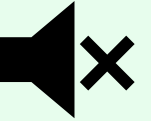


# Title: Variation and Evolution

06/11/2020

Do-now:

1. Complete the Punnet square on whiteboards.  
What % of the offspring would have **spotted** fur?



	D	d
D		
d		

DD and Dd = spotted  
dd = plain



Lesson Title

**Variation and Evolution**

06/11/2020

Learning Intent

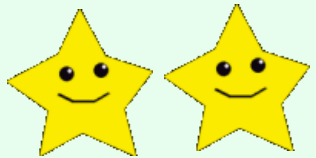
Understand the process of evolution and the role of variation

Success Criteria



State how variation arises

3



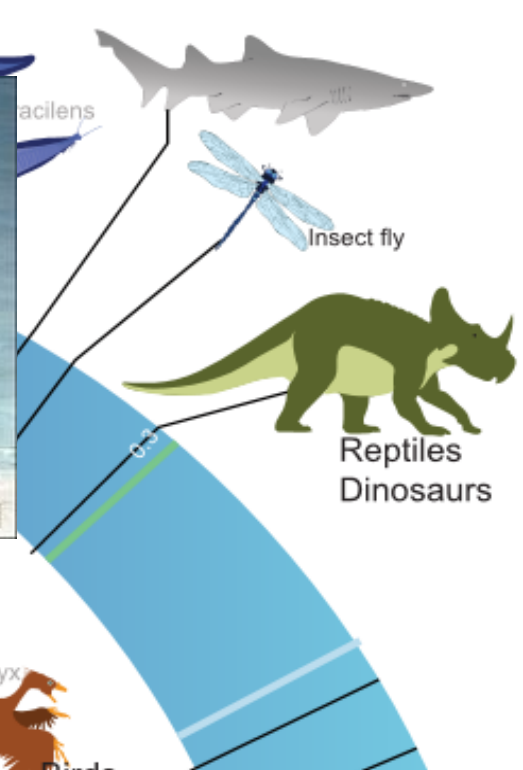
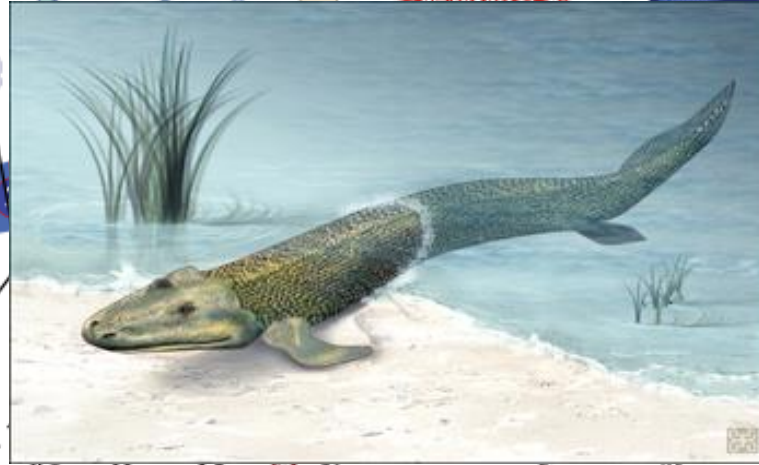
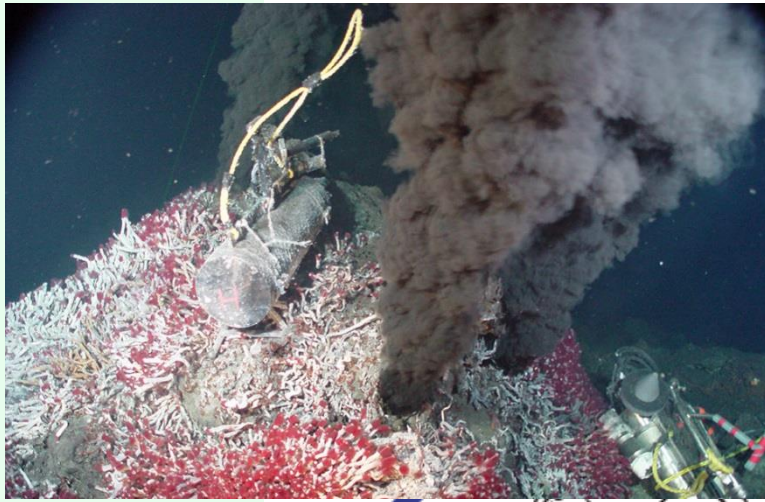
Describe the process of evolution

4



Apply your understanding of evolution to different examples

5-6

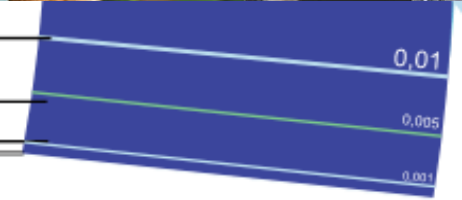


Billion years ago

Theory of Natural Selection:  
**All species** evolved from  
**simple life** forms more than  
**3 billion years ago!**



0.00001 writing  
 0.0002 homo sapiens  
 0.0043 Ardipithecus ramidus  
 0.001 fire  
 0.01

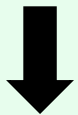




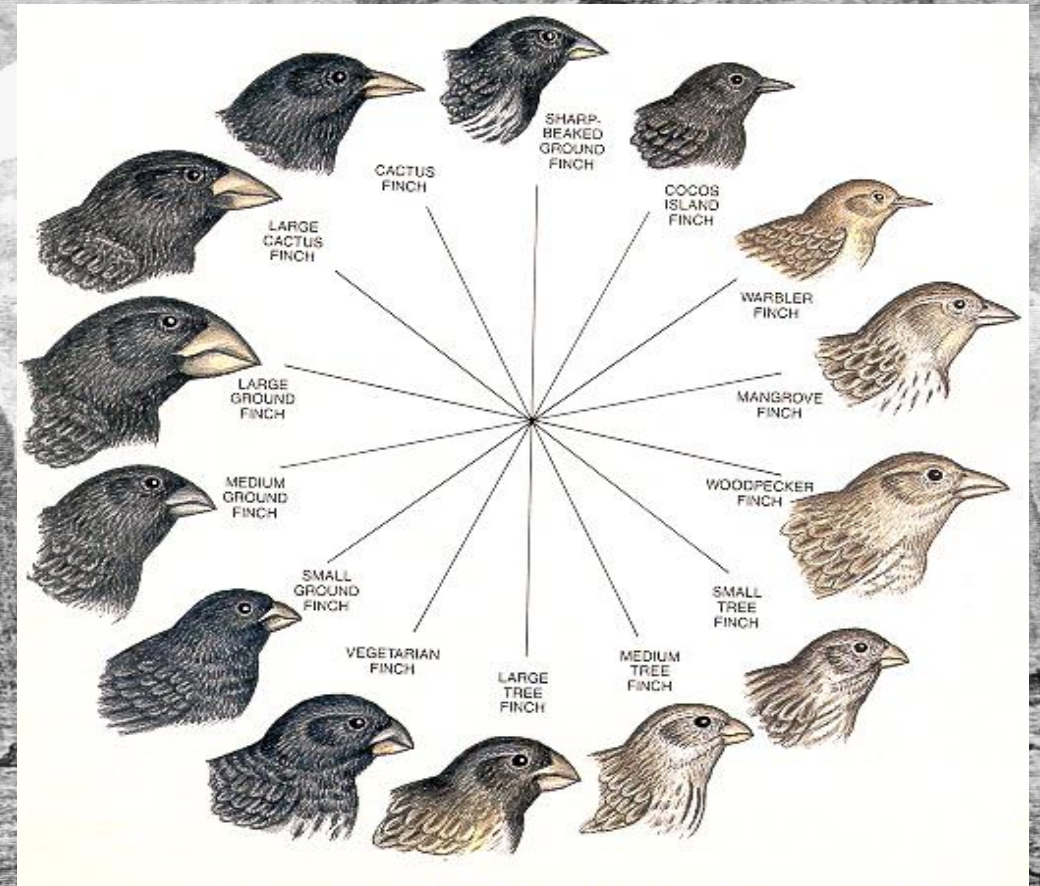
**Variation** in  
beak shape  
and size



Those that ate  
seeds had  
abundant food,  
**survived**



Able to  
**reproduce** and  
pass on  
advantageous  
genes



**Charles Darwin and the HMS Beagle 1832-1836**

**Survival of the fittest!**



## L2: Describe the process of evolution

Friday, 06 November 2020

They all have the same niche, but there's still some **variation** between the members

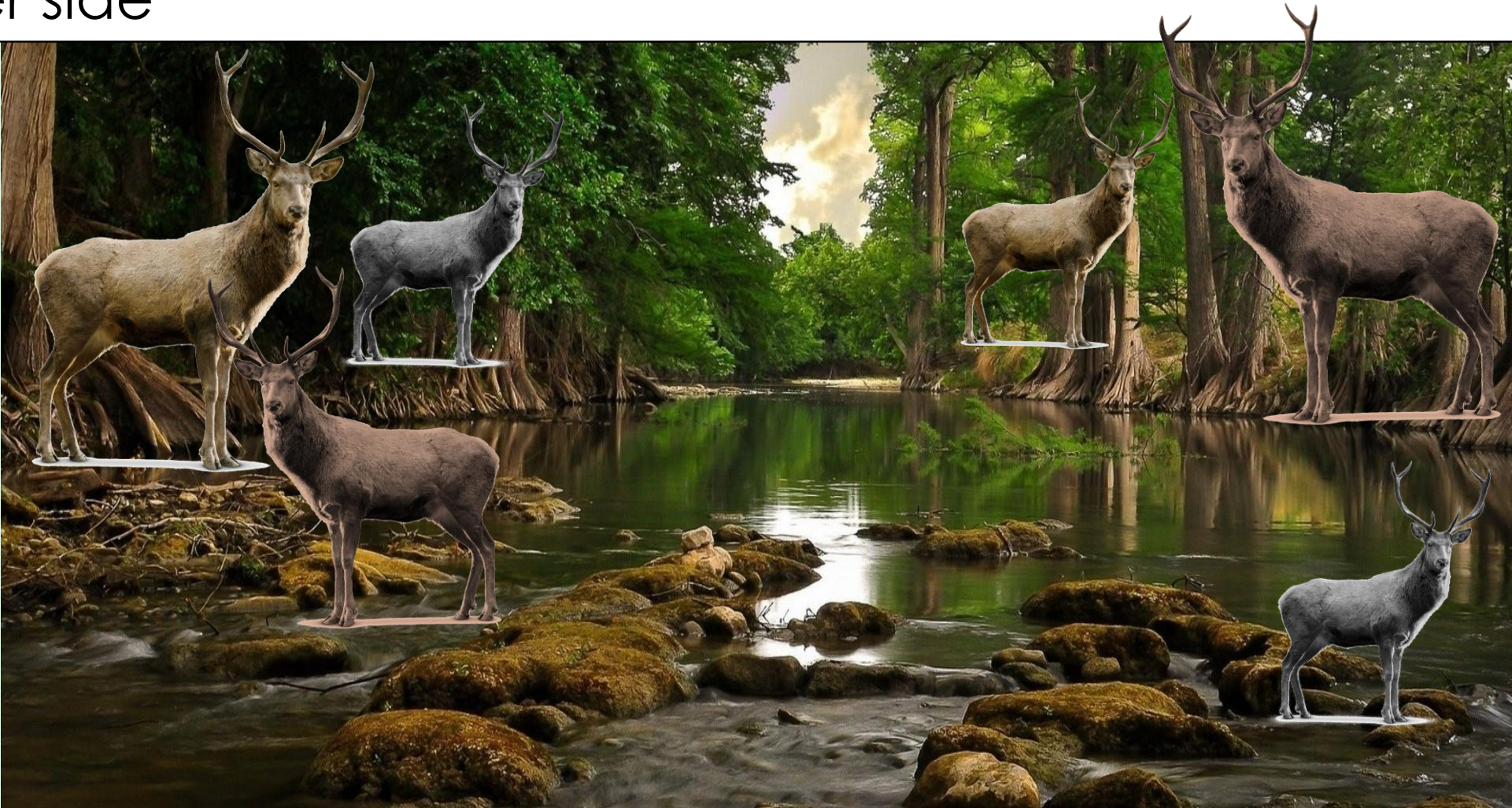




## L2: Describe the process of evolution

Friday, 06 November 2020

Plate tectonics cause a rift to occur in the forest, and a large river forms that is too deep or fast to cross. Half of the species are now on the other side





## L2: Describe the process of evolution

Friday, 06 November 2020

Each side now has a **different niche**, so a different **variation** is more **useful**. Surroundings on the left are darker and individuals are better **camouflaged** from predators.





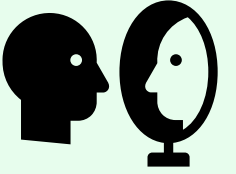
## L2: Describe the process of evolution

Friday, 06 November 2020

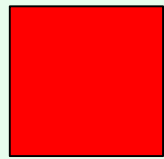
Over a long period of time (thousands of years), those better adapted to the surroundings **survive** and **reproduce** more passing these **genes** to their offspring. This is called **evolution**.

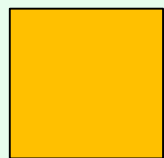


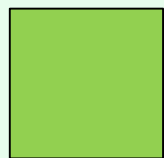




Which of these is correct?

 Variation → Environmental change → Reproduction  
→ Survival

 Variation → Environmental change → Survival →  
Reproduction

 Variation → Survival → Environmental change →  
Reproduction



L2/3: Describe the process of evolution, apply to different scenarios

**Practice with aid**

Pair Whisper



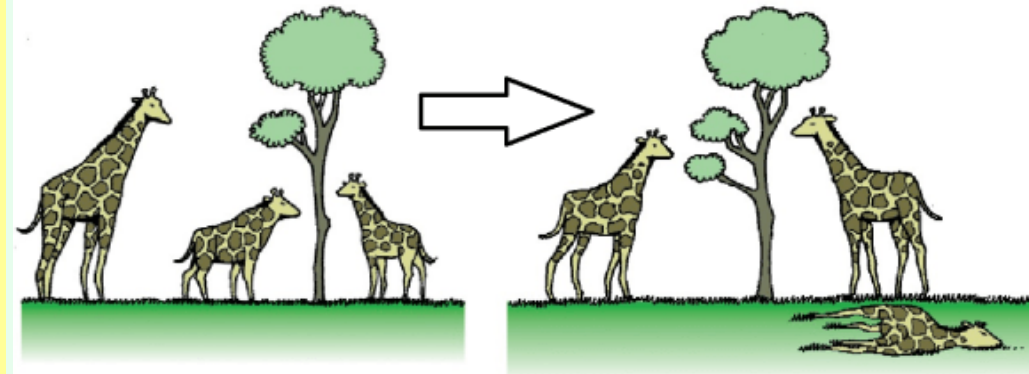
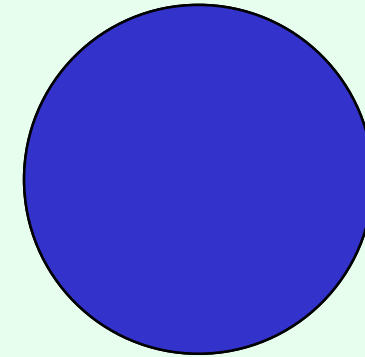
## Task:

1. Fill in the gaps using these key words:

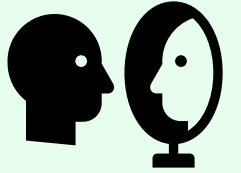
**environmental change, increase,  
genes, mutations, reproduce,  
generation, individuals, variation,  
survive, selection pressure,  
evolution, survive,**

2. Complete the worksheet for different examples.

**15 minutes**

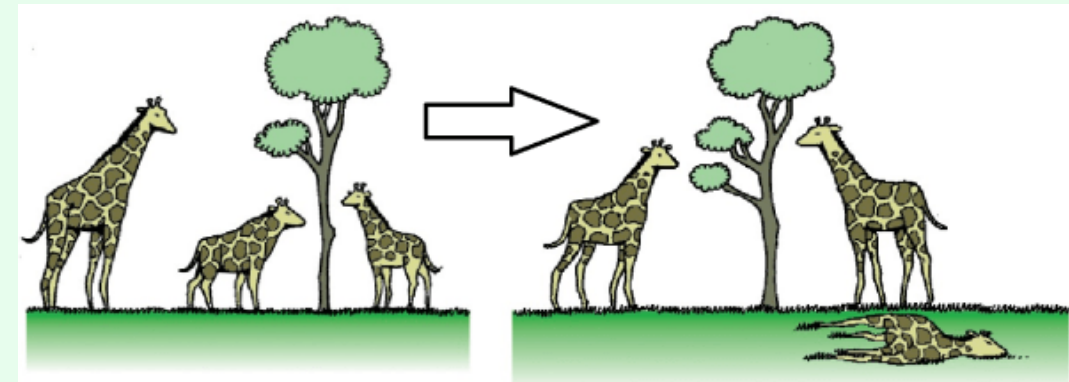
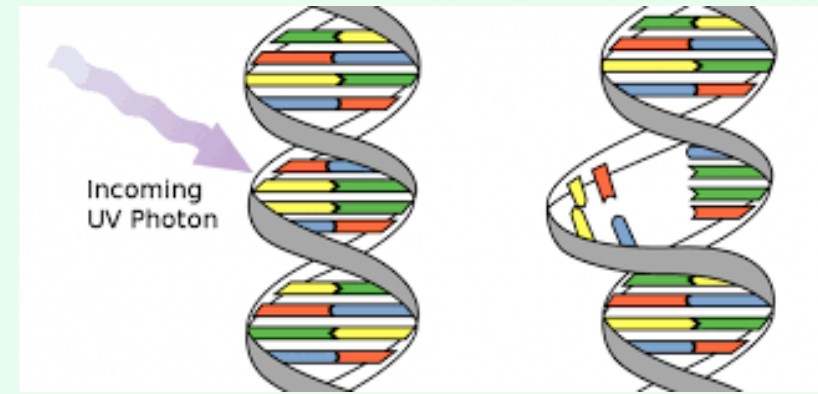
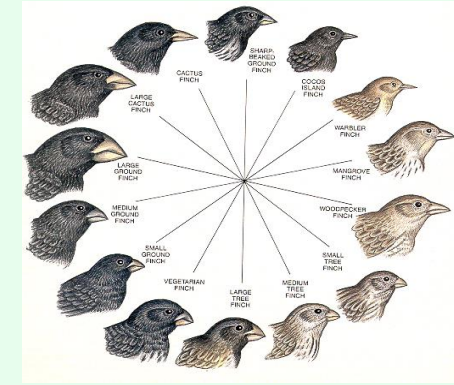






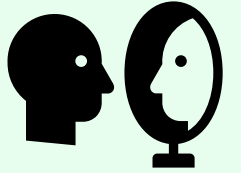
PA  
/12

In any population there is always variation, this is caused by Genetic mutation in the DNA. Some of these mutations will help the organism survive for longer in their habitat and will reproduce more. If there is a Selection pressure, like predation, mating, disease or Environmental change, the individuals with these adaptations would survive and pass these advantageous genes onto the next generation, which will also be better adapted. Over time, the number of individuals with the advantageous genes will increase. This is called evolution.





L2/3: Describe the process of evolution, apply to different scenarios



PA  
/12

natural variation in amount of body hair;  
in cold environment, (having genes) which produce long  
hair is an advantage;  
because hair insulates; OWTTE  
such animals more likely to survive;  
and pass these genes onto succeeding generations  
*each for 1 mark*

[5] e, the

there is  
variation,  
some giraffes have  
short necks,  
while others have  
long necks.

long necks are able  
to reach the food and able  
to Eat/survive more.  
Short necked individuals  
die and are  
unable to pass on their  
genes.

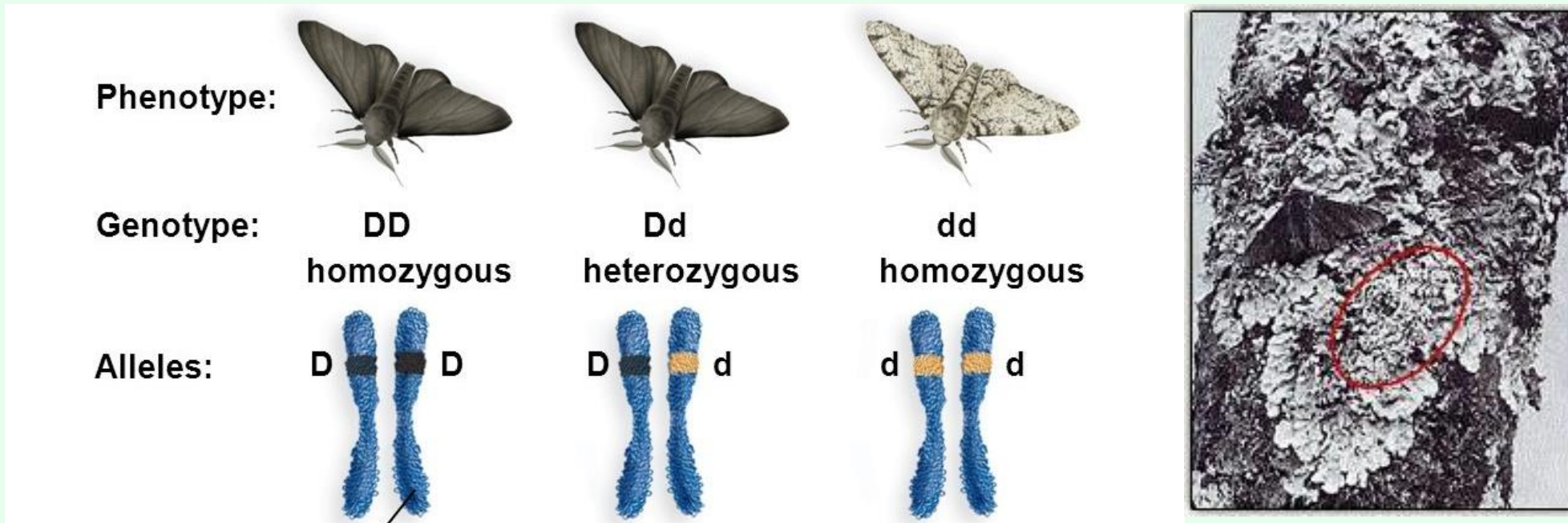
gene for  
long neck  
will increase in  
frequency,  
resulting in  
evolution.



L3: Explain the process of evolution for different examples



Independent  
Whisper



Due to a **selection pressure** different **alleles** may be selected for and can **change in frequency** in a population.

L3: Explain the process of evolution for different examples

## Application of learning



Independent  
Whisper



**How is this providing evidence of natural selection?**