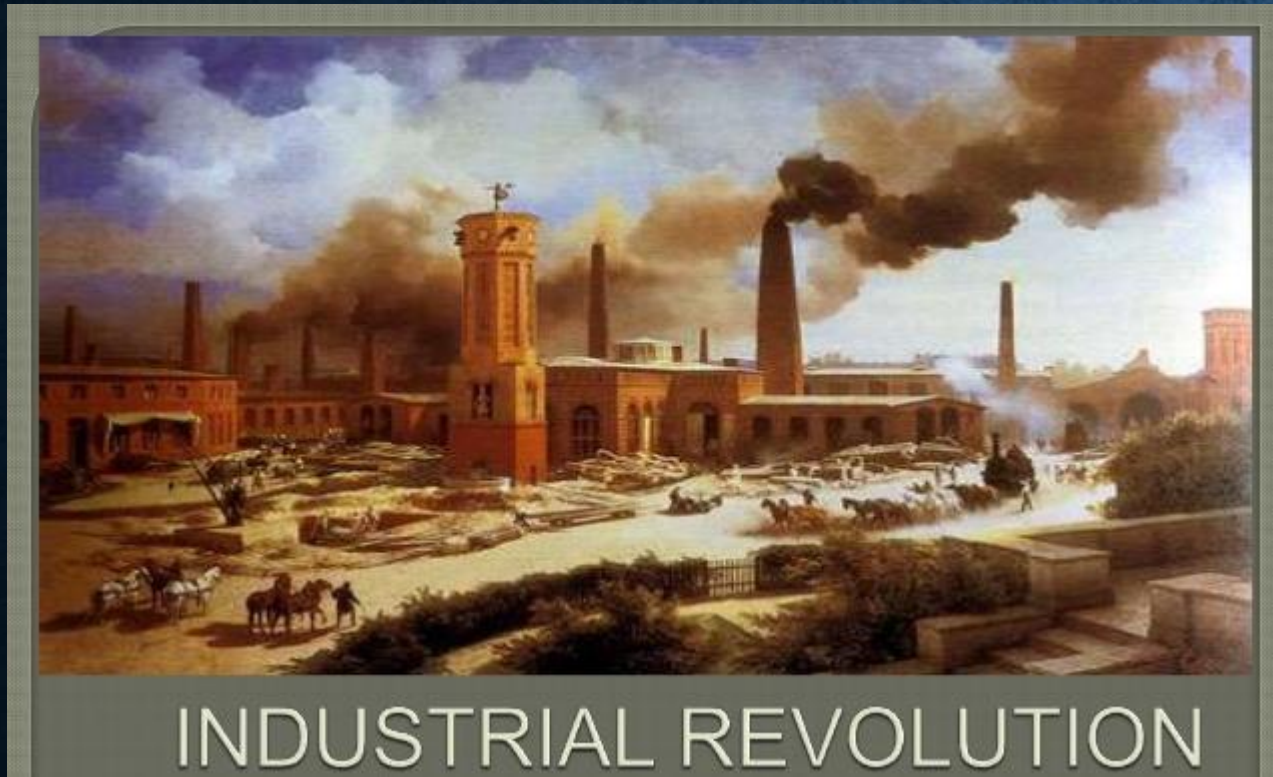
Felis catus



Felis catus

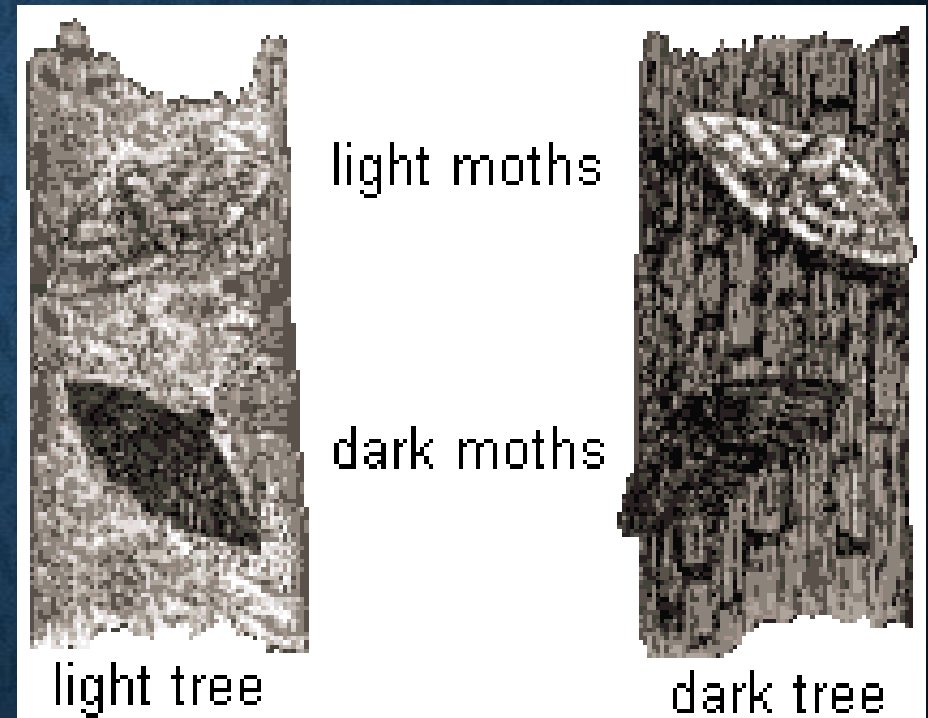
Same

CHECK YOUR UNDERSTANDING



Before

After



During the industrial revolution, the extra smoke in the air caused trees to blacken. Which variation of moths would have had an advantage? Why?

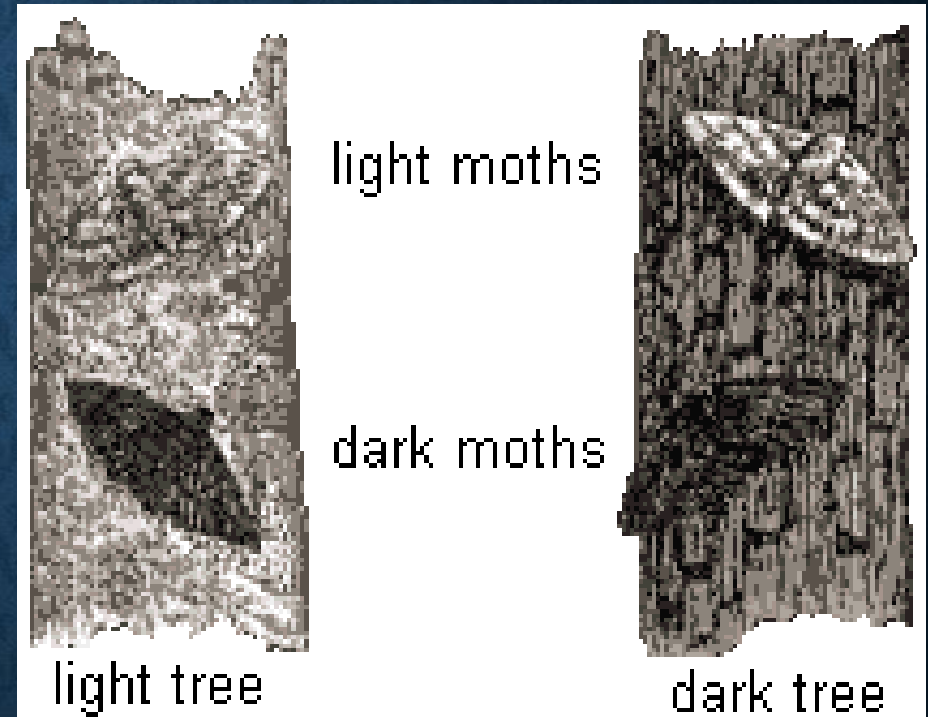
CHECK YOUR UNDERSTANDING



INDUSTRIAL REVOLUTION

Before

After



Answer: the dark moths had an advantage because they were able to blend in better with the trees, and were therefore less likely to be seen and eaten by predators (birds)